UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 or 15(d) of
THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2023 Commission File Number 000-14893

RESEARCH FRONTIERS INCORPORATED

(Exact name of registrant as specified in its charter)

DELAWARE	11-2103466
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
240 CROSSWAYS PARK DRIVE WOODBURY, NEW YORK	11797-2033
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code (516) 364-1902

Securities registered pursuant to Section 12(b) of the Act: Title of Class	Name of Exchange on Which Registered
Common Stock, $0.0001 Par Value	The NASDAQ Stock Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐	Accelerated filer ☐	Non-accelerated filer ☐
Smaller reporting company ☒		Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared its audit report. ☐

If the securities registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to Section 240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2023 (the last business day of the registrant's most recently completed second fiscal quarter), computed based on the closing sale price of $1.60 was $51,773,808. In making this computation, all direct and indirect shares known to be owned by directors and executive officers of the Company and all direct and indirect shares known to be owned by other persons holding in excess of 5% of the Company's common stock have been deemed held by "affiliates" of the Company, and awards of restricted stock subject to vesting are assumed to have been fully issued and outstanding. Nothing herein shall prejudice the right of the Company or any such person to deny that any such director, executive officer, or stockholder is an "affiliate."

On March 7, 2024, the registrant had 33,509,287 shares of Common Stock outstanding.

PART I

ITEM 1. BUSINESS

Forward-Looking Statements

Information included in this Annual Report on Form 10-K may contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are not statements of historical facts, but rather reflect our current expectations concerning future events and results. We generally use the words "believes," "expects," "intends," "plans," "anticipates," "likely," "will" and similar expressions to identify forward-looking statements. Such forward-looking statements, including those concerning our expectations, involve risks, uncertainties and other factors, some of which are beyond our control, which may cause our actual results, performance or achievements, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. These risks, uncertainties and factors include, but are not limited to, those factors set forth in this Annual Report on Form 10-K under "Item 1A. – Risk Factors" below. Except as required by applicable law, including the securities laws of the United States, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. You are cautioned not to unduly rely on such forward-looking statements when evaluating the information presented in this Annual Report on Form 10-K.

General:

As used herein, "we," "us," "our," the "Company" or "Research Frontiers" means Research Frontiers Incorporated unless otherwise indicated. Research Frontiers operates in a single business segment which is engaged in the development and marketing of technology and devices to control the flow of light (see Note 1 to the Consolidated Financial Statements). We develop and license our patented suspended particle device ("SPD-Smart") light-control technology to other companies that manufacture and/or market the: (i) SPD-Smart chemical emulsion, (ii) light-control film made from the chemical emulsion, (iii) the light-control panels made by laminating the film, (iv) electronics to power end-products incorporating the film, or (v) lamination services for, and the end-products themselves such as "smart" windows, skylights and sunroofs. Research Frontiers currently has numerous companies that, in the aggregate, are licensed to primarily serve five major SPD-Smart application areas (aerospace, architectural, automotive, marine and display products) in every country of the world.

The Company has entered into a number of license agreements covering its light control technology. During 2023, four licensees accounted for 39%, 16%, 16% and 13% of fee income recognized during the year. During 2022, four licensees accounted for 28%, 23%, 13% and 11% of fee income recognized during the year.

Research Frontiers was incorporated in New York in 1965 to continue early work that Dr. Edwin Land, founder of Polaroid Corporation, and others had done in the area of light-control beginning in the 1930s. Research Frontiers was reincorporated in Delaware in 1989. Since 1965, Research Frontiers has actively worked to develop and license its own SPD technology, which it protects using patents, trade secrets and know-how. Although patent and trade secret protection are not a guarantee of commercial success, Research Frontiers currently has 219 patents that have been issued worldwide. In addition, the Company has current patent applications in the US and other countries that, if granted, would add a significant number of additional patents to its portfolio. The Company has and continues to devote significant resources to develop, license and protect its intellectual property position.

SPD-Smart products use microscopic light-absorbing nanoparticles that are typically suspended in a film. These particles align when an electrical voltage is applied, thus permitting light to pass through the film. Adjustment of the voltage to the SPD film gives users the ability to quickly, precisely and consistently regulate the amount of light, glare and heat passing through the window, skylight, sunroof, window shade or other SPD-Smart end-product. This SPD film can be incorporated between two layers of glass or plastic, or combinations of both, to produce a laminate that has enhanced energy efficiency, light-control and security performance properties.

Research Frontiers believes that the SPD industry is in the initial phase of growth. SPD light-control technology may have commercial applicability in many products where variable light-control is desired. Some existing product applications for SPD-Smart glass or plastic include the following:

- Automotive:

  sunroofs, sun visors, side windows and rear windows, and head-up displays;

- Aerospace and marine:

  windows, doors, partitions, sun visors, skylights, and lateral cockpit windows;

- Architectural:

  commercial and residential windows, doors, skylights, and partitions for new construction, replacement, and retrofit applications; and

- Information Displays:

  SPD-Smart light-control film combined with Transparent OLED displays and PDLC projection systems.

In addition to the product applications listed above, SPD-SmartGlass technology may also offer potential benefits in the development of new flat panel displays, light conservation panels, neonatal and other incubators, consumer electronics, eyewear, automotive exterior lighting systems, self-dimming automotive rear-view mirrors and other reflective information displays. However, such products need additional product design, engineering or testing before the commercial potential of such SPD-SmartGlass products can be determined.

Some of our licensees consider the stage of development, product introduction strategies and timetables, and other plans to be proprietary or secret. Unless required to disclose such information, the Company may limit its disclosure of licensees' activities until such licensees, or their customers, make their own public announcements of planned or actual product launches.

Some of the early sales and uses of SPD technology were to low volume commercial installations and some have involved concept and test installations by licensees and their customers. Recent progress with regard to market development and commercialization activity has been the result of focused and active efforts by Research Frontiers and its key licensees who have invested in product development and improvements, production facilities, increased production capacity, durability, performance testing, quality control and assurance, and marketing programs.

Beginning in late 2011, higher volume sales of SPD products commenced with the launch by Daimler AG of the Magic Sky Control™ all glass roof option on their Mercedes-Benz SLK (subsequently renamed SLC). In early 2012, sales of the Magic Sky Control™ all glass roof option commenced on their Mercedes-Benz SL. In mid-2014, sales of the Magic Sky Control™ all glass roof option commenced on the new S-Class Coupe with other Mercedes-Benz S-Class variants began offering the Magic Sky Control™ all glass roof option in 2015 and 2016. These vehicles were discontinued at the end of their current model lifecycle. In the case of the SLC and SL roadsters, it is expected that the next version of the SL roadster might use a canvas roof instead of the current switchable and static tint glass roofs. It has not been announced whether plans for the next models of the S-Class and Maybach vehicles will include any switchable glass technology in the sunroofs or windows. Subsequent to introduction by Mercedes, other car makers such as McLaren, General Motors, Ferrari and others have introduced SPD-SmartGlass roofs and other products into serial production in various car models, and other new car models using SPD-SmartGlass technology are expected to enter into serial production based upon current development efforts that are underway between the Company's licensees and these automakers. Increased volumes of products using SPD-SmartGlass technology are also expected in trains, boats, aircraft, and other transportation vehicles, in architectural applications, and in various forms of information displays for the consumer and transportation markets.

Research Frontiers believes that with the normal progression of product and manufacturing improvements, and as licensees become more experienced at the lamination, fabrication and installation of SPD-Smart products for various applications, the adoption rates for SPD-Smart products will grow and accelerate, which we expect will increase the stream of royalty income for the Company. Research Frontiers believes the largest and most predictable near and intermediate term market for its technology will be automotive glass.

As part of their marketing and branding programs, many of our licensees have developed their own trademarks for SPD-Smart emulsion, film, and end-products and these are listed in their respective press releases, product brochures, advertising and other promotional materials. Research Frontiers uses the following trademarks: SPD-Smart™, SPD-SmartGlass™, VaryFast™, SPD-CleanTech™, SPD Clean Technology™, SmartGlass™, The View of the Future - Everywhere you Look™, Powered by SPD™, Powered by SPD-CleanTech™, Powered by SPD Clean Technology™, SG Enabled™, SPD Green and Clean™, SPD On-Board™, Speed Matters™ and Visit SmartGlass.com - to change your view of the world™.

In each of the last three fiscal years, the Company devoted substantially all of its time to the development of one class of products, namely SPD-Smart light-control technology, and therefore, revenue analysis by class is not provided herein. Information about our operations and those of our licensees is included below and in our financial statements and notes thereto.

The Company does not believe that future sales will be seasonal in any material respect. The Company does not currently directly manufacture products on its own but rather depends on activities of its licensees and vendors. Due to the nature of the Company's business operations and the fact that the Company is not presently a manufacturer, there is no backlog of orders for the Company's products.

The Company believes that compliance with federal, state and local provisions which have been enacted or adopted regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment, will not have a material effect upon the capital expenditures, earnings and competitive position of the Company. The Company has no material capital expenditures for environmental control facilities planned for the remainder of its current fiscal year or its next succeeding fiscal year.

Employees:

On March 6, 2024, the Company had six full-time employees, two of whom are technical personnel, and the rest of whom perform legal, finance, marketing, investor relations, and administrative functions. Of these employees, one has obtained a doctorate in Chemistry and one has extensive industrial experience in electronics and electrical engineering. One employee also has a postgraduate degree in business administration, and one has a doctorate in jurisprudence. Also, the Company's suppliers and licensees have people on their teams with advanced degrees in a number of areas relevant to the commercial development of products using the Company's technology. The success of the Company is dependent upon, among other things, the services of its senior management, the loss of which could have a material adverse effect upon the prospects of the Company.

Smart Glass Industry Trends:

There are favorable converging global trends in the major near-term markets for smart glass and SPD-Smart products. The potential for smart glass products is significant and is expected to attain economies of scale with increasing high-volume production. This increased production is also expected to bring down end product costs and expand market opportunities.

In both public and private sectors across the world, there are substantial efforts targeted toward the promotion and use of energy efficient smart glass materials, including those used in automobiles, windows and other architectural glazings, aircraft and boats. Products using SPD-Smart technology continue to be exhibited at trade shows, conferences, and industry events, with such products not only being exhibited by our licensees but also by their customers and by OEMs. While there can be no assurance that these trends will continue, to the extent that they do continue, each is expected to have a beneficial effect on future interest in SPD-Smart technology.

In October 2019, MarketsandMarkets issued *Smart* Glass Market by Technology (Suspended Particle Display, Electrochromic, Liquid Crystal, Photochromic, Thermochromic), Application (Architecture, Transportation, Consumer Electronics), and Geography - Global Forecast to 2023. This market research report concludes that the smart glass market is expected to grow from USD $2.8 billion in 2016 to reach USD $8.35 billion by 2023, with a growth rate of 16.6% between 2017 and 2023. Key conclusions in this report included:

- Smart glass, especially active glass, provides a higher control over heat and light at the will of the user, thereby providing considerable electricity cost-savings and conclusively making the construction spaces more environment-friendly.

- One of the biggest hindrances to the growth of smart glass industry demand is its higher cost. The higher cost of raw material and its limited availability is undermining its penetration at a larger scale. Constant innovations are happening in terms of raw material, product design, and work capacity, which will simultaneously attract new users and provide opportunity to manufacturers to rationalize the product cost over the forecast period.

In January 2023, MarketsandMarkets issued *Smart Glass Market by Technology* Smart Glass Market by Technology (Suspended Particle Display, Electrochromic Glass, Liquid Crystals, Micro blinds, NanoCrystals, Photochromic and Thermochromic), Application, Control Mode and Geographic Analysis - Global Forecast to 2027.

This market research report concludes that the smart glass market is expected to grow from USD $5.0 billion in 2022 to reach USD $8.2 billion by 2027, with a growth rate of 10.4% between 2022 and 2027. Key conclusions in this report included:

- Electrochromic technology to hold largest share of smart glass market during forecast period: Electrochromic technology held ~49% of the market in 2021—the largest share. This is attributed to the faster switching time of electrochromic glass from a clear to dark state and increasing investments in this technology.

- The increased traction of electrochromic technology is primarily attributed to the benefits it offers in a sustainable building design. A majority of the top smart glass manufacturers are focusing on R&D to bring down the prices of smart glass without compromising on quality and thus achieve economies of scale.

- Smart glass using electrochromic and SPD technologies is expected to witness huge demand in the coming years since the degree of customization is high in these two technologies, and the cost of these technologies is expected to drastically decrease.

- Architecture is projected to register highest compound annual growth rate (CAGR) during the Forecast period by application. The marketability of a residential or commercial facility considerably depends on comfort, aesthetics or interior design, and eco-friendliness. Smart glass offers the architecture application energy efficiency and improved aesthetics. Smart glass products have inherent properties that help in market growth. The glare control property of smart glass eliminates unwanted glare from sunlight and can provide bright, clear, and customized lighting levels in the building. Smart glass is also used to adjust the heat levels in buildings. The self-cleaning property of smart glass offers users a superior experience at the low cost of maintenance.

- Opportunity: Growing need for sustainable buildings. The world is becoming conscious of climate change, global warming, and its impact on the planet. The pandemic has also shown the need for green buildings and the benefit of having a sustainable living space. As part of the EU (European Union) Green Deal, the European Commission has set a target to make Europe a climate-neutral The EU also issued directives to member states like the “New Energy Performance in Building” in 2018 to promote sustainable buildings. continent by 2050, focusing on sustainable building and energy performance.

In January 2024, MarketsandMarkets issued *Smart Glass Market by Technology* (Electrochromic, Suspended Particle Display, Liquid Crystal, Photochromic, Thermochromic, Micro-blinds), Mechanism (Active Passive), Control System (Manual, Remote, Mobile-based, Voice-based) – Global Forecast to 2029.

This market research report concludes that the smart glass market is expected to be valued at USD $5.8 billion in 2024 and is projected to reach USD $9.4 billion by 2029. It is expected to grow at a CAGR of 9.8% from 2024 to 2029. Significant drivers of this growth are increasing awareness and adoption of energy-efficient solutions, particularly in the construction and automotive sectors. Technological advancements such as IoT integration present opportunities for enhanced functionality and connectivity.

Key conclusions in this report included:

- Transportation end use segment is predicted to hold the largest share during the forecast period in smart glass market. The dominance of the transportation sector in the smart glass market stems from its widespread integration across various applications in automotive, aerospace, and marine industries. In automotive applications, smart glass is increasingly utilized in windows, sunroofs, and rearview mirrors, providing features like glare reduction, UV protection, and privacy control. Smart glass's lightweight and energy-efficient properties in the aerospace sector contribute to improved passenger comfort and overall fuel efficiency. Additionally, in marine applications such as cruise ships and yachts, smart glass enhances aesthetics and offers panoramic views. With the transportation sector experiencing substantial growth and a heightened focus on safety, aesthetics, and energy efficiency, it emerges as the primary contributor to the overall market share, establishing itself as a crucial segment within the smart glass market.

- "Active" smart glass accounts for the highest growth rate during the forecast period, due to their dynamic and responsive nature. Active smart glass systems, driven by external stimuli like electrical voltage or heat, provide rapid optical properties such as tint and transparency adjustments. This real-time adaptability is particularly attractive across various applications, including smart windows in homes, offices, and automobiles, as it offers precise control over environmental factors.

- Smart glass market for the mobile-based control system is predicted to exhibit the highest CAGR market during the forecast period. Mobile-based control systems hold a higher CAGR in the smart glass market due to their seamless integration with the modern lifestyle and the increasing reliance on mobile devices. The convenience of controlling smart glass functionalities through mobile applications aligns with the growing trend of smart home and building automation. The widespread adoption of mobile-based control systems, coupled with ongoing technological advancements in mobile platforms, positions it as a key driver for the observed higher CAGR in the smart glass market.

- Architecture is predicted to hold the highest growth rate in the smart glass market, due to increasing demand for innovative and energy-efficient solutions in the construction industry. Smart glass, with its ability to optimize natural light, regulate indoor temperatures, and enhance sustainability, aligns seamlessly with the evolving trends in modern architecture.

In June 2019, Grand View Research issued *Smart Glass Market Size, Share & Trends Analysis (SPD, PDLC, Liquid Crystal, Electrochromic), By Application (Consumer Electronics, Architectural Transportation), And Segments Forecast, 2019-2025*. This market research report concludes that the smart glass market is expected to grow from USD $3.7 billion in 2018 to reach USD $8.6 billion by 2025 reflecting a growth rate of 15.2%. Key conclusions in this report include:

- Smart glass has gained importance due to its inherent capability of thermal and acoustic insulation, energy conservation, and aesthetic 3D designer proposition.
    - The automotive and residential applications have witnessed a dynamic phase change in functionalities from legacy weather protection features to seclusion apparatus and advanced energy-conserving.
    - Architecturally advanced construction philosophies incorporating the installation of large windows in the majority of buildings are projected to drive demand in Europe.
- The transportation segment accounted for the highest market share in 2018 and is projected to retain its leading position throughout the forecast years. The segment is further categorized into automotive, aircraft, and marine.
    - Automotive sector is the largest consumer of switchable glass and captured the largest revenue share of more than 70% in 2018.
    - The technology provides protection from UV rays and controls heat inside the vehicles by limiting energy consumption.
    - Initiative for reducing CO2 emissions and minimizing energy consumption are encouraging manufacturers to develop anti-heat glass and glazing solutions.
    - High demand for luxury automobiles, especially in Asia Pacific, is driving the market growth.
    - Major aerospace manufacturers, such as The Boeing Company, Beechcraft Corporation, Airbus SA, Bombardier Inc., and Embraer S.A., are shifting towards electronically dimmable windows.

Automotive Market:

In the automotive industry, global trends include the introduction of larger sunroofs and panoramic roof panels in transportation vehicles, and a higher percentage of these vehicles having a sunroof or using more glass in the roof.

SPD-SmartGlass has also been shown in armored automotive glass applications, recreational vehicles, and a new market is also beginning to develop for personalized custom conversions of automobiles for owners who wish to express themselves through the design of the cars they own and/or drive.

Aircraft Market:

In the aircraft industry, there is a trend towards larger windows with more passenger control and functionality, and an increased investment in improving the passenger experience. In the "transport category" (primarily large commercial passenger aircraft) segment, the world's two largest aircraft manufacturers are both promoting the size of the windows in new aircraft platforms already being delivered (e.g., Boeing 787 and Airbus A350). In the "general aviation" category (primarily business jets, private or chartered smaller aircraft) this trend is true as well. For example, Gulfstream is promoting the size of the windows on their G650 platform as well as their upcoming G700 flagship aircraft, and Bombardier highlights the size of the cabin window on the Global 7000 and 8000 platforms. Several OEMs either already offer, or have announced their interest to include, electronically dimmable windows in their aircraft – including Boeing, Airbus, Bombardier, Embraer, Textron-Beechcraft, HondaJet, Airbus Helicopters, Airbus Corporate Jets, Bell Helicopter, Dassault, Epic Aircraft and One Aviation. Electronically dimmable windows for aircraft may use SPD technology or may use other smart window technologies such as liquid crystal or electrochromic technology. A window system using electrochromic technology was introduced in the Boeing 787. There have been concerns raised that this aircraft's electronically dimmable windows are not dark enough for long haul flights, transmit too much heat into the cabin, and have a switching speed that is too slow.

The Company believes its SPD technology offers important performance advantages over other technologies including faster, more uniform response time, superior heat-rejection when the aircraft is parked on the ramp, superior acoustic insulation, an automated dimming system to continuously maintain a constant level of light in the cabin in real-time, weight-savings, and the use of scratch-resistant, lightweight (saving fuel) chemically strengthened glass. Leading companies manufacturing electromechanical pleated window shades have products that incorporate SPD-Smart windows into their designs, and Tier 1 suppliers of other cabin systems (e.g., cabin management systems) are featuring SPD-Smart electronically dimmable windows in mockups.

SPD technology is also the only commercially available light-control smart window technology known to have passed the stringent safety and durability tests required by the aviation industry and to have received a Supplemental Type Certificate (STC) from the Federal Aviation Administration. Today, SPD-Smart electronically dimmable windows are flying on over 40 models of various aircraft including those used in commercial aviation, general aviation and military aviation. SPD-Smart products have been selected by aircraft manufacturers as standard equipment on new production platforms including the Honda Aircraft HondaJet, Textron-Beechcraft King Air 250, 350i and C90GTx, Epic Aircraft E1000, Airbus ACJ TwoTwenty,

Architectural Market:

The architectural community is actively increasing the use of daylight harvesting, green building technologies and building automation systems to more effectively capture and control natural light as part of energy reduction strategies to offset cooling/heating costs and electricity used by artificial lighting. In addition to design, aesthetic and other benefits, the expanded use of glass also supports a growing body of research which finds that the presence of and control over incoming natural light improves an individual's well-being and productivity. Products using SPD-Smart light-control technology – sunroofs, windows, skylights, partitions and others – can play an important role in supporting these converging global trends.

For architectural applications, various market forces and the distinctive features of SPD-SmartGlass are having a positive influence on interest for SPD-Smart products. Many architects are specifying more glass in their designs to satisfy building occupants' desire for greater connectedness with the outside environment. In addition, there is increasing interest in improving energy efficiency in both commercial and residential buildings. Various studies indicate that buildings in the United States and Europe now account for an estimated 39-40% of total energy use and upwards of 70% or more of electricity consumption. Many architects and building owners are striving for sustainable, "green" buildings that are highly energy-efficient, reduce environmental impact, and improve occupant health and well-being. In addition, the design community is increasingly interested in advanced daylighting systems in buildings that lower electrical lighting usage and reduce heating and cooling loads. Because of this, the ability to control light, glare and heat in these building applications is very important and advanced solutions often are needed to optimize operating efficiencies. SPD-Smart architectural products instantly and precisely provide shading, glare control and heat management solutions for offices and homes, especially when these products are available for new construction, replacement and retrofit projects. These products include insulated glass units, single-panel retrofits, unusually shaped glazings, and products with advanced fabrications such as those with ballistic- and blast-resistant capabilities.

In 2015, Research Frontiers' patented SPD-SmartGlass technology was selected as the exclusive smart glass for the USA Pavilion at the World's Fair, Expo Milano 2015. The USA Pavilion featured 312 large panels of SPD-SmartGlass manufactured under license from Research Frontiers by Isoclima S.p.A. Each panel measures approximately 1 meter by 3 meters, making the total surface area in the roof more than 10,000 square feet. This is the largest known installation of smart glass in the world for a roof application and was seen by over six million people.

Marine Market:

In the marine application, where light-control needs are especially important, many yacht manufacturers currently employ less than ideal glazing solutions as they try to satisfy various shading and solar control objectives. For example, some report having to use as many as five different types of glass in a typical yacht to satisfy diverse glazing needs. SPD-Smart marine products can reduce the number of different types of glass used in these yachts because of their increased functionality, superior performance and versatility. SPD-Smart marine products provide an innovation that allows these operators to manage incoming light, glare and heat while achieving privacy or maintaining one's view as desired.

Historical Background and Recent Developments:

1. SPD-Smart Film Production

Hitachi Chemical

An important material used in SPD-Smart end-products is SPD light-control film that varies the tint of glass or plastic. In early 2007, our licensee Hitachi Chemical began producing its initial SPD-Smart light-control film on its first factory line. During the second half of 2009, Hitachi Chemical announced that it had begun mass production on its new, larger capacity production line and expanded its annual production capacity to 400,000 square meters (over 4.3 million square feet).

Hitachi Chemical's production line is dedicated exclusively to the production of SPD-Smart film. In July 2009, Hitachi Chemical launched its website dedicated to its SPD-Smart light control film and during 2009, Hitachi Chemical outlined in its press releases and public presentations that it plans to "accelerate the use of SPD film, which holds significant potential for growth" and noted that "SPD film is positioned as one of the key emerging products promoted by Hitachi Chemical to become a future leading product for the company."

Hitachi Chemical expanded its SPD film product portfolio by initiating commercial production of a "lighter" version of its film. Both the SPD "dark" and "light" versions of the films provide a high range of visible light transmission. The best-selling SPD "dark" film has a range of approximately 0.5% to 55.0%. This leads to contrast ratios (the ratio of clear to dark light transmission) of up to 110:1. The commercialization of both "dark" and "light" versions of SPD-film provides greater design and performance options for end-product applications.

Hitachi Chemical sold its overall business to Showa Denko, and although sales of SPD film by Showa Denko continued through late 2023, it is expected that Showa Denko may reduce or discontinue the sale and branding of SPD film as part of the acquisition of Hitachi Chemical.

Gauzy Ltd.

In October 2018, Gauzy Ltd. announced that it will be producing SPD-Smart light control film for the entire SPD-SmartGlass industry. The announcement came at a ceremony to celebrate the inauguration of Gauzy's production line to produce SPD-Smart light control film in Tel Aviv-Jaffa.

Gauzy initially announced that its Tel-Aviv film production line has a capacity to produce up to 364,000 square meters of film per year per shift, and that its initial production will be 1.2 meters wide, and in 2019 it planned on expanding its SPD film coating capabilities to 1.5 meters wide rolls, and in 2020 to 1.8 meters wide rolls. In February 2019 Gauzy announced that it would be expanding its SPD film production capacity by having SPD emulsion produced in Tel Aviv and that this emulsion would be coated into SPD-Smart light control film in a new dedicated factory being built by Gauzy in Stuttgart, Germany.

In December 2019, Gauzy Ltd. celebrated the opening of its second production facility in Stuttgart, Germany to produce SPD-Smart light control film for the entire SPD-SmartGlass industry. This state-of-the-art facility, with specially designed coating and curing areas, will give Gauzy the capacity to coat over one million square meters of SPD film per year in widths of up to 1.8 meters.

In January 2023, Research Frontiers, Gauzy Ltd. and their customers showed over 115 thousand attendees at this year's CES new ways to benefit from SPD-SmartGlass.

In April 2020, Gauzy Ltd. announced that it secured Series C investments from Hyundai Motor Company, Blue Red Partners VC, and Avery Dennison. This strategic investment marks the first known equity investment by an automotive OEM in Research Frontiers' entire industry. As part of the announcement of this investment, Gauzy confirmed that its state-of-the-art material synthesis facility in Israel, and its custom SPD production line strategically located in Germany, are currently operating and producing SPD emulsion and light control film for the automotive, aircraft, and architectural industries, with modified staffing and procedures to protect Gauzy's employees during the COVID-19 pandemic.

Customers for Showa Denko's and Gauzy's SPD-Smart film are end-product licensees of Research Frontiers. These licensees receive the film, laminate it between glass or plastic substrates, and then fabricate end-products which are sold into various industries. Most end-product licensees pay Research Frontiers a royalty on the sale of these end-products that typically range from 10-15%.

Others

Other companies are currently licensed by Research Frontiers to sell SPD-Smart light-control film to licensees of Research Frontiers. None of these other companies has yet announced commercial SPD film for sale.

Transportation Vehicle Products:

SPD-SmartGlass is used extensively across many vehicle platforms in the transportation industry. With the use of SPD-SmartGlass light-control film, passengers and occupants in cars, boats, trains, RVs and other vehicles can instantly change the tint of their windows, sunroofs and other glazings to help keep out harsh sunlight and heat, and create an open-air feeling even when the window or sunroof is closed.

In October 2022, Gauzy's Vision Systems discussed their 41 contracts with transportation OEM and Tier-1 suppliers using SPD-SmartGlass technology, summarized below:

- Aerospace Contracts
  + Helicopter Platforms — 5 Contracts
  + Aircraft Platforms — 11 Contracts
  + Aircraft Platforms: Airline (Retrofit) — 1 Contract

- Marine Contracts
  + Sailing Yacht Platforms — 3 Contracts
  + Yacht Platforms — 4 Contracts
  + Cruise Ship Platforms — 2 Contracts

- Railway Contracts
  + Railway Platforms — 3 Contracts

- Specialty Vehicle Contracts
  + Specialty Vehicle Platforms — 9 Contracts

- Recreational Vehicle Contracts
  + RV Platforms — 3 Contracts

In January 2024, Vision Systems disclosed their transportation contracts with OEM and Tier-1 suppliers using SPD-SmartGlass technology.

In aerospace, Gauzy has secured 20 contracts covering a range of aircraft from small to midsize business aircraft like the HondaJet HA-420 and Daher TBM 960, to larger business aircraft including two Airbus ACJ models, various helicopters such as the Airbus Helicopters ACH175, and commercial aircraft, including a Boeing model.

In the marine industry, Gauzy has 9 contracts for sailing yachts, motor yachts, and cruise ships.

Gauzy has 3 railway contracts (including multiple reorders for additional trains for the same manufacturer).

Gauzy has 3 contracts for recreational vehicles.

Gauzy's SPD-SmartGlass solutions are found in many specialty vehicle markets, with 10 contracts.

2. *SPD-Smart Automotive Products:*

Research Frontiers and its licensees are currently working with multiple automotive manufacturers to introduce SPD-Smart windows, sunroofs and roof systems on both concept and production vehicles. Research Frontiers' end-product licensees in this sector include industry leaders American Glass Products, Asahi Glass, Custom Glass, Daimler AG, Isoclima, SER, and Vision Systems. The Company's automotive glass licensees account for the majority of all glass produced for the automotive market throughout the world.

Automotive OEMs:

In 2011, Daimler AG began using SPD-SmartGlass technology in its Magic Sky Control™ panoramic glass roof as an option on its new Mercedes-Benz 2012 SLK. In 2012, Daimler AG began offering its Magic Sky Control™ panoramic glass roof as an option on its new Mercedes-Benz 2013 SL. These SPD products allow drivers and passengers to change the tint of the car roof from dark to clear quickly with a touch of a button. The SLK and SL are the first large-scale series production vehicles to offer SPD-SmartGlass. The Research Frontiers licensees involved with the production of the Magic Sky Control™ roof for the SLK and SL include Showa Denko, which manufactures the SPD-Smart light-control film in Japan. Automotive glass companies Nippon Sheet Glass in Japan and its subsidiary, Pilkington, in the UK and Germany then process and laminates Hitachi's SPD film into the glass for the Magic Sky Control™ roof.

In late 2014, Daimler AG began offering its Magic Sky Control™ as an option on the new Mercedes-Benz S-Class Coupe. In 2015, other S-Class variants (i.e. Standard Wheel base W222, Long Wheel Base V222, Maybach S600 X222 and the Maybach Pullman Limousine) began offering Magic Sky Control™ as an option. The current Mercedes-Benz S-Class is the third large-scale serial production vehicle to offer Magic Sky Control™ using SPD-Smart technology.

The S-Class Coupe offers the largest panoramic Magic Sky Control™ roof ever put into serial production. The surface area of the panoramic roof using SPD-SmartGlass technology on the S-Class is approximately three times the size of the roof glass used on the current SLC and SL roadster. With the addition of the new 2018 S450 and S450 4MATIC S-Class Sedans, a total of 14 Mercedes-Benz model variants have now offered this remarkable panoramic smart glass roof:

- S 450 S-Class Sedan
- S 450 4MATIC S-Class Sedan
- S 560 4MATIC S-Class Sedan
- AMG S 63 S-Class Sedan
- Mercedes-Maybach S 560 4MATIC
- S550 4MATIC S-Class Coupe
- AMG S63 S-Class Coupe
- AMG S65 S-Class Coupe
- SLC 300 Roadster
- AMG SLC 43 Roadster
- SL 450 Roadster
- SL 550 Roadster
- AMG SL63 Roadster
- AMG SL65 Roadster (Standard Equipment)

A key factor in the broad adoption of SPD technology in various automotive windows is its cost. Typically, the cost for new technology products decreases as production volumes increase. The price per square foot of SPD-SmartGlass reported by our licensees has gone down over time in the automotive market. Royalties from the Magic Sky Control panoramic roofs generate a royalty of 10% of the selling price of these roofs by our licensees to Daimler. The roofs on the S-Class are approximately two to three times the surface area of the roofs on the SLC and SL vehicles.

Research Frontiers believes that the addition of the S-Class car model is also significant because it applies our SPD-Smart light-control technology to the broader class of vehicles by moving beyond roadsters to coupes and passenger sedans. Historically, since its debut over 40 years ago, the S-Class represents the premier platform to introduce new technologies to the customer, which in many cases expand to the other less expensive model lines within the Mercedes-Benz brand.

In November 2015 at the Los Angeles Auto Show, Mercedes-Benz launched a refreshed Mercedes-Benz SL. The press release from Mercedes-Benz stated, "Another feature which has been retained is the unique optional extra MAGIC SKY CONTROL: when closed, the panoramic vario-roof automatically changes from dark to transparent or vice-versa within just a few seconds." The MAGIC SKY CONTROL feature is a carry-over from the previous model. Other new features include a new front end, new headlamps, more powerful engines, and a new transmission, among many others.

In January 2016 at the North American International Auto Show in Detroit, Mercedes-Benz premiered the new Mercedes-Benz SLC. The press release from Mercedes-Benz when the SLC was first announced stated, "A feature that continues to be unique to the SLC is the panoramic vario-roof with Magic Sky Control – this glass roof is lightened or darkened at the touch of a button. This means that it provides an open-air feeling at any time, but when required gives welcome shade under a hot sun." The Magic Sky Control feature, using Research Frontiers SPD-SmartGlass technology, is a carry-over from the SLC's predecessor model, the SLK roadster.

McLaren was the second auto manufacturer to adopt the Company's SPD-SmartGlass technology for series production in the automotive market. The following new production cars by McLaren Automotive featured SPD-SmartGlass technology in their roofs: the McLaren GT, McLaren 720S Spyder and McLaren Speedtail (which also incorporated SPD-SmartGlass technology in the windshield as a built-in sun visor and also other areas of the car). The McLaren GT and 720S Spyder have been in production for several years, and the McLaren Speedtail was first delivered to customers in January 2020. Since then, McLaren has included SPD-SmartGlass in additional production models including the new McLaren 750S and McLaren Artura.

General Motors was the third auto manufacturer to announce that it was putting SPD-SmartGlass into series production in the roof of their new electric ultra-luxury flagship vehicle, the Cadillac Celestiq. The SPD-SmartGlass sunroof for the Celestiq gives occupants control over individual segments of the sunroof above them to better customize and enhance the driving experience in terms of comfort, security, and the reduction of heat, light and glare into the vehicle. The Celestiq with its SPD-SmartGlass roof was launched at CES 2021 in January 2021.

In 2024, Ferrari introduced and delivered to customers an all glass SPD-SmartGlass roof using Research Frontiers' technology as an option in its new Purosangue.

Also in terms of new product development in the automotive industry, in August 2020, Daimay, the world's largest supplier of automotive sun visors, licensed Research Frontiers' SPD-Smart light-control film technology for use in automotive sun visors. SPD-Smart light-control film technology will enable Daimay to develop products that automatically and dynamically adjust the sun visor to manage changing light and glare conditions. Daimay is developing this product in conjunction with a specific automotive manufacturer customer.

In the Asian automotive market, in April 2020, Gauzy Ltd. announced that it secured Series C investments from Hyundai Motor Company, Blue Red Partners VC, and Avery Dennison. This strategic investment marks the first known equity investment by an automotive OEM in Research Frontiers' entire industry. As part of the announcement of this investment, Gauzy confirmed that its state-of-the-art material synthesis facility in Israel, and its custom SPD production line strategically located in Germany, are currently operating and producing SPD emulsion and light control film for the automotive, aircraft, and architectural industries.

In January 2024, at the CES show in Las Vegas, Gauzy debuted an SPD-SmartGlass side window for the Mercedes S-Class.

In January 2023, Research Frontiers, Gauzy Ltd. and their customers showed over 115 thousand attendees at the CES new ways to benefit from SPD-SmartGlass, at the prestigious automotive West Hall of the Las Vegas Convention Center. Exhibits included cutting edge LCG® (Light Control Glass) smart glass in applications for passenger vehicles, aircraft and trains, as well as Advanced Driver Assistance Systems (ADAS) / Camera Monitoring Systems (CMS) for long-body on-road vehicles. Innovative new products co-developed with industry-leading automotive and technology Tier 1 original equipment manufacturers (OEMs), such as BOS, LG Display, OSG, and Continental, made their North American debut in Gauzy's booth to demonstrate how Gauzy delivers solutions to help OEMs achieve their goals. CES was not held in person in 2021 due to concerns about the global pandemic. In January 2022 Gauzy exhibited in the Smart City pavilion at CES various commercial applications for SPD-Smart film produced by Gauzy including electronically dimmable aircraft windows, dual-zone panoramic sunroofs, smart projection systems, and information displays that combine transparent OLED and SPD technology to turn windows into high definition information or entertainment displays that can operate in bright environments and instantly and automatically adjust to changing light conditions to produce a vibrant high-contrast display.

In January 2023, Oliver Zipse, Chairman of the Board of Management and CEO of BMW AG, delivered the opening automotive keynote address at the CES. During the address, BMW revealed the i VISION Dee vehicle to showcase how the future of mobility can merge the real and virtual worlds. An integral part of how this was done uses a sophisticated head-up display system utilizing SPD-SmartGlass in the windshield of the car. The full side and rear glass of the i VISION Dee also uses SPD-SmartGlass to enhance the passenger experience and the integration of real and virtual environments. BMW's implementation of Gauzy and Research Frontiers technology makes this the first vehicle to showcase the full extent that smart glass can be utilized in a passenger vehicle for shading, privacy, and transparent displays, with smart glass being used in all the windows on the front, rear and sides of the vehicle.

In June 2022, Research Frontiers announced: "Cool and Coming Soon: Research Frontiers SPD-SmartGlass Technology in Cadillac CELESTIQ Electric Vehicle." CELESTIQ's full-glass roof is expected to be one of the first to feature a large four-quadrant panel of SPD-SmartGlass. Using Research Frontiers' patented SPD-Smart light-control technology, each occupant of the vehicle can set their own level of roof transparency. The driver and front-seat passenger will enjoy a pillar-to-pillar freeform display with active privacy to help mitigate driver distraction, while rear-seat passengers have personalized entertainment screens. Console screens between seats in the front and back will separate individualized comfort settings from entertainment displays to minimize distractions. The Cadillac CELESTIQ will be built on GM's Ultium Platform, the heart of the company's EV strategy. The CELESTIQ will be the first production vehicle to be built at GM's Global Technical Center.

In September 2021, Research Frontiers licensee Gauzy Ltd. and their customers showed at the Munich Auto Show (AIA 2021) SPD-SmartGlass, including two new products using SPD light control technology: in collaboration with LG Display, a unique automotive information displays with improved readability and performance, and a SPD-SmartGlass headlight by BMW for its BMWi Vision Circular Showcar. This vehicle utilized SPD-Smart light-control film that is laminated into automotive thin glazed curved glass. As the all-electric car starts, the SPD glass in the dynamic shading headlights switches from dark to transparent, revealing headlights that illuminate surroundings. Gauzy also presented an SPD sunroof with and without invisible segmentation.

Other automakers continue to develop and evaluate the use of SPD technology in their windows systems. Such window systems include sunroofs, side-windows, rear-windows and sun visors. Some automakers and their suppliers have incorporated SPD-SmartGlass in concept vehicles, with some of these concept vehicles being exhibited at major auto shows:

- March 2019:

  At the 2019 Geneva Auto Show, Mercedes-Benz SLC roadster, SL roadster, S-Class Sedan and Maybach vehicles in serial production were presented using the Company's SPD-SmartGlass technology.

- January 2019:

  At least four different companies showcased SPD-Smart products at CES 2019 in the automotive and consumer electronics industries.

- November 2018:

  Two concept electric vehicles debuted at the 2018 Los Angeles Auto Show featured SPD-SmartGlass and were also showcased at various automotive and other major industry trade shows during 2019 and early 2020. These two vehicles are scheduled to be in production in 2020.

  At various trade shows beginning with electronics 2018 in Munich in November, Texas Instruments demonstrated a control unit reference design (TIDA-020013) created to more intelligently and efficiently power SPD-SmartGlass electronically dimmable glass using a standard 12-volt automotive battery. The interactive demonstration is paired with gesture control to lighten or tint glass with the SPD-SmartGlass technology.

  The SPD-SmartGlass sunroof application gives occupants more control over the lighting in their car, removes unwanted heat, light and glare, and increases the driving range of electric vehicles. It also miniaturizes the electronics package and reduces the cost of the entire system to the auto maker, while also improving power efficiency. Engineers can use the TI reference design to accelerate their own designs using electronically dimmable glass. The design includes TI's highly efficient power management circuits and a 32-bit C2000™ real-time MCU to help generate the necessary signal to drive and control substantial surface areas.

- January 2018:

  A number of different companies showcased SPD-Smart products at CES 2018. In the automotive industry, Fisker debuted its new Fisker E-Motion with a unique and innovative four-segment SPD SmartGlass roof. In addition to use in its large curved panoramic roof, Fisker says that it plans to offer SPD-SmartGlass technology on the side windows of this new electric vehicle.

  Continental Corporation ("Continental") also showcased its Intelligent Glass Control system using SPD technology at CES 2018 to demonstrate how it makes cars safer, more private and comfortable, lighter and more energy-efficient.

- January 2017:

  Corning introduced a concept car that features an SPD-SmartGlass panoramic roof and rear glass at the 2017 Consumer Electronics Show. This large roof and curved rear glass is made using SPD-SmartGlass light-control film laminated between Corning's Gorilla® Glass, a special chemically-strengthened thin and lightweight glass.

  At the 2017 Consumer Electronics Show, Continental Corporation ("Continental") showcased an advanced version of its SPD-equipped vehicle that it originally showcased at the 2016 Consumer Electronics Show. This vehicle has enhanced and more sophisticated electronics, Continental indicated that its Intelligent Glass Control system increases passenger comfort and lowers CO2 emissions by keeping the interior of the vehicle cooler. As a result, smaller, more efficient and lighter air conditioning units could be used. Calculations showed a reduction in CO2 emissions of four grams per kilometer. Continental also estimates that its Intelligent Glass Control system can increase the driving range of electric vehicles by 5.5%.

- January 2016:

  Continental Corporation showcased its “Intelligent Glass Control” system on a demonstration vehicle at a special event at the Consumer Electronics Show (CES) in Las Vegas. This vehicle, a Ford Mondeo station wagon, used SPD-SmartGlass technology to enable the glass in all 11 side and rear windows and in the top sun visor portion of the windshield to change its transparency and darken instantly through electric control signals.

- March 2015:

  The Lincoln Motor Company, the luxury automotive brand of the Ford Motor Company, introduced the Lincoln Continental Concept car using an SPD-SmartGlass electronically tinting sunroof. This Lincoln Continental Concept car featuring SPD-SmartGlass also made its Asian debut at Auto Shanghai in April 2015.

- September 2012:

  BMW debuted at the Paris Motor Show its new BMW Concept Active Tourer. This vehicle’s entire composite glass roof uses patented SPD-SmartGlass technology.

- March 2012:

  Mercedes-Benz debuted at the Geneva International Motor Show its public evaluation of the Limited Edition Viano Pearl. This vehicle displays the capabilities and conceptual use of SPD-SmartGlass on the side glass of vehicles from Mercedes-Benz.

- December 2011:

  Toyota debuted its FS Hybrid Concept at the 2011 Tokyo Motor Show in Tokyo, Japan. The FS Hybrid Concept demonstrated the use of SPD-Smart™ technology inside glass.

- September 2011:

  Audi debuted its A2 concept car at the Frankfurt International Auto Show in Frankfurt, Germany. The A2 is an electric-powered passenger car equipped with a large SPD-Smart™ panoramic glass roof.

3. Automotive Aftermarket:

While the highest volume market for which SPD-Smart technology is being developed is new car production by the world’s automakers, the aftermarket upgrade market also presents opportunities in the automotive market. Research Frontiers licensee American Glass Products (AGP) is offering its Vario Plus Sky SPD-SmartGlass to the automotive aftermarket as well as to the automotive OEM market for serial production. In March of 2013, Research Frontiers announced that it had added two new licensees, Tint-It JSC and Advnanotech, both of whom are targeting the automotive aftermarket in Russia. In May of 2017, Hanamac International Ltd. acquired a license from Research Frontiers to produce and sell SPD-SmartGlass automotive windows for the South Korean aftermarket.

In August 2019, Research Frontiers licensed São Paulo, Brazil based SER Company to make SPD-SmartGlass primarily for the automotive armored glass aftermarket in Brazil. SER Company is a Brazilian leader in the development of technologies and solutions for ballistic cars in the protection and security sector.

4. Recreational Vehicles//Motor Homes/Buses and Motorcoaches:

Most motorcoach windows use heavily tinted windows to manage excessive light, glare or heat. While this reduces somewhat the time the shade has to be down, it remains ineffective for many conditions. Also, it limits passengers’ experience of views during dusk, nighttime and dawn hours. This is due to the fact that when outside light levels are low, a heavily tinted window blocks or degrades elements of the scene outside. During these hours, the high optical clarity of SPD-SmartGlass in the “clear” state eliminates this problem.

Features of SPD-SmartGlass electronically dimmable windows ("EDWs") for motorcoaches include:

- Different zones of an EDW can be independently controlled.
- All EDWs can be controlled centrally with a master control, or automatically with light sensors.
- The level of noise in the motorcoach is reduced.
- The EDWs automatically turn to the darkest state when the motorcoach engine is off, keeping the interior cooler and offering lower air-conditioning consumption and greater energy savings.
- An ergonomic SPD-Smart dimmable motorcoach sun visor increases safety.
- The electronics are integrated into the EDW, which facilitates OEM and aftermarket installations.

- October 2022:

  At the NBAA trade show, Vision Systems discussed their SPD-SmartGlass contracts for transportation vehicles, which includes three recreational vehicle contracts.

- January 2020:

  Vision Systems exhibited its SPD-SmartGlass technology for the coach marketplace at the UMA Motorcoach Expo in Nashville, TN. Vision Systems showcased an EDW with integrated information display that provides travel information such as time, temperature, remaining distance to the next stop, or service availability. Also at the show, Vision Systems' unveiled an SPD-SmartGlass solution for the driver environment with an ergonomic SPD-Smart dimmable sun visor integrated into the upper part of the windshield, avoiding the need for the driver to handle a shade, which partially blocks the view.

- January 2019:

  Vision Systems also exhibited its SPD-SmartGlass technology solutions for the coach marketplace at the UMA Motorcoach Expo.

- May 2017:

  At Caravan Salon in Dusseldorf, Germany, premium recreational vehicle supplier Lippert Components, and Knaus, a leading manufacturer of leisure vehicles in Europe, both featured the world premiere of dimmable windows using SPD-SmartGlass technology. These electronically dimmable smart windows, which dramatically improve the recreational vehicle passenger experience, were supplied by Vision Systems, a licensee of Research Frontiers.

- September 2014:

  Global Caravan Technologies, Inc. unveiled the CR-1 Carbon which features the MagicView™ roof and MagicView™ windshield with SPD-SmartGlass. This special glass, which totals 28 square feet, was jointly developed with Research Frontiers' licensee Vision Systems. SPD nanotechnology on this vehicle allows infinitely variable control of privacy between blackout and clear and can be controlled by any smart-phone or other smart-devices. In addition to controlling the level of light and glare coming into the RV, the MagicView™ SPD-SmartGlass on RVs offers many other advantages. This technology provides unsurpassed thermal insulation: SPD-SmartGlass substantially rejects solar heat from entering RVs through windows. The SPD-SmartGlass achieves its maximum dark state when the RV is parked/turned off and no power is consumed.

- January 2012:

  Vision Systems announced that Notin, manufacturer of motorhomes and campers, selected Visions Systems' Nuance brand of SPD-SmartGlass for the skylight of Notin's Angara luxury motorhome. In October 2013 at Busworld 2013, Vision Systems showcased a new sun visor using SPD-Smart light-control film technology and a light sensor to automatically and dynamically adjust the sun visor to deal with changing light and glare conditions. Vision Systems indicated that it has been working for almost two years with a major automotive OEM to test the ease of installation, reliability, design and performance of its new sun visor in real world conditions. It further indicated that customer reaction regarding the effectiveness and ease of use of this product has been excellent. The fact that this feature can be installed in the aftermarket should bring these benefits to a wider range of drivers.

5. *Rail Transport:*

- January 2023:

  Prior to the CES trade show, Gauzy announced that their newest railway customer, Talgo, a leading Spain-based train OEM, will debut in the North American market an IGU (insulated glass unit) smart glass passenger window designed and built by Gauzy and Star Glass. With multi-zone technology and capacitive touch on glass controls, these SPD-SmartGlass windows set a new standard for passenger personalization and comfort in railway travel, and position Talgo as an early adopter of innovative solutions.

- October 2022:

  At the NBAA trade show, Vision Systems discussed their SPD-SmartGlass contracts for transportation vehicles, which includes three railway contracts.

- September 2022:

  - At the InnoTrans trade show, Gauzy showcased its SPD T-OLED in cooperation with LG Display, the world's industry-leading manufacturer of Transparent OLED, in a railway compliant Insulated Glass Unit (IGU). These use LG Display's state-of-the-art 55" Transparent OLED display with Gauzy SPD for high contrast and vibrant advertising and messaging in shifting lighting conditions when SPD is tinted, or a transparent window when SPD is on (clear mode).

  - Also at InnoTrans, Gauzy showed the platinum concept, which Gauzy created for Talgo, the Spain-based railway OEM. They demonstrated a segmented SPD railway compliant IGU which allows passengers to instantly dim entire windows or specific areas for precise shading that increases visual and thermal comfort.

  - Also at InnoTrans, Rehau, in collaboration with Gauzy and Research Frontiers, presented as part of the major Deutsche Bahn (DB) "Ideas Train" exhibition. This is an SPD-SmartGlass window system for trains, enabling continuously variable shading of carriage windows. This DB innovation project demonstrates how continuously variable shading using SPD-SmartGlass technology can raise comfort and sustainability to a new level in the trains of the future.

- February 2020

  In February 2020, Vision Systems presented its SPD-SmartGlass marine products at the Middle East Rail show in Dubai, UAE, including a multi-zone SPD-SmartGlass dimmable window, and a dimmable divider with an integrated information display, and a concept of glass partition playing videos. The multi-zone solution exhibited is an SPD-SmartGlass panel that resembles a digital shade, providing tinting control of a chosen zone to protect from unwanted light and glare, for improving the passenger experience. Vision Systems also exhibited an SPD-SmartGlass dimmable divider with an integrated information display that gives travel information such as time, temperature, remaining distance to next stop, or service availability.

- September 2018

  Innotrans, the leading international trade fair for transport technology, was the stage for the world premiere of new EDW solutions using SPD-SmartGlass technology. AGC and Vision Systems launched their respective latest generations of SPD-SmartGlass EDWs for the rail industry. In addition, Continental also new electronic control products for SPD-SmartGlass EDWs at the show.

Vision Systems at InnoTrans

Some of the products using SPD-SmartGlass for the train industry being showcased this week in Berlin include:

- EDWs with integrated control system electronics (on the passenger window EDW itself), for rapid installation in both new train car production, and retrofitting existing train cars.

- SPD-SmartGlass solutions for the driver cabin, to eliminate glare on the dashboard with side and back window EDWs, and/or SPD sun visors integrated into the windshield.

- "Info-Vision" window, which integrates an electroluminescent display into SPD-SmartGlass windows. This combines the benefits of the EDW with information available directly on the window, such as time to destination, remaining distance, temperature, service options, and train schedules.

In addition to the above information, Vision Systems confirmed at Innotrans that it was working on other high-volume train projects with major commuter train manufacturers and operators.

AGC at InnoTrans

AGC, a leading Tier 1 supplier of transparencies to the rail industry for over 50 years, is also prominently featuring SPD-SmartGlass EDWs. In a recent article entitled AGC at Innotrans with smart glass for transportation, it was noted, "AGC's booth will feature AGC's smart glasses for transportation… Wonderlite light control glazing, that switches from clear to dark at the simple touch of a button." Wonderlite is AGC's brand name for its SPD-SmartGlass EDWs.

Global Rail News published an article about Continental at Innotrans, noting, "The level of transparency… of the glass can be adjusted via a control system, which can be programmed to respond to external conditions, such as sensor data on sunlight intensity."

Continental at InnoTrans

Continental unveiled a number of new innovations, including an intelligent technology for darkening glass panes and a range of individual surface designs. The 'Intelligent Glass Control' (IGC) system by Continental provides passengers with the flexibility to adjust the amount of light and the color of their window or other glazed areas to suit their needs. The technology, which was originally developed for the automotive industry, relies on a film sandwiched between two panes of glass and connected to an electronic control unit (ECU).

- September 2017:

Vision Systems announced to the press in September 2017 that it had just signed a contract to supply SPD-Smart Nuance windows for a new proposed special Shinkansen bullet train which will be put in service for the 2020 Tokyo Olympics.

- May 2017:

AGC Asahi Glass announced its light control glass, WONDERLITETM, was adopted for JR East luxury sleeper train, Train Suite Shiki-shima ("Shiki-shima"), which began service on May 1. JR East's luxury sleeper train Shiki-shima, conceptualized as a train for 'enjoying changes in time and space', has been designed with individualized themes for each compartment. Of particular note, the front carriage, containing a special area for enjoying panoramic views of Japan's landscape, has been outfitted with WONDERLITETM light control glass, which makes it possible to adjust passing sunlight simply with a switch.

- September 2016:

  Vision Systems, with its customers/strategic partners, exhibited many different types of SPD-Smart products at InnoTrans 2016. Products included:

  (a) A full-scale train cabin mockup equipped with many SPD-Smart passenger windows

  (b) SPD-Smart windows with integrated transparent information displays

  (c) SPD-Smart contrast enhancement filters for displays

  (d) SPD-Smart windows with multi-zone switching capabilities

  (e) Train passenger SPD-Smart windows

  (f) Aftermarket driver cabin SPD-Smart windows

- September 2014:

  In September 2014, Poma (a leading supplier of cable transport systems) showcased at Innotrans 2014 its Cabine H2 cable car. The windows in this cable transport vehicle used Research Frontiers licensee Vision Systems' "Nuance" SPD solution. Innotrans 2014 is the largest international trade fair for rail transport technology with over 160,000 visitors and is held every two years in Berlin, Germany. At this fair, Bombardier featured its "FLEXITY 2" tram platform using an electronically dimmable window produced by Vision Systems. In addition, AGC, one of the largest producers of flat glass in the world, featured its "WONDERLITE" SPD-SmartGlass train window.

6. Automotive Armored Glass Market:

Within the automotive market, a potentially additional sector is the armored glass market. Armored glass (sometimes referred to as "transparent armor" and "bullet-resistant glass") encompasses the military, non-military government, and civilian markets. In addition, SPD-Smart technology in this market not only provides the benefits of light-control and UV blockage, it also enhances security by introducing darker tints and privacy. A number of the Company's licensees including American Glass Products, Isoclima, and SER are recognized industry leaders in the armored glass market.

In August 2019, Research Frontiers licensed São Paulo, Brazil based SER Company to make SPD-SmartGlass primarily for the automotive armored glass aftermarket in Brazil. SER Company is a Brazilian leader in the development of technologies and solutions for ballistic cars in the protection and security sector.

7. SPD-Smart Aircraft Products:

Multiple aircraft manufacturers and their selected interiors installers have announced that they have selected SPD-Smart dimmable window products as standard or optional equipment for their production aircraft:

- Honda Aircraft Company:

  The HondaJet, with first delivery in December 2015, comes with SPD-Smart electronically dimmable windows as standard equipment on all passenger windows.

- Textron-Beechcraft has SPD-Smart electronically dimmable windows as standard equipment on models of its King Air aircraft:

  - The King Air 250, with first delivery during 2015
  - The King Air 350i, with first delivery during 2015
  - The King Air C90GTx, with first deliveries during the first quarter of 2016

- ONE Aviation announced the selection of SPD-Smart electronically dimmable windows for its Eclipse 700 platform, production of which is now discontinued.

- Epic Aircraft's E1000, with first delivery in February 2020, comes with SPD-Smart electronically dimmable windows as standard equipment on all passenger windows.

  Airbus' ACJ TwoTwenty, the A220 platform for private aircraft, will come with SPD-Smart windows. Airbus, as well as their selected completion center Comlux, feature the EDWs in promotional materials. Airbus shipped the first ACJ TwoTwenty to Comlux in January 2022, for the installation of the interior.

  In October 2022, Daher showcased its TBM 960 aircraft at the NBAA show, which had SPD EDWs. The TBM 960 comes with SPD EDWs as standard equipment, which a Vision Systems partner publicly confirmed in February of 2023.

- Dassault Aviation:

  The Falcon 5X was scheduled to come with SPD-Smart electronically dimmable skylights as standard equipment. Subsequently, however, Dassault announced in December 2017 that it was terminating the Falcon 5X program and announced the launch of a new Falcon program featuring the same skylight as the Falcon 5X. This aircraft, the Falcon 6X is scheduled to enter into service in 2023.

In January of 2024, Gauzy's Vision Systems disclosed their aerospace contracts with OEM and Tier-1 suppliers using SPD-SmartGlass technology. Gauzy has secured 20 contracts covering a range of aircraft from small to midsize business aircraft like the HondaJet HA-420 and Daher TBM 960, to larger business aircraft including two Airbus ACJ models, various helicopters such as the Airbus Helicopters ACH175, and commercial aircraft, including a Boeing model.

Other aircraft manufacturers and their suppliers continue to develop and evaluate the use of SPD technology in their window systems. Aircraft manufacturers and SPD product suppliers have incorporated SPD-Smart electronically dimmable windows in mockups, with some of these mockups being exhibited at major aviation shows:

- February 2023:

  Vision Systems partner Verre Industrie published a news item promoting Vision Systems SPD EDW as standard equipment contract for the Daher TBM 960 aircraft. They noted, "Our partner Vision Systems has entrusted us with the manufacture of several hundred thin glasses X-Lite for dimmable windows to be fitted in series in Daher TBM 960 aircraft. This success rewards the joint efforts of recent years including the creation several prototypes before the launch in production."

- October 2022:

  At the NBAA aircraft show, Vision Systems discussed their SPD-SmartGlass contracts for transportation vehicles, which includes five helicopter contracts, eleven aircraft contracts, and one airline retrofit contract.

- June 2022:

  At the 2022 Aircraft Interiors Expo, Vision Systems unveiled an "ambiance management system" for commercial and private aircraft. This system delivers the ideal atmosphere for each passenger with SPD electronically dimmable windows (EDWs), mood lighting, and large triple-window shades – and all elements of the system can be synchronized to provide an unparalleled passenger experience. Also at this show, Vision Systems unveiled new SPD EDW innovations, for first class and business class passengers on commercial airlines. This included a smart glass partition showing messages, images or videos such as traveling information or advertising. When nothing is displayed, this divider can remain transparent, or opaque (white or dark) to offer privacy between classes.

- April 2022:

  At the Sun ‘n Fun Expo in Florida, OEM Daher showed its TBM 960, which features EDWs. Aircraft EDWs using SPD technology instantly and precisely control the amount of light, glare and heat in the cabin.

- October 2020:

  Airbus launched the ACJ TwoTwenty business jet, a clean-sheet design aircraft based on Airbus’ A220-100, featuring advanced materials and state-of-the-art technologies that include electronically dimmable windows.

- November 2019:

  Vision Systems unveiled its aircraft and helicopter SPD-Smart solutions at the Dubai Airshow in Dubai, UAE. Among the products presented at the show were an SPD-Smart electronically dimmable helicopter window, and a multizone SPD-Smart dimmable aircraft window with an integrated control panel. Vision Systems also unveiled an SPD-Smart partition combining an electronically dimmable system with an information display based on electroluminescent technology. Whether on windows or dividers, this solution can either be set in transparent or dark mode when no information is displayed, or show short travel information. The background opacity can then adjust automatically for perfect contrast and readability.

- April 2019:

  Vision Systems presented its SPD-Smart EDWs at the Aircraft Interiors Expo (AIX) in Hamburg, Germany. Its system delivers important passenger experience benefits including a cooler and quieter cabin due to remarkable thermal and acoustic insulation. The following chart summarizes some of the performance advantages highlighted at the show that Vision Systems’ SPD-Smart EDWs have over electrochromic EDWs:

	SPD-Smart EDW	**Electrochromic EDW**
Switching Speed	0.5 – 3 Seconds	Minutes
Uniform Tinting	Yes	No
Heat-Blocking When Aircraft on Ramp and Unpowered	Extremely High: Switches to Darkest State	Poor – Moderate: Switches to Clearest State
Noise Blocking	Extremely High	Poor – Moderate
Multizone Tinting	Yes	No
Replaces Dust Pane	Yes	No
Integrated Electronics	Yes	No
Ability to Include PDLC Film For Additional Blackout and Privacy	Yes	No
Integrated Information Display	Yes	No
Integrated Touch Panel	Yes	No

- October 2018:

  Vision Systems presented its second-generation SPD-Smart EDWs, branded Nuance V2, with enhanced optics and a lower cost at the NBAA business aviation show. The solutions on display at Vision Systems' NBAA included:

  - Multizone: This Nuance V2 solution allows independent control of light and glare through different "zones" of an SPD-Smart EDW, to any level of tint.

  - Variable light control with diffused light / privacy control: This SPD-Smart solution enables instant and precise dimming from clear to very dark, plus an opaque white or dark feature for privacy and enjoying soft, diffused daylight through the EDW.

  - Interactive: Vision System's Info-Vision is the first smart information window integrating SPD-Smart and electroluminescent technologies. This economical innovation, for use in windows and cabin dividers, provides passengers with travel and other information right on the window. The tint of the Info-Vision EDW can automatically adjust in real-time, providing optimal contrast and readability.

  - Cabin Divider: The Nuance V2 cabin divider enables adjustable levels of privacy between classes and allows flight attendants the ability to view multiple cabins whenever needed.

- April 2018:

  Fokker Services, in partnership with InspecTech Aero Service, featured their Element EDW brand of SPD-Smart EDWs at the AIX commercial aviation show in Hamburg, Germany:

  - An Airbus A320 mockup was demonstrated, which includes two Element EDWs integrated into a sidewall. The EDWs replace the inboard "scratch lens" (the surface closest to the passenger), resulting in benefits including improved optical clarity, and the perception of larger windows as the scratch lens panel has a larger surface area than the structural window.

  - Fokker showcased a Boeing 737 cabin mockup which includes Element EDWs.

- April 2018:

  At the AIX show in Hamburg, Vision Systems unveiled the world premiere of Vision System's Info-Vision, the first smart information window integrating both SPD-Smart and electroluminescent technologies. This economical innovation, for use in windows and cabin dividers, provides passengers with travel information right on the panel. The tint of the Info-Vision window or divider can automatically adjust in real-time, providing optimal contrast and readability. Other SPD-Smart EDW solutions from Vision Systems featured at AIX in Hamburg include:

  - Second-generation Nuance V2 and Nuance V2 Ultra-Dark: enhanced optics and lower cost.

  - Nuance Smart-Shell: a retrofit EDW product covering cockpit side windows.

  - Nuance Energia: a dimmable sun visor integrating a transparent photovoltaic film for self-power.

- October 2017:

  PPG Aerospace, in partnership with Vision Systems, launched a new product at the National Business Aviation Association Convention and Exhibition in Las Vegas, Nevada. Nuance V2 Ultra Clear is a new product responding to the industry requests for aircraft cabin shading systems that allow for brighter cabin interiors, while providing for more effective shading. This Electronically Dimmable Window (EDW) solution uses patented SPD-Smart light control technology developed by Research Frontiers.

- July 2017:

  ONE Aviation announced the selection of the ALTEOS EDW by PPG for its new Eclipse 700 aircraft. The Eclipse 700 aircraft is an upgraded version of its Eclipse 500/550. The Alteos EDW utilizes the NUANCE V2 shading product by Vision Systems that uses SPD-Smart light-control technology from Research Frontiers. As ONE Aviation stated in the announcement, "A priority at ONE Aviation is to maximize ease of use and passenger comfort. The PPG ALTEOS system provides both with simple and effective control of window shading."

- May 2017:

  Vision Systems and PPG Aerospace announced that they have reached a commercial agreement to work together on developing new applications utilizing Vision Systems' EDW shading solutions for aircraft. These solutions use Research Frontiers' SPD-Smart EDW technology and also combine the considerable experience that both PPG Aerospace and Vision Systems have in supplying the aircraft industry with EDW systems. As stated in their press release, "The agreement provides a framework for PPG and Vision Systems to pursue opportunities in commercial, regional, military and general aviation applications that capitalize on each company's expertise."

- October 2016:

  At the MRO Europe conference Fokker Services, a division of GKN Aerospace, launched "Element EDW," a new electronically dimmable window system for commercial airliners. Developed in collaboration with Research Frontiers licensee InspecTech Aero Service, this "smart transparency" controls and manages both beneficial and undesirable outside elements coming into aircraft cabins through passenger windows.

  Vision Systems exhibited SPD-Smart EDWs at Aircraft Interiors Expo Asia and at the National Business Aviation Association (NBAA) Business Aviation Convention & Exhibition. These products improve the airline passenger experience by controlling light, glare, heat and noise entering the cabin.

- May 2016:

  Easier SPD-Smart EDW control switches from InspecTech Aero Service were featured at the EBACE aircraft show on the newly redesigned King Air 350i and 250 that were on display by Textron-Beechcraft. Also, at EBACE it was reported that the King Air C90GTx (the third King Air to offer SPD-Smart EDWs as standard equipment) has received FAA certification, and Textron highlighted the improved EDWs on its newly redesigned aircraft as an important cabin enhancement.

  Vision Systems debuted an Acti-Vision interactive aircraft window at the EBACE aircraft show that not only dims but brings the passenger important information such as flight status, moving map, satellite imagery, and even tourist information about what the passenger is looking at out the window via a transparent video touchscreen built into the window.

- April 2016:

  Vision Systems introduced a solution for the light and glare issues commonly experienced in aircraft cockpits at the Aircraft Interiors Expo. Vision Systems' Nuance Smart Shell, using Research Frontiers SPD-Smart EDW technology, is designed for lateral cockpit windows, which account for a large percentage of light and glare entering cockpits, and are extremely difficult to shade. The Nuance Smart Shell EDW covers the entire window surface area and brings dynamic solar control to aircraft cockpits – providing automated management of intense high-altitude light and glare, and protection from harmful UV radiation.

- April 2015:

  Vision Systems demonstrated its Nuance Touchless SPD-Smart EDW at the 2015 Aircraft Interiors Expo in Hamburg, Germany. The new system allows passengers to use gestures, much like those used to operate a smart phone, to control the tint of their aircraft windows, but without ever having to touch the window or any other aircraft interior component.

  Isoclima showcased its CromaLite brand of SPD-Smart electronically dimmable windows at the Aircraft Interiors Expo in Hamburg, Germany.

- March 2015:

  Vision Systems unveiled its SPD-Smart Opti-Visor electronically dimmable sun visor for the aircraft market at the Helicopter Association International Heli-Expo in Orlando, Florida.

- December 2014:

  At the 2014 MEBA show in Dubai, U.A.E., Vision Systems unveiled a new generation of its Energia photovoltaic autonomous SPD-Smart dimmable window – the new product is capable of producing more energy than the prior generation.

- October 2014:

  Epic Aircraft featured SPD-Smart windows in the mock-up of its upcoming E1000 aircraft. The mock-up was unveiled at 2014 NBAA in Orlando, Florida.

- May 2014:

  At the 2014 EBACE show in Geneva, Switzerland, Vision Systems unveiled a new SPD-Smart dimmable window product that offers passengers the ability to independently control the tint of different "zones" within the same window. At the same show, Vision Systems announced an improvement in the optical performance of its Nuance SPD-Smart dimmable windows – a product offering wider amplitude between clear and dark.

- April 2014:

  BAE Systems featured SPD-Smart electronically dimmable windows in its cabin management system mock-up at the 2014 Hamburg Airshow. The windows can be controlled by the BAE system.

  Vaupell featured an SPD-Smart electronically dimmable window in its commercial airliner window assembly at the 2014 Hamburg Airshow.

- October 2013:

  At the 2013 AIX Americas show, Vision Systems' strategic partner Vaupell announced they are offering the industry a complete SPD-Smart light-control window system – Vision Systems' SPD-Smart Noctis window and control system, integrated with Vaupell's window assembly. This product offering was showcased at Vaupell's AIX Americas booth. Vision Systems and Vaupell entered into a strategic partnership to develop and offer SPD-Smart Noctis and Nuance windows to OEMs, including Vaupell's longstanding customer Boeing.

  At the 2013 NBAA, Vision Systems unveiled Energia – the world's first self-powered dimmable window for aircraft cabins. Energia adds the many practical, technical, and financial benefits of solar power to the instant switching speed, wide range of light transmission, and relief from light, glare and heat that SPD-Smart aircraft windows already provide. Energia operates without using the aircraft's electrical system because it integrates a transparent photovoltaic layer that is capable of producing its own energy – from the sun, or from artificial light sources. Energia facilitates the installation of dimmable windows on new production and aftermarket aircraft. It is completely independent of the cabin's wiring, and no modifications to the aircraft's existing electrical system are required. Energia was developed in collaboration with Sunpartner Technologies, Vision Systems partner and the inventor and manufacturer of the transparent photovoltaic panel. In March 2014, Vision Systems announced that Energia had been selected as a finalist in the prestigious 2014 Crystal Cabin Award.

- June 2013:

  At the Paris Air Show, Vision Systems announced it will open its first-ever U.S. SPD-SmartGlass factory, investing nearly $1.2 million in capital expenditures to serve customers with strong U.S. operations. The new factory was highlighted by Florida Governor Rick Scott and Vision Systems President and CEO Carl Putman, with Research Frontiers President and CEO Joseph M. Harary and others in attendance for this special announcement. This announcement of a further expansion to the United States indicates an acceleration of existing and projected business in North and South America where major aircraft OEMs and customers of Vision Systems are located, including HondaJet and Gulfstream.

- May 2013:

  Eurocopter featured SPD-Smart windows, and SPD-Smart cabin partitions, in the mock-up of its EC175 helicopter. The mock-up was unveiled at EBACE 2013 in Geneva, Switzerland.

- April 2013:

  Vision Systems debuted its new SPD-Smart window with integrated electronics and controls directly on the window at the 2013 Hamburg Air Show. Developed with strategic partner Vaupell, a world leader in the production of aircraft interior subassemblies for commercial aerospace applications, it became the first dimmable window with integrated electronics and control panel directly on the aesthetically attractive window reveal.

- October 2012:

  Honda Aircraft Company featured HondaJet SPD-Smart cabin windows at the 2012 National Business Aviation Association (NBAA) Annual Meeting & Convention. The HondaJet's passenger windows will use SPD technology as standard equipment. SPD-Smart Nuance windows for the HondaJet went into production at Vision Systems' new Melbourne, Florida factory.

  InspecTech announced enhancements to its electronics architecture used to control its iShade to enable the SPD-Smart electronically dimmable windows to switch to their clearest state in the event of a power loss – that was a request made by certain OEMs. InspecTech's iShades now offer "the best of both worlds" - when unpowered on the ramp, the windows automatically switch to their darkest, maximum heat-rejecting state, and when in the air, they instantly switch to the clear state in the event of a loss of power.

  InspecTech announced improvements to its iShadeiQ including a higher light transmission, greater contrast ratio, unprecedented optical clarity, superior acoustic and thermal insulation properties, and lighter weight.

- March 2012:

  At the 2012 Aircraft Interiors Expo in Hamburg, Germany, Isoclima S.p.A. announced that Isoclima's CromaLite brand of SPD-Smart aerospace windows made its world premiere. CromaLite is Isoclima's SPD-Smart solar control glazing product and enables users to efficiently control the transmitted solar radiation in both the visible and the solar range. Dr. Alberto Bertolini, Executive Director of Isoclima, commented: "Our CromaLite brand of SPD-Smart window offers many valuable light-control benefits: instant shading, glare control, UV rejection, the desire for passenger comfort, and keeping aircraft cool when they are on the ground. We are very excited by the reactions we have received from OEMs and cabin designers who are here at the Aircraft Interiors Expo and are excited about our growing portfolio of SPD-Smart CromaLite solutions for the transportation and architectural markets."

  Vision Systems announced that the company has invested over $750,000 to expand its existing factory in France to add a production facility dedicated to the manufacture of its SPD-Smart Nuance and Noctis aerospace and transportation windows and cabin dividers.

- November 2011:

  Bombardier Aerospace featured SPD-Smart aircraft windows in its CSeries aircraft cabin mock-up at the 2011 Dubai Airshow, equipping the business class windows in its mock-up with SPD-Smart aerospace windows.

  Vision Systems exhibited its Nuance and Noctis brands of SPD-Smart aircraft cabin windows at the Dubai Airshow in Dubai, United Arab Emirates. Nuance and Noctis SPD-Smart aerospace windows offer instant and precise light-control at every level which provides OEMs and private aircraft owners a solar protection solution that enhances flying comfort and supports fuel efficiency. These electronically dimmable aircraft and helicopter window shades and cabin dividers are impact-resistant, completely silent, available in flat and curved surfaces, and can be controlled by the cabin management system or by passengers. Vision Systems' Noctis SPD-Smart product line offers enhanced blackout solar protection and complete privacy. Also, at the November 2011 Dubai Airshow, Vision Systems announced that Bombardier Aerospace was featuring Vision Systems' SPD-Smart aircraft windows in Bombardier's CSeries aircraft cabin mock-up. Bombardier equipped the business class windows in its mock-up with Vision Systems' SPD-Smart Noctis aerospace windows. Developed for the 100- to 149-seat market segment, the CSeries family of aircraft is Bombardier's all new mainline transport solution.

- April 2011:

  InspecTech announced a new model of its SPD-Smart iShade window, branded iShadeiQ. This model, in addition to the light, glare and heat control, also reduces noise levels in the cabin.

Key performance requirements for aircraft light-control windows:

- Level of darkness:

  Solar radiation onboard aircraft is extreme and requires a dimmable window that creates an environment dark enough for passengers to sleep, even during daylight hours. Research Frontiers licensees now offer SPD-Smart windows that can be set to block over 99.96% of incoming light, to meet the needs of OEMs and their customers.

- Switching speed:

  Whenever a passenger wants relief from glare, SPD-Smart aircraft windows offer immediate response. Due to instant switching, an infinite number of light-transmission states can be selected by the passenger or flight crew, from clear to blackout, and any level of view-preserving tint in between.

- Heat-blocking:

  Aircraft cabins can become hot when the aircraft is parked because of solar heat streaming through windows. The result is an uncomfortably warm cabin upon boarding or the need to use jet fuel or auxiliary power units before boarding to cool down the cabin. SPD-Smart aircraft windows automatically switch to their maximum heat-blocking state, even when the aircraft is parked unpowered, and the cabin remains cool.

Additional challenges stated by OEMs and their customers that have been successfully met by SPD-Smart dimmable aircraft windows include:

- Noise-blocking: the ability to reduce the amount of noise transmitted through windows
- Curved shapes: the ability to offer curved windows to meet interior design needs
- Weight-reduction: the ability to fabricate dimmable windows using lightweight plastics and thin chemically strengthened glass
- FAA and EASA certification: the ability to demonstrate full compliance with all FAA and EASA requirements

8. SPD-Smart Architectural Products:

Research Frontiers and its licensees are currently working with multiple architectural customers to introduce SPD-Smart products including windows, skylights, partitions and doors. The architectural markets for these products are highly fragmented and in general have a high sensitivity to price. In the near term, the Company expects SPD-SmartGlass products primarily will be commercialized in specialty applications and/or sectors that value its distinctive performance attributes including fast switching speed regardless of window size, a very wide range of visible light transmission, infinite light-control between its dark and clear states, and availability in unusual shapes and sizes. Research Frontiers' end-product licensees in this sector include industry leaders such as: American Glass Products (AGP), Asahi Glass, CricursaCristalesCurvados, Gauzy, Glatic, Innovative Glass, Isoclima, LTI SmartGlass, NSG UMU Products Co., Ltd Prelco, Isoclima, Smartglass International and Traco (a business unit of Alcoa).

In December 2019, Research Frontiers licensed Seoul, South Korea based Glatic Co., Ltd. to produce and sell SPD-SmartGlass smart windows for the South Korean architectural market.

In January 2017, Research Frontiers and NSG UMU Products Co., Ltd. announced that UMU Products has acquired a license from Research Frontiers to produce and sell SPD-SmartGlass architectural intelligent products throughout the United States, Canada, Mexico, Japan, the People's Republic of China and Taiwan. The non-exclusive license grants UMU Products, a subsidiary of world-leading glass manufacturer Nippon Sheet Glass, the right to manufacture and sell SPD-SmartGlass products including windows, doors, solar shading screens, curtainwalls, skylights and other intelligent smart glass architectural products.

In September 2016, Smartglass International announced that its Solar SmartGlass brand of SPD-SmartGlass has been selected for both new construction and retrofit projects. An example of a retrofit project is the University of Edinburgh's historic McEwan Hall. The interior of this hall, built in 1897, is being refurbished. In an article on the Smartglass International website, the company indicates that its Solar SmartGlass "…will be retrofitted to the internal building walls to protect the beautiful paintings and features for many more years to come. The glass will increase the functionality of the space by allowing instant control over the amount of light entering the hall. Smartglass International will create bespoke solar switchable panels that will be fitted inside each of the 13 circular oculi, each more than 2 meters in diameter."

At its annual stockholders meeting in June 2015, Research Frontiers announced a small strategic investment in Zuli Inc. a manufacturer of smartplugs. At this meeting, Joseph Harary demonstrated how the ZuliSmartplug integrates with SPD SmartGlass products. Mr. Harary indicated that "Using a ZuliSmartplug, you can walk into a room with your smartphone, and have the lights automatically turn on, temperature adjust, and the glass in your windows instantly go from an energy-saving dark tint, to clear so you can see the magnificent views outside your home. Now, walk into another room and have those lights and windows adjust too, while the ZuliSmartplug automatically shuts off your devices in the room you left to save energy."

In March 2015, Research Frontiers' patented SPD-SmartGlass technology was selected as the exclusive smart glass for the USA Pavilion at this year's World's Fair, Expo Milano 2015 from May through October 2015. The USA Pavilion 312 large panels of SPD-SmartGlass manufactured under license from Research Frontiers by Isoclima S.p.A. Each panel measures approximately 1 meter by 3 meters, making the total surface area in the roof more than 10,000 square feet. This is the largest known installation of smart glass in the world for a roof application and was seen by over six million people.

SPD-Smart windows, skylights, doors and partitions offer various benefits in architectural applications. During 2009, independent tests were conducted by DSET Laboratories, a division of Atlas Material Testing Technology, in accordance with ASTM and ASHRAE testing and calculation protocols. These test results demonstrate that SPD-Smart windows have excellent solar heat rejection and control capabilities. In January 2011, a study published by the Department of Engineering at the University of Cambridge concluded that SPD-Smart light-control windows are exceptionally energy efficient, reducing solar heat gain by as much as 90%. The Cambridge study indicated that the real-world testing "confirms theoretical predictions that SPD glass holds great energy saving potential and is a technology that can really help to reduce energy wastage of glass facades." In addition to SPD-Smart technology, the Cambridge study discussed alternative dynamic glazing technologies that could be used in windows (e.g., electrochromics) and reported that SPD-Smart technology did not have the disadvantages that limited the potential of these alternative technologies. For example, the study cited that an electrochromic window that is 2.4 square meters can take up to 30 minutes to change from clear to dark.

In November 2011, Research Frontiers' licensee Innovative Glass Corporation was awarded two 2010 Crystal Achievement Awards for its smart window product line using our SPD-Smart light-control technology. In October 2010, its SPD-SmartGlass product was awarded WFX's (Worship Facilities Conference & Expo) New Product award for Best Building System Material Product/Window. Innovative Glass has completed or is working on a variety of SPD-SmartGlass projects in the commercial, residential and institutional markets. Innovative Glass also periodically exhibits its SPD-SmartGlass architectural products at Glass Expo Northeast in Hauppauge, New York. Glass Expo Northeast is the region's largest conference and trade show dedicated to the architectural glass and metal industry.

Research Frontiers licensee SmartGlass International has announced completion of several high visibility SPD-SmartGlass installations. During February 2012, the company announced installation of SPD-SmartGlass at CERN, the European Organization for Nuclear Research, which is one of the world's largest and most respected centers for scientific research. SmartGlass International installed SPD-SmartGlass in CERN's Globe of Science and Innovation that will house a permanent exhibition and is intended to serve as a venue for a wide range of activities, conferences and other events, In February 2011, SmartGlass International announced it supplied retrofit SPD-SmartGlass to five London television studios of the Associated Press. The SPD-SmartGlass used in these projects harvests daylight when it's needed, improves occupant comfort by providing controllable solar shading during peak light conditions, and preserves views. Just prior to this installation, it was announced that SmartGlass International installed retrofit SPD-SmartGlass panels at the set of "Daybreak," the breakfast anchor program from ITV, one of the UK's largest commercial television networks.

In 2014, Research Frontiers added Teknoglass Solutions LLP and Diamond Glass. Teknoglass Solutions LLP acquired a license from Research Frontiers Inc. to make and sell SPD-SmartGlass architectural smart window products in the United Kingdom and Republic of Ireland. Diamond Glass acquired a license from Research Frontiers Inc. to make and sell SPD-SmartGlass architectural smart window products throughout Europe. In November 2013, Research Frontiers announced that it had a new licensee, MDV, who is targeting the architectural market in Brazil. In March of 2013 Research Frontiers announced that it had added two new licensees, Tint-It JSC and Advnanotech, both of whom are targeting the architectural market (in addition to the automotive aftermarket discussed previously) in Russia.

9. SPD-Smart Marine Products:

Research Frontiers and its licensees are currently working with marine customers to introduce SPD-Smart products including windows, doors and partitions. When our patented SPD-Smart light-control technology is used in yacht windows and other products, users can quickly and precisely control and "tune" the amount of light, glare and heat coming through their windows, while preserving their view. Diamond Sea Glaze Manufacturing commenced marketing activities for products using SPD technology during the second quarter of 2011 but did not renew its license for SPD-SmartGlass technology for the marine market which terminated at the end of December 2017.

In January of 2024, Vision Systems disclosed their marine contracts with OEM and Tier-1 suppliers using SPD-SmartGlass technology, noting that they have nine contracts for sailing yachts, motor yachts, and cruise ships.

In October 2022, at the NBAA trade show, Vision Systems discussed their SPD-SmartGlass contracts for marine platforms, which includes three sailing yacht contract, four yacht contracts, and two cruise ship contracts.

In June 2019, Vision Systems exhibited at the Cruise Ship Interiors Expo in Miami, Florida. Building upon its expertise in dimmable shading systems, Vision Systems exhibited its Electronically Dimmable Windows (EDWs) for solar protection and privacy, including a curved dimmable solution, a complete privacy solution, and a multizone Electronically Dimmable Window with integrated information display. Vision Systems' innovative solutions make it possible to eliminate shades that clutter up the space, block the view and require regular maintenance. They also allow for a solar protection on windows where shades could not, or be difficult, to be installed.

In October 2016, Vision Systems announced at the Monaco Yacht Show and 2016 IBEX new relationships for offering SPD-SmartGlass products with Taylor Made Systems, ProCurve Glass, and Yachtglass. In addition, the Monaco Yacht Show hosted the world premiere of the "Edition 1" model of the "ARROW460 – Granturismo," which has SPD-Smart dimmable glazing products throughout the Silver Arrows Marine motor yacht supplied by Vision Systems and designed by Mercedes-Benz Design.

In November 2015, Silver Arrows Marine in conjunction with Mercedes-Benz Style (a design arm of Mercedes-Benz) unveiled a new yacht called the ARROW460 – Granturismo featuring an SPD-SmartGlass electronically dimmable roof. The roof, which is supplied by licensee Vision Systems, will be able to be electrically risen, creating a "glass pergola" effect on the yacht. First customer deliveries of this production yacht are planned to start in early 2016. Vision Systems presented its products at the 2015 Marine Equipment Trade Show in Amsterdam in November 2015 and at the Monaco Yacht Show in September 2015.

In November 2013, Hatteras Yachts unveiled its new flagship motor yacht, the 100 Raised Pilothouse with dual SPD-SmartGlass skylights in the galley as standard equipment at the 2013 Fort Lauderdale Boat Show.

In February 2013, licensee Isoclima demonstrated its VebLite brand of SPD-SmartGlass for marine applications at SEATEC 2013 in Italy. SEATEC is a leading international exhibition of technology and design for boats, megayachts and ships.

In November 2012, licensee Isoclima exhibited its VebLite brand of SPD-SmartGlass for marine applications at the Marine Equipment Trade (METS) Show 2012 in The Netherlands. VebLite is Isoclima's SPD-Smart solar control and privacy glazing product that functions like a venetian blind. It has multiple segments that provide instantly customizable shading fully controlled by the passenger that can be operated individually to create the effect of a shade being raised or lowered or moved to the side. This precisely controls where incoming heat and glare enter a yacht or boat through a window or rooflite, and also controls privacy levels.

In addition to exhibiting its SPD-Smart marine products at METS 2012, licensee Vision Systems' SPD-Smart Nuance dimmable marine window was named the category winner in the prestigious METS 2012 Design Award METS (DAME) competition for interior equipment, furnishing, materials and electrical fittings used in cabins. DAME is considered the world's most prestigious design competition for new marine equipment and accessories. In METS' news release about the DAME award, it was noted "The Jury felt that Nuance is a major innovation that will benefit designers and owners greatly - with comparatively little increase in cost."

In October 2011, Cheoy Lee Shipyards unveiled the Alpha 76 Express, its most advanced production yacht, which is fully equipped with the latest yacht design features including SPD-SmartGlass supplied by Research Frontiers licensee Diamond Sea Glaze. The Alpha has approximately 150 square feet of SPD-SmartGlass at various places throughout the vessel and it is the first large-scale production yacht to make such extensive use of SPD-SmartGlass. In October 2012, Cheoy Lee Shipyards exhibited two yachts – the Alpha 76 Express and the Alpha 76 Flybridge – at the 2012 Fort Lauderdale International Boat Show with SPD-SmartGlass.

10. *VariGuard SmartGlass:*

In May 2013, Research Frontiers announced the formation of its VariGuard SmartGlass business unit. This business unit allowed the Company to directly address market opportunities for SPD technology outside the scope of its current license agreements or the focus of its licensees. VariGuard SmartGlass was a developmental activity for the Company and its revenues are currently immaterial relative to the Company's licensing activities.

The VariGuard SmartGlass business unit marketed and sold SPD-Smart products directly to customers for specialty uses such as the protection of artwork and light-sensitive documents in museums and private collections. The business uses an optimized fabrication designed specifically for its exhibition panels. The production of these panels is outsourced to current licensees that have experience producing SPD laminates.

Excessive light-exposure is a leading cause of irreversible damage to many precious objects, particularly works on paper, textiles and watercolor. Presently, no display system is able to provide these artifacts with any protection against visible light damage. VariGuard SmartGlass provides the world's first and only display panels that limit an artifact's light-exposure only to when the artifact is being viewed. This provides unequalled protection for light-sensitive artifacts by substantially reducing an artifact's overall lux-hour exposure when compared to conventional display panels.

VariGuard SmartGlass marketing and exhibition activities include:

- October 2018: In an inauguration ceremony presided over by the King and Queen of Sweden, the country's Nationalmuseum reopened after a five-year $132 million renovation. The Nationalmuseum selected ArtRatio's display case, engineered using VariGuard SmartGlass, to allow visitors to experience these objects while at the same time providing unprecedented protection against irreversible damage from exposure to light.

Some of the works being protected by the ArtRatio display case include:

- Book of Hours, St. Christopher carrying the Christ Child, watercolor and gold on parchment, Spain, c1400.
- Book of Hours, Arrest of Christ, watercolor and gold on parchment, France, c1500.
- Ivory object, Christ on the Cross, France, c1350.
- Book of Hours, St. Catherine and Kneeling Donor, watercolor and gold on parchment, Netherlands, c1430.
- Book, The Hours of Giraldi-Guicciardini: The Rising of Lazarus; Death Carrying a Scythe; 1500-1525, Watercolor, gold on parchment, Italy.

Many objects in the collection date from the Middle Ages and are highly susceptible to permanent damage from exposure to UV, visible and infrared light.

Nationalmuseum Comments:

"*The ArtRatio smart glass table works wonderfully, does its job of protecting our manuscripts and looks great in the room as well!"* Carina Pia Fryklund – Curator, Department of Prints and Drawings, Nationalmuseum

"With VariGuard SmartGlass we can now show very light sensitive illuminations in a gallery where we also let daylight coming in." Joakim Werning – Exhibition Designer, Nationalmuseum

- January 2018: VariGuard SmartGlass showcased its SPD-SmartGlass products at the West Coast Art and Framing Expo at Omega Moulding's booth #431.

- December 2017: To raise awareness of the unprecedented benefits of VariGuard SmartGlass, the Company has launched an advertising campaign targeting the display case and custom framing industries. The first phase of the campaign utilizes publications from leading conservation institutions in the US (Journal of the American Institute of Conservation) and the UK (Institute of Conservation) as well the leading institution for the picture framing industry (Picture Framing Magazine).

- May 2017: VariGuard SmartGlass showcased its SPD-SmartGlass products at the 45th annual meeting of the American Institute for Conservation of Historic and Artistic Works (AIC) in Chicago at booth #107.

- September 2015: The Church History Museum, operated by The Church of Jesus Christ of Latter-day Saints, installed 22 exhibit cases containing VariGuard SmartGlass panels to protect light sensitive documents and artifacts. VariGuard panels provide a better viewing experience (by allowing substantially higher gallery illumination levels), while simultaneously reducing damaging visible light-exposure to artifacts.

- August 2015: The Smithsonian's National Postal Museum selected VariGuard SmartGlass panels to protect the 1856 British Guiana One Cent Magenta, the world's most famous rare postage stamp.

- May 2015: VariGuard SmartGlass exhibited its products at the American Institute for Conservation of Historic and Artistic Works ("AIC") 43rd annual meeting in Miami, FL. Seth Van Voorhees, President of the VariGuard SmartGlass business unit commented: "Our display panels offer the highest level of protection against UV and visible light damage in the industry and they are being used in cases, frames and wall cases to protect various light sensitive artifacts in museums internationally. Reinforcing the benefits of VariGuard panels and how they limit light exposure, the Smithsonian National Postal Museum presented a paper at this meeting entitled "(Year of Light) Lighten Up: Enhancing Visitor Experiences," which will discuss the positive impact that VariGuard panels have in protecting valuable artifacts and enhancing the visitor experience.

- January 2015: VariGuard SmartGlass exhibited its display panels at a Washington Conservation Guild meeting focused on innovative new conservation technologies at the Smithsonian Institution's S. Dillon Ripley Center in Washington, DC.

- November 2014: VariGuard SmartGlass was invited to present at a meeting of the Washington Conservation Guild which was entitled: "Outsmarting Light: SmartGlass Technology in Exhibitions". At this meeting, results of the light conservation benefits of its light control panels at the National Postal Museum were reported. This study quantified the dramatic reduction (>86%) in light exposure that artifacts experienced in cases using VariGuard SmartGlass display panels versus traditional glass display panels.

- June 2014: VariGuard SmartGlass business unit announced that the Smithsonian's National Postal Museum will use VariGuard SmartGlass panels based on SPD-SmartGlass technology at the "Behind the Badge" exhibition in Washington, DC. This exhibit showcases the work of one of the nation's oldest federal law enforcement agencies and VariGuard panels are featured in display cases that showcase historic light-sensitive artifacts.

- January 2014: VariGuard SmartGlass announced that Omega Moulding will distribute its patented light control SmartGlass products for frames and display cases in the United States and Canada. That month Omega Moulding showcased the benefits of VariGuard SmartGlass products at the 15th Annual West Coast Art and Frame Expo and National Conference in Las Vegas, NV.

- May 2013: VariGuard SmartGlass featured its panels in several framing applications at Museum Expo 2013 at the Baltimore Convention Center in Baltimore, MD.

On March 14, 2019, the Company suspended its VariGuard SmartGlass business unit activities. Instead, the Company licensed a new entity to pursue the business opportunities previously pursued by the Company's VariGuard SmartGlass business unit. This new licensee continues to use the VariGuard SmartGlass name. The non-exclusive license grants this new licensee the right to manufacture and sell: (i) SPD-SmartGlass products used in panels, frames, cases, wall cases, appliances or other similar products to protect light-sensitive documents, artwork or other objects, (ii) SPD-SmartGlass products used in panels, frames, cases, wall cases, appliances or other similar products to provide "hide and reveal" functionality, and (iii) SPD-SmartGlass products used in a medical device to provide control and management of visible light.

More information about VariGuard SmartGlass can be found on its independent website at www.VariGuard.com.

Marketing Activities and Licensee Support:

In addition to supporting the efforts of its licensees, the Company also recognizes the need to develop the SPD industry as a whole. As such, the Company continues to plan and execute complementary programs that build awareness and interest in smart glass generally and demand for SPD-Smart products specifically. In the last several years, these programs included presentations at various general industry conferences, participation in panel presentations and discussions hosted by academia, development of trade association educational materials, and presentations to architects, designers, and other influential specifiers.

In January 2020, the Company and Gauzy presented at the CES in Las Vegas the benefits of SPD-SmartGlass for the automotive, architectural and consumer electronics industries. Some examples on display were automotive sunroofs that could be controlled electronically with a variety of control systems including smart speakers, high definition and projection displays. The use of SPD-SmartGlass technology enhances the clarity and vibrancy of displayed images, and when used to control the tint of automotive windows, sunroofs and sun visors, reduces heat, light or glare on demand or automatically. This can increase the driving range of electric vehicles by up to 5.5% and reduce CO2 emissions by up to four grams per kilometer and reduce air conditioner compressor sizes by 40%.

In February 2019, Research Frontiers and its licensee Gauzy rang the opening bell at the Nasdaq Market Site in Times Square to announce Gauzy's new SPD-Smart light control film factory in Stuttgart, Germany. In early December 2019, Research Frontiers, Gauzy and executives from the automotive and architectural smart glass industries, invited guests and government officials, celebrated the opening of Gauzy's new state-of-the-art production facility in Stuttgart, Germany. In May 2019, Research Frontiers presented the benefits of SPD-SmartGlass to the Automotive Industry at the 5th International CTI Automotive Glazing USA conference in Novi, Michigan. In March 2019, the Company presented the benefits of SPD-SmartGlass to the Automotive Industry at the Automotive Glazing Summit in Berlin, Germany. Both of these presentations focused on a real-world analysis of the use, benefits and reliability of SPD-SmartGlass in automotive and other glazings. SPD-SmartGlass technology, which allows users to instantly vary the tint of glass or plastic, is currently being used in the automotive, aircraft, marine, architectural, museum and consumer electronics industries.

In 2018, the Company was invited to speak at the 12th International CTI Conference – Automotive Glazing Europe and at the 3rd Annual 2018 Disruptive Growth & Healthcare Conference on the subject of disruptive automotive technologies. In 2017 and 2016, the Company participated in clean tech, emerging growth and automotive glass conferences in Europe, and during 2016 the Company presented at the Autonomous Vehicle Interior Design & Technology Symposium in Novi, Michigan and was the keynote speaker, and event chairman, at the annual CTI Automotive Glazing USA Conference in Rochester, Michigan.

The Company's market development department has a number of other initiatives in place. To help guide and prioritize its technical and marketing investments, the Company periodically retains outside strategic marketing and other consultants to help generate increased short- and medium-term market penetrations for each of the major markets for the Company's light-control technology, and to provide support and guidance to the Company's licensees worldwide.

The Company has emerged as a leading resource for market research information on the subject of smart glass. Research Frontiers lectures and presents at industry conferences in areas of energy efficiency, daylight harvesting and sustainability. The Company has published independent test data about SPD-SmartGlass, shared the results of its research studies and test data with industry and the media, posted various reference materials to the Company's website for global dissemination, and published presentations, data and bylined articles.

Research Frontiers maintains an active role with various standards-setting organizations, including ASTM International, which has an active committee developing standards for smartglass.

In addition to Research Frontiers providing overarching support of licensees' sales efforts by developing the SPD industry as a whole, leveraging its prominence as a leading resource on the topic of smart glass, and maintaining an active role with standards organizations, Research Frontiers also supports licensees' marketing and sales efforts directly. Activities include advising and assisting with branding strategies and advertising campaigns, website development and other marketing materials, joint presentations to prospective customers, and additional support. As a focal point of interest in smart glass, resulting in many consumer and business inquiries, Research Frontiers has an active referral program to generate customer leads for its licensees.

As part of this mission to develop the industry and to support our licensees' acquiring SPD projects, Research Frontiers completed the construction of the SPD-SmartGlass Design Center. This Center is also configured as an interactive and energy-efficient "smart" executive office and conference room and is located at the Company's corporate headquarters in Woodbury, New York. The SPD-SmartGlass Design Center features leading-edge SPD-Smart windows of different sizes (some floor-to-ceiling) and framing materials. It has a multi-functional electronic controller system for manual, remote, and automatic SPD-SmartGlass switching, and windows that can be controlled remotely over the internet or using a smart phone. This interactive area also contains other types of smart glass, such as those using liquid crystal and electrochromic technologies, allowing users to operate and experience first-hand the differences in performance characteristics of different types of smart glass. Additional showcases of SPD-SmartGlass are being established in other geographic locations to make it convenient for even more people to experience the benefits of SPD-SmartGlass technology.

Research Frontiers' Design Center is the only known public forum where designers, specifiers and end-users can compare performance between SPD-Smart technology and products using other light-control technologies. Research Frontiers believes that the growth of the smart glass industry will accelerate as more information is made available through direct comparisons. Research Frontiers believes that SPD products will be strongly preferred over competing technologies once a direct comparison is available to potential buyers. Research Frontiers continues to encourage its competitors to participate in public forums where consumers of electronically tintable products can see the relative performance of products that are available.

Licensees of Research Frontiers:

The Company's licensees are currently categorized into four main areas: materials for making films (emulsions), film, lamination of film to glass or plastic, and end-products. Emulsion makers produce and combine the necessary materials (i.e., SPD particles and various liquids and special polymers) from which SPD-Smart films are made. The film makers coat a thin layer of emulsion between two sheets of plastic film, each of which has a transparent conductive coating. This emulsion is then partly solidified to form an SPD film that allows users to control the amount of light, glare and heat passing through this film. The end-product licensees then integrate this film into a variety of SPD-Smart products or make electronic systems to control such SPD-Smart products. Some of these end-product licensees do their own lamination of the SPD light-control film to glass or plastic, and some outsource this lamination to other companies. The names of Research Frontiers' licensees, and the year that their license agreements were entered into, are available on the Company's SmartGlass.com website and with its filings with the Securities and Exchange Commission.

Licensees of Research Frontiers that incorporate SPD technology into end-products will pay Research Frontiers a royalty of 10-15% of net sales of licensed products under license agreements currently in effect and may also be required to pay Research Frontiers fees and minimum annual royalties. Licensees that sell components (such as SPD emulsion or film) or lamination services to other licensees of Research Frontiers do not pay a royalty on such sale or service, and Research Frontiers will collect a royalty from the licensee incorporating these components into their own SPD-Smart end-products. Research Frontiers' license agreements typically allow the licensee to terminate the license after some period of time and give Research Frontiers only limited rights to terminate before the license expires. The current licensees of Research Frontiers are listed on the Company's website, and licenses granted by the Company are non-exclusive and generally last as long as Research Frontiers' patents remain in effect. Due to their bankruptcy filings or other termination of their general business activities or for other reasons, the Company does not believe that Polaroid Corporation, Kerros Limited, ThermoView Industries, BRG Group, MDV, Hanamac, SPD Technologies, SPD Systems, and Film Technologies International are pursuing business activities with respect to SPD technology. The Company and SPD Control Systems agreed to terminate their license agreement in December 2014 which resulted in a grant back to Research Frontiers of certain rights in SPD Control Systems' intellectual property. Some of the Company's other licensees are currently inactive with respect to SPD technology, but may hereafter become active again. To date, the Company has not generated sufficient revenue from its licensees to profitably fund its operations other than a profit reported for the third quarter of 2021.

The Company plans to continue to exploit its SPD-Smart light-control technology by entering into additional license and other agreements with end-product manufacturers such as manufacturers of flat glass, flat panel displays and automotive products, and with other interested companies who may wish to acquire rights to manufacture and sell the Company's proprietary emulsions and films. Although the Company believes based upon the status of current negotiations that additional license agreements with third parties will be entered into, there can be no assurance that any such additional license agreements will be consummated, or of the extent to which any current or future licensee of the Company will produce or sell commercial products using the Company's technology or generate meaningful revenue from sales of such licensed products.

The Company's plans also call for further development of its technology and the provision of additional technological and marketing assistance to its licensees to develop commercially viable SPD-Smart products and expand the markets for such products. The Company cannot predict when or if new license agreements will be entered into or the extent to which commercial products will result from its existing or future licensees because of general economic conditions and the risks inherent in the developmental process and because commercialization is dependent upon the efforts of its licensees as well as on the continuing research and development efforts of the Company.

In February 2022, Research Frontiers, and its licensee and strategic investor Gauzy Ltd. announced that, following successfully raising $60 million in a Series D financing, Gauzy has acquired Research Frontiers licensee, Vision Systems. With the consolidation of the two companies, the combined entity now has international subsidiaries on six continents, product availability through direct fulfillment and a distribution channel of over 70 certified industrial partners, five dedicated manufacturing sites, 14 global offices. The combined entity reported revenues of approximately $50 million in 2021, and holding over 60 patents, offering 20 unique product categories, and employing 480 people globally serving customers in over 50 countries.

Competitive Technologies:

The Company believes that SPD light-control technology, in which particles move under the influence of an electric field, has certain performance advantages over other "smart glass" technologies.

The Company believes that pricing and product performance are the two main factors critical to the adoption of smart glass products. Because the non-SPD smart glass technologies listed below do not have published, consistent pricing or cost data that can be relied upon, the Company cannot accurately report its price position relative to these other technologies. In terms of product performance, the Company believes that SPD-SmartGlass technology offers numerous advantages over other smart glass technologies as discussed below.

Variable light transmission technologies can be classified into two basic types: “active” technologies that can be controlled electrically by the user either automatically or manually, and “passive” technologies that can only react to ambient environmental conditions such as changes in lighting or temperature. One type of passive variable light transmission technology is photochromic technology; such devices change their level of transparency in reaction to external ultra-violet radiation. As compared to photochromic technology, the Company’s SPD technology permits the user to adjust the amount of light passing through the viewing area of the device, rather than the viewing area of the photochromic device merely reacting to external radiation without control by the user. In addition, the reaction time necessary to change from light to dark with SPD-Smart technology can be almost instantaneous, as compared to the much slower reaction time for photochromic devices. Also, unlike SPD technology, photochromic technology does not function well at the high and low ends of the temperature range in which smart windows and other devices are normally expected to operate, nor does photochromic technology perform well in vehicles or other enclosed settings where existing glass is blocking incoming ultra-violet light which is required for photochromic devices to operate.

Similarly, thermochromic smart windows are passive systems which change their light transmission properties as sunlight heats or cools the glass. Because the light transmission properties of thermochromic systems are not controlled by the user, their ability to adapt to the specific needs of occupants is very limited. For example, thermochromic glazings will remain tinted on hot days even when occupants desire more daylight to enter the building or when they want to preserve their views. SPD-Smart windows, which require very low amounts of power to operate, allow for much greater control of incoming light, glare and heat and can be adjusted to any level of light transmission from dark to clear at any time. In addition, SPD-Smart windows can block up to 99.5% of incoming light, a level many times darker than thermochromic systems. The added advantage offers much higher levels of privacy and control over incoming solar energy. Companies involved in thermochromic technology include Pleotint, Suntek and Ravenbrick.

Active, user-controllable technologies, sometimes referred to as “smart” technologies, are generally more useful than passive technologies because they allow the user to actually control the state of the window. This control is achieved with a manual adjustment, or automatically when coupled with a timer or sensing device such as a photocell, motion detector, thermostat or other intelligent building system.

There are three main types of active devices which are compared below:

- Electrochromic devices (EC)
- Liquid crystal devices (LC)
- Suspended-particle devices (SPD)

Electrochromic Technology:

Electrochromic windows and rear-view mirrors use a direct current voltage to alter the molecular structure of electrochromic materials (which can be in the form of either a liquid, gel or solid film) causing the material to darken. When compared to electrochromic devices, SPD technology is expected to have numerous potential performance and manufacturing advantages, including some or all of the following:

- significantly faster response time, especially compared to larger electrochromic glazings
- ability to precisely “tune” an infinite number of intermediate light-transmission states
- consistent and uniform switching speed regardless of size of glazing area
- more reliable performance over a wider temperature range
- higher contrast ratios and the capability of achieving darker shaded states for large area product applications
- unpowered state is dark, maximizing solar heat gain benefits when the room, office or vehicle is not in use
- lower electrical current drain

- higher estimated battery life in applications where batteries are used

- no “iris effect” (where light transmission changes first occur at the outer edges of a window or mirror and then work their way toward the center) when changing from clear to dark and back again

- SPD technology is a film-based technology that can be applied to plastic, acrylic, and chemically strengthened glass as well as glass, and which can be applied to curved as well as flat surfaces

- available in single panels for retrofitting existing windows, skylights and doors

Many companies with substantially greater resources than Research Frontiers such as 3M, Gentex Corp., Pilkington, PPG Industries, Saint-Gobain and other large corporations have pursued or are pursuing projects in the electrochromic area. While some of these companies have reportedly discontinued or substantially curtailed their work on electrochromics due to technical problems and issues relating to the expense of these technologies, at least four companies (Gentex, PPG Industries, View (formerly known as Soladigm), and Sage Electrochromics) are currently working to commercialize electrochromic window products. In May 2012, Saint-Gobain acquired Sage Electrochromics and combined all of their respective electrochromic manufacturing and developmental efforts.

Liquid Crystal Technology:

To date, the main types of liquid crystal smart windows have been produced by Taliq Corp. (a subsidiary of Raychem Corp. which has since discontinued its liquid crystal operations and licensed its technology to others), Asahi Glass Co., Gauzy, Nippon Sheet Glass, Saint-Gobain Glass, iGlass Projects Pty Limited, Polytronix, Inc., DMDisplays, and 3M (which has also reportedly discontinued its liquid crystal film making operations). The first four companies listed above are also licensees of Research Frontiers for SPD-Smart technology. Liquid crystal windows only change from a cloudy, opaque milky-white to a clear state, are hazy when viewed at an angle and have no useful intermediate states. As compared to liquid crystal windows, SPD smart windows are expected to have some or all of the following advantages:

- have less direct and off-angle haze

- in its intermediate tinted states provides shading without loss of view

- operates over a wider temperature range

- uses less power

- higher contrast ratios

- reduction in the amount of light transmitted rather than simply scatter it

- permits an infinite number of intermediate states between a transparent state and a dark blue state, rather than typically just two states

- offers superior solar heat gain control

In the flat panel display market, further development (such as the achievement of faster switching speeds sufficient for full-motion video applications) is required if the Company expects to compete against display technologies that are currently being used commercially such as liquid crystal displays (“LCDs”) and organic light-emitting diodes (“OLEDs”). Some of the advantages that SPD displays might have include the ability to make displays without using sheet polarizers or alignment layers, and lower light loss and a corresponding reduction in backlighting requirements. However, such products need additional product design, engineering or testing before an evaluation of the commercial potential of such SPD-SmartGlass products can be determined and when, or if, its licensees may begin to penetrate the flat panel display market.

LCDs and other types of displays, liquid crystal windows, as well as electrochromic self-dimmable rear-view mirrors, are already on the market, whereas products incorporating SPD technology (as well as electrochromic windows) have only begun to appear in the marketplace. Therefore, the long-term durability and performance of SPD-Smart displays have not yet been fully ascertained. The companies that manufacture LCD and other display devices, liquid crystal windows, and electrochromic self-dimmable rear-view mirrors and windows, have substantially greater financial resources and manufacturing experience than the Company. There is no assurance that comparable systems having the same advantages of the Company's SPD technology could not be developed by competitors at a lower cost or that other products could not be developed which would render the Company's products difficult to market or otherwise render our products obsolete.

Research and Development:

As a result of the Company's research and development efforts, the Company believes that its SPD technology is now, or with additional development will become, usable in a number of commercial products. Such products may include one or more of the following fields: "smart" windows, doors, skylights and partitions; variable light transmission eyewear such as sunglasses and goggles; self-dimmable automotive sunroofs, windows, sun visors, and mirrors; display cases/frames; and instruments and other information displays that use digits, letters, graphic images, or other symbols to supply information, including scientific instruments, aviation instruments, automobile dashboard displays and, if certain improvements can be made in various features of the Company's SPD technology that increases switching speed to the levels needed for video applications, portable computer displays and flat panel television displays.

Even though the Company's SPD technology has much faster switching speeds than electrochromic technology, current switching speeds are not fast enough for such video applications. The Company believes that most of its research and development efforts have applicability to products that may incorporate the Company's technology. At its current state of development, the Company's technology has been judged sufficiently advanced by various of its licensees and their customers for them to proceed with the development, introduction and sale of SPD-Smart products. However, the Company is continuously investing in research and development because it believes that further improvements will result in accelerated and increased market penetration. The Company intends to continue its research and development efforts for the foreseeable future to improve its SPD light-control technology and thereby assist our licensees in the product development, sales and marketing of various existing and new SPD-Smart products.

During the past few years, the Company and/or its licensees have made significant advances relating to materials to enable (1) improved stability of SPD emulsions, (2) a wider range of light transmission, (3) improved film adhesion and cohesion, (4) increased durability of SPD films/laminates, and (5) cost reductions. These advances have resulted in patents being issued to the Company by the US Patent Office and by foreign patent offices between 2018-2023 in addition to other patents and patent applications that are pending worldwide.

The Company has devoted most of the resources it has heretofore expended to research and development activities with the goal of producing commercially viable SPD products and has developed working prototypes of SPD-Smart products for several different applications, with primary emphasis on smart windows for various industries. In addition to working with the Company's licensees, Research Frontiers has also expanded its efforts to also work directly with some of our licensees' major customers.

Research Frontiers' main goals in its research and development include:

- developing wider ranges of light transmission and quicker switching speeds
- developing different colored particles
- reducing the voltage required to operate SPDs
- obtaining data and developing improved materials regarding environmental stability and longevity
- quantifying the degree of energy savings expected by users of the Company's technology including the degree that SPD technology can control heat and its contribution to energy savings directly and through daylight harvesting strategies in sustainable building designs
- continually striving to improve the performance and reducing material/production costs associated with making SPD-Smart products

Excluding non-cash expenses of approximately $8,000 and $16,000, associated with the grant of stock options to the Company's technical personnel, Research Frontiers incurred approximately $575,000 and $593,000 during the years ended December 31, 2023 and 2022, respectively, for research and development costs. Research Frontiers plans to engage in substantial continuing research and development activities to invest in future improvements in SPD light-control technology and to expand for its licensees the capabilities of SPD-Smart technology and the markets for SPD-Smart products.

Patents and Proprietary Information:

Research Frontiers continues to make substantial investments to develop, license and protect its intellectual property position. The Company has 12 United States and several hundred foreign patents in force. The Company's United States patents expire at various dates from 2024 through 2037, while its foreign patents expire at various dates from 2024 through 2037.

The Company has current US and foreign patent applications that, if granted, would add a number of additional patents to its portfolio. The Company believes that its SPD light-control technology is adequately protected by its patent position and by its proprietary technological know-how. However, the validity of the Company's patents has never been contested in any litigation. The Company also possesses know-how and relies on trade secrets and nondisclosure agreements to protect its technology. The Company generally requires any employee, consultant, or licensee having access to its confidential information to execute an agreement whereby such person agrees to keep such information confidential.

Rights Plan:

In February 2013, the Company's Board of Directors adopted a Stockholders' Rights Plan (the "Rights Plan") and declared a dividend distribution of one right (a "Right") for each outstanding share of Company common stock to stockholders of record at the close of business on March 3, 2003 ("Record Time") and authorized the issuance of one Right in respect of each share of Common Stock issued after the Record Time and prior to the Separation Time. The Rights Plan was readopted and extended in December 2022 until February 11, 2033.

"Separation Time" shall mean the earlier of the Close of Business on the tenth Business Day (or such later date as the Board of Directors may from time to time fix by resolution adopted prior to the Separation Time that otherwise would have occurred) following but not including (i) the date on which any Person commences a tender or exchange offer that, if consummated, would result in such Person's becoming an Acquiring Person, and (ii) the date of the first event causing a Flip-in Date to occur; provided that if any tender or exchange offer referred to in clause (i) of this paragraph is cancelled, terminated or otherwise withdrawn prior to the Separation Time without the purchase of any shares of Common Stock pursuant thereto, such offer shall be deemed, for purposes of this paragraph, never to have been made.

Subject to certain exceptions listed in the Rights Plan, if a person or group has acquired beneficial ownership of, or commences a tender or exchange offer for, 15% or more of the Company's common stock, unless redeemed by the Company's Board of Directors, each Right entitles the holder (other than the acquiring person) to purchase from the Company $80 worth of common stock for $40. If the Company is merged into, or 50% or more of its assets or earning power is sold to, the acquiring company, the Rights will also enable the holder (other than the acquiring person) to purchase $80 worth of common stock of the acquiring company for $40. During 2022, the Company extended the expiration of The Rights which will now expire at the close of business on February 11, 2033, unless the Rights Plan is extended by the Company's Board of Directors or unless the Rights are earlier redeemed by the Company at a price of $.0001 per Right. The Rights are not exercisable during the time when they are redeemable by the Company.

The above description highlights some of the features of the Company's Rights Plan and is not a complete description of the Rights Plan. A more detailed description and copy of the Rights Plan has been filed with the SEC and is available from the Company upon request.

Available Information:

Our principal executive offices are located at 240 Crossways Park Drive, Woodbury, New York 11797, our telephone number is (516) 364-1902, and our Internet website address is www.SmartGlass.com. We make available free of charge on or through our Internet website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements on Schedule 14A, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after we electronically file such materials with, or furnish them to, the SEC.

ITEM 1A. RISK FACTORS

In addition to the other information in this Annual Report on Form 10-K, you should carefully consider the following factors in evaluating us and our business. This Annual Report contains, in addition to historical information, forward-looking statements that involve risks and uncertainties, some of which are beyond our control. Should one or more of these risks and uncertainties materialize or should underlying assumptions prove incorrect, our actual results could differ materially. Factors that could cause or contribute to such differences include, but are not limited to, those discussed below, as well as those discussed elsewhere in this Annual Report, including the documents incorporated by reference.

There are risks associated with investing in companies such as ours who are primarily engaged in research and development. In addition to risks which could apply to any company or business, you should also consider the business we are in and the following:

Source and Need for Capital.

As of December 31, 2023, we had approximately $2.5 million in cash and cash equivalents.

As we take steps in the commercialization and marketing of our technology or respond to potential opportunities and/or adverse events, our working capital needs may change. We anticipate that if our cash and cash equivalents are insufficient to satisfy our liquidity requirements, we will require additional funding to sustain our ongoing operations and to continue our SPD technology research and development activities.

We have funded most of our activities through sales of our common stock to investors, and upon the exercise of options and warrants. The eventual success of the Company and generation of positive cash flow will be dependent upon the extent of commercialization of products using the Company's technology by the Company's licensees and payments of continuing royalties on account thereof. We can give no assurances that we will generate sufficient cash in the future (through sales of our common stock, exercise of options and warrants, royalty fees, or otherwise) to satisfy our liquidity requirements or sustain future operations, or that additional funding, if required, will be available when needed or, if available, on favorable terms.

As of December 31, 2023, the Company had cash and cash equivalents of approximately $2.5 million, working capital of $3.3 million and total shareholders' equity of $3.5 million. Our quarterly projected cash flow shortfall, based on our current operations, adjusted for any non-recurring cash expenses and adjusted for additional royalties expected to be received for use of our products in new production, for the next 12 months, is approximately $200,000 to $250,000 per quarter. We may eliminate some operating expenses in the future, which will further reduce our cash flow shortfall if needed. Based on these assumptions, we currently expect to have sufficient working capital for more than the next five years of operations.

History of Operating Losses.

We have experienced net losses from operations, and we may continue to incur net losses from operations in the future. We have incurred substantial costs and expenses in researching and developing our SPD technology. As of December 31, 2023, we had an accumulated deficit of $124.3 million since our inception. Our net loss was $1.9 million in 2023 and $2.7 million in 2022, (which includes non-cash accounting charges in 2023 and 2022 of $0.1 million and $0.2 million, respectively, resulting from the expensing of grants of stock options).

We may not generate sufficient cash flows to cover our operating expenses.

As noted above, we have incurred recurring losses since inception and expect to continue to incur losses as a result of costs and expenses related to our research and continued development of our SPD technology and our corporate general and administrative expenses. Our limited capital resources and operations to date have been substantially funded through sales of our common stock, exercise of options and warrants and royalty fees collected. As of December 31, 2023, we had working capital of approximately $3.3 million, cash and cash equivalents of approximately $2.5 million, shareholders' equity of approximately $3.5 million and an accumulated deficit of $124.3 million. In the event that we are unable to generate sufficient cash from our operating activities or raise additional funds, we may be required to delay, reduce or severely curtail our operations or otherwise impede our on-going business efforts, which could have a material adverse effect on our business, operating results, financial condition and long-term prospects.

We have never declared a cash dividend and do not intend to declare a cash dividend in the foreseeable future.

We have never declared or paid cash dividends on our common stock. Payment of dividends on our common stock is within the discretion of our Board of Directors and will depend upon our future earnings, capital requirements, financial condition and other relevant factors. We do not anticipate declaring or paying any cash dividends on our common stock in the foreseeable future.

We do not directly manufacture products using SPD technology. We currently depend upon the activities of our licensees and their customers in order to be profitable.

We do not directly manufacture products using SPD technology. We currently depend upon the activities of our licensees in order to be profitable. Although a variety of products have been sold by our licensees, and because it is up to our licensees to decide when and if they will introduce products using SPD technology, we cannot predict when and if our licensees will generate substantial sales of such products. Our SPD technology is currently licensed to over 40 companies. Other companies are also evaluating SPD technology for use in various products. In the past, some companies have evaluated our technology without proceeding further. While we expect that our licensees would be primarily responsible for manufacturing and marketing SPD-Smart products and components, we are also engaging in market development activities to support our licensees and build the smart glass industry. We cannot control whether or not our licensees will develop SPD products. Some of our licensees appear to be more active than others, some appear to be better capitalized than others, and some licensees appear to be inactive. There is no guarantee when or if our licensees will successfully produce any commercial product using SPD technology in sufficient quantities to make the Company profitable.

Some SPD-Smart products have only recently been introduced.

Products using SPD technology have been in the market for decades and new product applications are being introduced in various industries. Some of these new products have only recently begun to be introduced into the marketplace. Developing products using new technologies can be risky because problems, expenses and delays frequently occur, and costs may or may not come down quickly enough for such products using new technologies to rapidly penetrate mass market applications.

We have several large licensees that account for 10% or more of our annual fee income.

During 2023, four licensees accounted for 39%, 16%, 16% and 13%, respectively, of fee income recognized for the year. During 2022, four licensees accounted for 28%, 23%, 13% and 11%, respectively, of fee income recognized for the year. The loss of all or a substantial portion of the fee income from any of these customers (or certain other significant customers) could have a material adverse effect on our business, financial condition, and/or results of operations.

SPD-Smart products face intense competition, which could affect our ability to increase our revenues.

The market for SPD-Smart products is intensely competitive and we expect competition to increase in the future. We compete based on the functionality and the quality of our product. Many of our current and potential competitors have significantly greater financial, technical, marketing and other resources than we have. In addition, many of our competitors have well-established relationships with our current and potential customers and have extensive knowledge of our industry. If our competitors develop new technologies or new products, improve the functionality or quality of their current products, or reduce their prices, and if we are unable to respond to such competitive developments quickly either because our research and development efforts do not keep pace with our competitors or because of our lack of financial resources, we may be unable to compete effectively.

Declining production of automobiles, airplanes, trains, boats and real estate could harm our business.

Our licensees' commercialization efforts of SPD-Smart products could be negatively impacted if the global production of automobiles, airplanes, trains, boats and real estate construction declines significantly. If such commercialization is reduced, our revenues, results of operations and financial condition could be negatively impacted.

Limited source of SPD film.

Our end-product licensees require a source of SPD film to manufacture finished products. Currently, Showa Denko Chemical and Gauzy Ltd. are the only sources of commercial quantities of SPD-film. There are several other companies that are licensed to manufacture SPD-film, but they have not begun commercial production of this film. Our end-product licensees' ability to sell SPD products could be negatively impacted if there was a prolonged disruption in SPD-film availability. Such a disruption could also negatively impact our revenues, results of operations and financial condition.

We are dependent on key personnel.

Our continued success will depend, to a significant extent, on the services of our directors, executive management team, key personnel and certain key scientists. If one or more of these individuals were to leave the Company, there is no guarantee that we could replace them with qualified individuals in a timely or economically satisfactory manner or at all. The loss or unavailability of any or all of these individuals could harm our ability to execute our business plan, maintain important business relationships and complete certain product development initiatives, which would have a material adverse effect on our business, results of operations and financial conditions.

Dependence on SPD-Smart technology.

Because SPD technology is the only technology we work with, our success depends upon the viability of SPD technology which has yet to be fully proven. We have not fully ascertained the performance and long-term reliability of our technology, and therefore there is no guarantee that our technology will successfully be incorporated into all of the products which we are targeting for use of SPD technology. We expect that different product applications for SPD technology will have different performance and reliability specifications. We expect that our licensees will primarily be responsible for reliability testing, but that we may also continue to do reliability testing so that we can more effectively focus our research and development efforts towards constantly improving the performance characteristics and reliability of products using SPD technology.

Our patents and other protective measures may not adequately protect our proprietary intellectual property, and we may be infringing on the rights of others.

Our intellectual property, particularly our proprietary rights in our SPD technology, is critical to our success. We have received various patents, and filed other patent applications, for various applications and aspects of our SPD technology. In addition, we generally enter into confidentiality and invention agreements with our employees and consultants. Such patents and agreements and various other measures we take to protect our intellectual property from use by others may not be effective for various reasons generally applicable to patents and their granting and enforcement. In addition, the costs associated with enforcing patents, confidentiality and invention agreements or other intellectual property rights may be expensive. Our inability to protect our proprietary intellectual property rights or gain a competitive advantage from such rights could harm our ability to generate revenues and, as a result, our business and operations.

If we fail to maintain an effective system of internal control over financial reporting, the accuracy and timing of our financial reporting may be adversely affected.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our management is likewise required, on a quarterly basis, to evaluate the effectiveness of our internal controls and to disclose any changes and material weaknesses identified through such evaluation of those internal controls. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

If we identify material weaknesses or significant deficiencies in our internal controls or disclosure controls, we may be unable to provide required financial information in a timely and reliable manner and we may incorrectly report financial information. If our financial statements are not filed on a timely basis, we could be subject to adverse action by shareholders, Nasdaq, the SEC or other regulatory authorities. The existence of material weaknesses or significant deficiencies in internal control over financial reporting could adversely affect our reputation or investor perceptions of us, which could have a negative effect on the trading price of our stock. In addition, we may incur additional costs to remediate material weaknesses or significant deficiencies in our internal control over financial reporting.

We cannot assure you that a material weakness will not arise in the future due to a failure to implement and maintain adequate internal control over financial reporting. In addition, even if we are successful in strengthening our controls and procedures, in the future those controls and procedures may not be adequate to prevent or identify irregularities or errors or to facilitate the fair presentation of our financial statements.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None

ITEM 2. PROPERTIES

The Company currently occupies approximately 9,500 square feet of space at an annual rent which, in 2023 was approximately $175,000, for its executive office, research facility and SPD-Smart Glass Design Center at 240 Crossways Park Drive, Woodbury, New York 11797 under a lease expiring March 31, 2025. The Company believes that its space, including its laboratory facilities, is adequate for its present needs.

ITEM 3. LEGAL PROCEEDINGS

There are no legal proceedings pending by or against the Company required to be reported under this Item 3.

ITEM 4. MINE SAFETY DISCLOSURES

N/A

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

(a) Market Information

(1) The Company's common stock is traded on the NASDAQ Capital Market under the symbol "REFR". As of March 6, 2024, there were 33,509,287 shares of common stock outstanding.

(2) The following table sets forth the range of the high and low selling prices (as provided by the National Association of Securities Dealers) of the Company's common stock for each quarterly period within the past two fiscal years:

Quarter Ended	Low	High
March 31, 2022	$ 1.34	$ 2.45
June 30, 2022	1.51	2.29
September 30, 2022	1.55	2.85
December 31, 2022	1.83	2.53
March 31, 2023	$ 1.68	$ 2.30
June 30, 2023	1.42	1.85
September 30, 2023	0.99	1.75
December 31, 2023	0.90	1.29

These quotations may reflect inter-dealer prices, without retail mark-up, mark-down, or commission, and may not necessarily represent actual transactions.

(b) Approximate Number of Security Holders

As of March 6, 2024, there were approximately 283 holders of record of the Company's common stock and the closing price of our common stock was $1.09 per share. The Company estimates that there are approximately 7,100 beneficial holders of the Company's common stock.

(c) Dividends

The Company has not declared or paid cash dividends on its common stock for the two most recent fiscal years and does not expect to declare or pay any cash dividends in the foreseeable future. There are no restrictions on the payment of dividends.

(d) Issuer Purchases of Equity Securities

None.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Forward-Looking Statements

Information included in this Annual Report on Form 10-K may contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are not statements of historical facts, but rather reflect our current expectations concerning future events and results. We generally use the words "believes," "expects," "intends," "plans," "anticipates," "likely," "will" and similar expressions to identify forward-looking statements. Such forward-looking statements, including those concerning our expectations, involve risks, uncertainties and other factors, some of which are beyond our control, which may cause our actual results, performance or achievements, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. These risks, uncertainties and factors include, but are not limited to, those factors set forth in this Annual Report on Form 10-K under "Item 1A. – Risk Factors" above. Except as required by applicable law, including the securities laws of the United States, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. You are cautioned not to unduly rely on such forward-looking statements when evaluating the information presented in this Annual Report on Form 10-K.

In reviewing Management's Discussion and Analysis of Financial Condition and Results of Operations, you should refer to our consolidated financial statements and the notes related thereto.

Critical Accounting Estimates

The following accounting estimates are important to understanding our financial condition and results of operations and should be read as an integral part of the discussion and analysis of the results of our operations and financial position. For additional accounting policies, see Note 2 to our Consolidated Financial Statements, "Summary of Significant Accounting Policies."

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the financial statements, and reported amounts of revenues and expenses during the reporting periods. Actual results could differ from these estimates. An example of a critical estimate is the full valuation allowance for deferred taxes that was recorded based on the uncertainty that such tax benefits will be realized in future periods.

The Company recognizes revenue in accordance with Accounting Standards Codification (ASC) 606, *Revenue from Contracts with Customers*. The Company determined that its license agreements provide for three performance obligations: (i) Grant of Use, (ii) Technical Support, and (iii) New Improvements.

The best method for determining the standalone selling price of our Grant of Use performance obligation is through a comparison of the average royalty rate for comparable license agreements as compared to our license agreements. Based on the royalty rate comparison referred to above, any pricing above and beyond the average royalty rate would relate to the Technical Support and New Improvements performance obligations.

We recognize revenue when or as the performance obligations in the contract are satisfied. For performance obligations that are fulfilled at a point in time, revenue is recognized at the fulfillment of the performance obligation. Since the IP is determined to be a functional license, the value of the Grant of Use is recognized in the first period of the contract term in which the license agreement is in force. Since the costs incurred to satisfy the Technical Support and New Improvements performance obligations are incurred evenly throughout the year, the value of the Technical Support and New Improvements services are recognized throughout the contract period as these performance obligations are satisfied.

The Company has entered into license agreements covering products using the Company's SPD technology. When royalties from the sales of licensed products by a licensee exceed its contractual minimum annual royalties, the excess amount is recognized by the Company as fee income in the period that it was earned. Certain of the fees are accrued by, or paid to, the Company in advance of the period in which they are earned resulting in deferred revenue.

Royalty receivables are stated less allowance for doubtful accounts. The allowance represents estimated uncollectible receivables usually due to licensees' potential insolvency. The allowance includes amounts for certain licensees where risk of default has been specifically identified. The Company evaluates the collectability of its receivables on at least a quarterly basis and records appropriate allowances for uncollectible accounts when necessary.

The Company has historically used the Black-Scholes option-pricing model to determine the estimated fair value of each option grant. The Black-Scholes model includes assumptions regarding dividend yields, expected volatility, expected lives, and risk-free interest rates. These assumptions reflect our best estimates, but these items involve uncertainties based on market conditions generally outside of our control. As a result, if other assumptions had been used in the current period, stock-based compensation expense could have been materially impacted. Furthermore, if management uses different assumptions in future periods, stock-based compensation expense could be materially impacted in future years.

On occasion, the Company may issue to consultants either options or warrants to purchase shares of common stock of the Company at specified share prices. These options or warrants may vest based upon specific services being performed or performance criteria being met. In accounting for equity instruments that are issued to other than employees for acquiring, or in conjunction with selling, goods or services, the Company is required to record consulting expenses based upon the fair value of such options or warrants on the earlier of the service period or the period that such options or warrants vest as determined using a Black-Scholes option pricing model and are marked to market quarterly using the Black-Scholes option valuation model.

Results of Operations

Overview

The majority of the Company's fee income comes from the activities of several licensees participating in the automotive market. The Company currently believes that the automotive market will be the largest source of its royalty income over the next several years. The Company's royalty income from this market may be influenced by numerous factors including various trends affecting demand in the automotive industry and the rate of introduction of new technology in OEM product lines and the impact of COVID-19. In addition to these macro factors, the Company's royalty income from the automotive market could also be influenced by specific factors such as whether the Company's SPD-SmartGlass technology appears as standard equipment or as an option on a particular vehicle, the number of additional vehicle models that SPD-SmartGlass appears on, the size of each window on a vehicle and the number of windows on a vehicle that use SPD-SmartGlass, fluctuations in the total number of vehicles produced by a manufacturer, and in the percentage of cars within model like produced with SPD-SmartGlass, and changes in pricing or exchange rates. Certain license fees, which are paid to the Company in advance of the accounting period in which they are earned resulting in the recognition of deferred revenue for the current accounting period, which will be recognized as fee income in future periods. Also, licensees offset some or all of their royalty payments on sales of licensed products for a given period by applying these advance payments towards such earned royalty payments.

In 2023 and 2022, the Company received royalty revenues from sales of SPD-SmartGlass products for various car models that were accretive to the Company's royalty revenue. Production efficiencies are expected to continue and accelerate with the introduction of the higher vehicle production volumes for various car models going forward, and the Company expects that lower pricing per square foot of the Company's technology could expand the market opportunities, adoption rates, and revenues for its technology in automotive and non-automotive applications. The Company expects to generate additional royalty income from the near-term introduction of additional new car and aircraft models from other OEMs (original equipment manufacturers), continued growth of sales of products using the Company's technology for the marine industry in yachts and other watercraft, in trains, in museums, and in larger architectural projects.

Because the Company's license agreements typically provide for the payment of royalties by a licensee on product sales within 45 days after the end of the quarter in which a sale of a licensed product occurs (with some of the Company's more recent license agreements providing for payments on a monthly basis), and because of the time period which typically will elapse between a customer order and the sale of the licensed product and installation in a home, office building, automobile, aircraft, boat or any other product, there could be a delay between when economic activity between a licensee and its customer occurs and when the Company gets paid its royalty resulting from such activity.

Year ended December 31, 2023 Compared to the Year ended December 31, 2022

The Company's fee income from licensing activities for the year ended December 31, 2023 was $909,598 compared to $539,686 for the year ended December 31, 2022. This increase in fee income in 2023 by $369,912, an increase of 69%, was primarily the result of higher royalties from the automotive markets, an increase by 178%, as compared to 2022. The Company expects revenue in all market segments to increase further as new car models and other products using the Company's SPD-SmartGlass technology are introduced into the market.

Operating expenses decreased by $196,055 for the year ended December 31, 2023 to $2,359,634 from $2,555,689 for the year ended December 31, 2022. The decrease is the result of lower compensation and related costs ($65,000), as well as lower patent ($56,000), lower bad debts ($47,000), lower director costs ($37,000) and lower investor relations costs ($18,000) partially offset by higher legal and professional fees ($30,000). Operating expenses for the years ended December 31, 2023 and 2022 include $137,000 and $216,000, respectively, of non-cash charges for options granted to employees and directors.

Research and development expenditures decreased by $25,861 for the year ended December 31, 2023 to $583,266 from $609,127 for the year ended December 31, 2022. This decrease was the result of lower allocated facility costs ($22,000) as well as lower compensation and related costs ($20,000) partially offset by higher materials costs ($12,000) and higher allocated insurance costs ($5,000). Research and development costs include non-cash charges for options granted to employees of $8,000 and $16,000 in 2023 and 2022, respectively.

The Company's net investment income for the year ended December 31, 2023 was $124,938 as compared to a net investment loss of $44,219 for the year ended December 31, 2022. This difference was primarily due to changes in market values of a marketable security and higher interest rates paid on investments.

No income tax benefit or expense was recorded for the years ended December 31, 2023 and 2022.

As a consequence of the factors discussed above, the Company's net loss was $1,908,364 ($0.06 per common share) for the year ended December 31, 2023, which was $760,985 (29%) lower than the net loss of $2,669,349 ($0.08 per common share) for the year ended December 31, 2022.

Financial Condition, Liquidity and Capital Resources

The Company has primarily utilized its cash, cash equivalents, marketable securities, and proceeds from sales of our common stock, proceeds from the exercise of options and warrants, and royalty fees collected to fund its research and development, for marketing initiatives, and for other working capital purposes. The Company's working capital and capital requirements depend upon numerous factors, including, but not limited to, the results of research and development activities, competitive and technological developments, the timing and costs of patent filings, and the development of new licensees and changes in the Company's relationship with existing licensees. The degree of dependence of the Company's working capital requirements on each of the foregoing factors cannot be quantified; increased research and development activities and related costs would increase such requirements; the addition of new licensees may provide additional working capital or working capital requirements, and changes in relationships with existing licensees would have a favorable or negative impact depending upon the nature of such changes.

During 2023, the Company's cash and cash equivalents balance decreased by $1,754,958 principally as a result of cash generated from the exercise of warrants of $484,502 as well as cash generated from the sale and maturities of marketable securities of $5,491,535 offset by cash used for operations of $2,295,051 and cash used for the purchase of marketable securities of $5,434,386 and for the purchase of property and equipment of $1,558. At December 31, 2023, the Company had cash and cash equivalents of $2.5 million, working capital of $3.3 million and total shareholders' equity of $3.5 million. Our quarterly projected cash flow shortfall, based on our current operations, adjusted for any non-recurring cash expenses for the next 12 months and adjusted for additional royalties expected to be received for use of our products in new production, for the next 12 months, is approximately $200,000 to $250,000 per quarter. We may eliminate some operating expenses in the future, which will further reduce our cash flow shortfall if needed. Based on these assumptions, we currently expect to have sufficient working capital for more than the next five years of operations.

The Company expects to use its cash to fund its research and development of SPD light valves, its expanded marketing initiatives, and for other working capital purposes. The Company believes that its current cash and cash equivalents would fund its operations for more than the next five years. There can be no assurances that expenditures will not exceed the anticipated amounts or that additional financing, if required, will be available when needed or, if available, that its terms will be favorable or acceptable to the Company. The eventual success of the Company and generation of positive cash flow will be dependent upon the extent of commercialization of products using the Company's technology by the Company's licensees and payments of continuing royalties on account thereof. To date, the Company has not generated sufficient revenue from its licensees to fully fund its operations.

During 2022, the Company's cash and cash equivalents balance increased by $3,960,952 principally as a result of cash generated from the sale of common stock and warrants of $3,450,000 as well as cash generated from the sale of marketable securities of $2,694,968 partially offset by cash used for operations of $2,182,745 and cash used for the purchase of property and equipment of $1,271. At December 31, 2022, the Company had cash and cash equivalents of $4.2 million, working capital of $4.6 million and total shareholders' equity of $4.8 million.

Inflation

The Company does not believe that inflation has a significant impact on its business.

Contractual Obligations:

The Company has operating leases for certain facilities and equipment with a weighted average remaining lease term of 1.3 years as of December 31, 2023. The maturities over time of the operating lease obligations as of December 31, 2023 were as follows:

	December 31, 2023
Year 1	$ 222,000
Years 2-3	56,000
Years 4-5	-
Thereafter	-
Total lease payments	$ 278,000

See Note 8 to our Consolidated Financial Statements for further discussion of the Company's lease obligations.

Off-Balance Sheet Arrangements

The Company has no variable interest entities or other off-balance sheet obligation arrangements.

Forward Looking Statements

The information set forth in this Report and in all publicly disseminated information about the Company, including the narrative contained in "Management's Discussion and Analysis of Financial Condition and Results of Operations" above, includes "forward-looking statements" within the meaning of 21E of the Securities Exchange Act of 1934, as amended, and is subject to the safe harbor created by that section. Readers are cautioned not to place undue reliance on these forward-looking statements as they speak only as of the date hereof and are not guaranteed.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The consolidated financial statements listed in Item 15(a)(1) and (2) are included in this report beginning on page F-1.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None

ITEM 9A. CONTROLS AND PROCEDURES

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

As of the end of the period covered by this Annual Report on Form 10-K, the Company carried out an evaluation, under the supervision and with the participation of the Company's management, including the Company's Chief Executive Officer and acting interim Chief Financial Officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures pursuant to Exchange Act Rule 13a-15(e) and 15d-15(e). Based upon that evaluation, the Company's Chief Executive Officer and acting interim Chief Financial Officer concluded that the Company's disclosure controls and procedures are effective in timely alerting them to material information relating to the Company (including its consolidated subsidiary) required to be included in the Company's periodic SEC filings. Our Chief Executive Officer and acting interim Chief Financial Officer has concluded that as of December 31, 2023 our disclosure controls and procedures are designed, and are effective, to ensure that information required to be disclosed by our Company in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the commission's rules and forms, and are also effective to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and acting interim Chief Financial Officer, to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control system is designed to provide reasonable assurance to our management and Board of Directors regarding the preparation and fair presentation of published financial statements. Under the supervision and with the participation of our management, including our Chief Executive Officer and acting interim Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control-Integrated Framework, issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013), or the COSO Framework. Based on the evaluation of our disclosure controls and procedures as of December 31, 2023, our Chief Executive Officer and Acting Interim Chief Financial Officer concluded that, as of such date, our internal control over financial reporting was effective.

This Annual Report does not include an attestation report of our independent registered public accounting firm regarding internal control over financial reporting because such attestation report is not required by our independent registered public accounting firm pursuant to rules of the Securities and Exchange Commission.

Changes in Internal Control Over Financial Reporting

There were no changes to controls during the three months ended December 31, 2023 that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The Company has adopted a Code of Ethics applicable to its Chief Executive Officer, Chief Operating Officer, Treasurer and Chief Financial Officer, Vice Presidents and other employees of the Company with important roles in the financial reporting process. This Code of Ethics was adopted by the entire Board of Directors of the Company, including all of its Audit Committee members, in March 2004 in accordance with the requirements of the Sarbanes Oxley Act. The Code of Ethics is available on the Company's website at www.SmartGlass.com and was also filed as an exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2023. The Company intends to satisfy the disclosure requirement under Item 10 of Form 8-K regarding any amendment to, or waiver from, a provision of this Code of Ethics by posting such information on the website specified above.

The other information required by this Item 10 is incorporated by reference to the Company's definitive Proxy Statement to be filed with the Commission on or before April 29, 2024.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item 11 is incorporated by reference to the Company's definitive Proxy Statement to be filed with the Commission on or before April 29, 2024. Notwithstanding anything to the contrary set forth herein or in any of the Company's past or future filings with the SEC that might incorporate by reference the Company's definitive Proxy Statement, in whole or in part, the report of the compensation committee and the stock price performance graph contained in such definitive Proxy Statement shall not be incorporated by reference into this Annual Report on Form 10-K or in any other such filings.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item 12 is incorporated by reference to the Company's definitive Proxy Statement to be filed with the Commission on or before April 29, 2024.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by this Item 13 is incorporated by reference to the Company's definitive Proxy Statement to be filed with the Commission on or before April 29, 2024.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Our independent registered public accounting firm is CohnReznick LLP, Melville, NY, Auditor Firm ID No: 596. The information required by this Item 14 is incorporated by reference to the Company's definitive Proxy Statement to be filed with the Commission on or before April 29, 2024.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K

(a)(1) and (2) Financial Statements and Financial Statement Schedules

The following consolidated financial statements of Research Frontiers Incorporated are filed under "Item 8. Financial Statements and Supplemental Data" of this Report.

All other schedules have been omitted because they are not applicable, or not required, or the required information is disclosed elsewhere in this Annual Report.

(a)(3)	Exhibits
3.1	Restated Certificate of Incorporation of the Company. Previously filed as Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 1994, and incorporated herein by reference.
3.2	Amended and Restated Bylaws of the Company. Previously filed as Exhibit 99.2 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2007, and incorporated herein by reference.
4.1	Form of Common Stock Certificate. Previously filed as an Exhibit to the Company's Registration Statement on Form S-18 (Reg. No. 33-5573NY), declared effective by the Commission on July 8, 1986, and incorporated herein by reference.
4.2	Rights Agreement dated as of February 18, 2003 between Research Frontiers Incorporated and Continental Stock Transfer & Trust Company, as Rights Agent, which includes as Exhibit A thereto the Form of Rights Certificate. Previously filed as an Exhibit to the Company's Registration Statement on Form 8-A dated February 13, 2013, and incorporated herein by reference.
10.1A*	Employment Agreement effective as of January 1, 2009 between the Company and Joseph M. Harary. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated April 30, 2009 and incorporated herein by reference.
10.1B*	Amendment to Employment Agreement effective as of June 12, 2014 between the Company and Joseph M. Harary. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated June 13, 2014 and incorporated herein by reference.
10.1B*	Amendment to Employment Agreement effective as of September 26, 2019 between the Company and Joseph M. Harary. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated September 26, 2019 and incorporated herein by reference.
10.1C*	Employment Agreement effective as of January 1, 2014 between the Company and Seth L. Van Voorhees Previously filed as an Exhibit to the Company's Current Report on Form 10-K dated December 31, 2013 and incorporated herein by reference.
10.2*	Amended and Restated 1992 Stock Option Plan. Previously filed as Exhibit 4 to the Company's Registration Statement on Form S-8 (Reg. No. 33-86910) filed with the Commission on November 30, 1994, and incorporated herein by reference.
10.3*	1998 Stock Option Plan, as amended. Previously filed as an Exhibit to the Company's Definitive Proxy Statement dated April 30, 1998 filed with the Commission on April 29, 1998, 1994, and incorporated herein by reference.
10.31*	2008 Equity Incentive Plan. Previously filed as an Exhibit to the Company's Definitive Proxy Statement dated April 30, 2008 filed with the Commission on April 29, 2008, and incorporated herein by reference.
10.32*	2019 Equity Incentive Plan. Previously filed as an Exhibit to the Company's Definitive Proxy Statement dated April 29, 2019 filed with the Commission on April 29, 2019, and incorporated herein by reference.
10.4*	Form of Stock Option Agreement between the Company and recipients of stock options issued pursuant to the Company's Stock Option Plans. Previously filed as part of Exhibits 4.1, 4.2, and 4.3 to the Company's Registration Statement on Form S-8 (Reg. No. 33-53030) filed with the Commission on October 6, 1992, and incorporated herein by reference.
10.5	Lease Agreement dated November 7, 1986, between the Company and Industrial & Research Associates Co. Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1986 and incorporated herein by reference.

10.5.1 First Amendment to Lease dated November 26, 1991 between the Company and Industrial and Research Associates Co. Previously filed as an Exhibit to Amendment No. 1 to the Company's Registration Statement on Form S-1 (Reg. No. 33-43768) declared effective by the Commission on December 17, 1991, and incorporated herein by reference.

10.5.2 Second Amendment to Lease dated March 11, 1994 between the Company and Industrial and Research Associates Co. Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1993 and incorporated herein by reference.

10.5.3 Third Amendment to Lease dated July 14, 1998 between the Company and Industrial and Research Associates Co. Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1998 and incorporated herein by reference.

10.5.4 Fourth Amendment to Lease dated January 13, 2004 between the Company and Industrial and Research Associates Co. Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003 and incorporated herein by reference.

10.5.5 Fifth Amendment to Lease dated February 21, 2014 between the Company and CLK-HP 230-240 CROSSWAYS PARK LLC and LAKE PARK 230-240 CROSSWAYS PARK LLC. Previously filed as an exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2013 and incorporated herein by reference.

10.6 License Agreement effective as of August 2, 1995 between the Company and General Electric Company. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated August 2, 1995 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.7 License Agreement effective as of April 29, 1996 between the Company and Glaverbel, S.A. Previously filed as an Exhibit to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 1996 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.8 License Agreement effective as of January 18, 1997 between the Company and Material Sciences Corporation. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated March 3, 1997 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.9 License Agreement effective as of March 31, 1997 between the Company and Hankuk Glass Industries, Inc. Previously filed as an Exhibit to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 1997 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.10 License Agreement effective as of August 8, 1997 between the Company and Orcolite, a Unit of Monsanto Company. Previously filed as an Exhibit to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 1997 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.11 License Agreement effective as of June 25, 1999 between the Company and Dainippon Ink and Chemicals, Incorporated. Previously filed as an Exhibit to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 1999 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.12 License Agreement effective as of August 9, 1999 between the Company and Hitachi Chemical Co., Ltd. Previously filed as an Exhibit to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 1999 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.13 License Agreement effective as of December 3, 1999 between the Company and Global Mirror GmbH & Co. KG. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1999 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.14 License Agreement effective as of December 13, 1999 between the Company and Global Mirror GmbH & Co. KG. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1999 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.15 License Agreement effective as of March 21, 2000 between the Company and ThermoView Industries, Inc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1999 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.16 License Agreement effective as of May 23, 2000 between the Company and Polaroid Corporation. Previously filed as an Exhibit to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2000 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.17 License Agreement effective as of February 16, 2001 between the Company and AP Technoglass Co. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.18 License Agreement effective as of March 21, 2001 between the Company and InspecTech Aero Service, Inc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.19 License Agreement effective as of March 28, 2001 between the Company and Film Technologies International, Inc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.20 License Agreement effective as of November 29, 2001 between the Company and Avery Dennison Corporation. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.21 License Agreement effective as of February 4, 2002 between the Company and BOS GmbH & Co. KG. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.22 License Agreement effective as of March 11, 2002 between the Company and Isoclima S.p.A. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.23 License Agreement effective as of July 2, 2002 between the Company and Isoclima S.p.A. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.24 License Agreement effective as of August 19, 2002 between the Company and Razor's Edge Technologies, Inc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.25 License Agreement effective as of October 7, 2002 between the Company and American Glass Products (Glass Technology Investment Ltd.). Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.26 License Agreement effective as of October 7, 2002 between the Company and SPD Systems, Inc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.27 License Agreement effective as of October 24, 2002 between the Company and CricursaCristalesCurvados S.A. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.28 License Agreement effective as of December 9, 2002 between the Company and BRG Group, Ltd. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.29 License Agreement effective as of December 13, 2002 between the Company and Laminated Technologies Inc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.30 License Agreement effective as of April 17, 2003 between the Company and Custom Glass Corporation. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2003 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.31 License Agreement effective as of May 2, 2003 between the Company and Air Products and Chemicals, Inc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2003 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.32 License Agreement effective as of May 30, 2003 between the Company and Kerros Limited. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2003 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.33 License Agreement effective as of June 6, 2003 between the Company and Traco, Inc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2003 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.34 License Agreement effective as of June 16, 2003 between the Company and Saint-Gobain Glass France S.A. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2003 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.35 License Agreement effective as of August 1, 2003 between the Company and Vision (Environmental Innovation) Limited. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2003 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.36 License Agreement effective as of November 13, 2003 between the Company and Innovative Glass Corporation. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2003 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.37 License Agreement effective as of December 11, 2003 between the Company and Leminur Limited. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2003 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.38 License Agreement effective as of March 25, 2004 between the Company and Pilkington plc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.39 License Agreement effective as of April 5, 2004 between the Company and SmartGlass Ireland Ltd. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.40 License Agreement effective as of April 8, 2004 between the Company and Prelco Inc. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.41 License Agreement effective as of April 13, 2004 between the Company and E. I. Dupont De Nemours and Company. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.42 License Agreement effective as of September 3, 2004 between the Company and Nippon Sheet Glass Co., Ltd. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.43 License Agreement effective as of October 25, 2005 between the Company and SPD Control Systems Corporation. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated October 31, 2005 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.44 License Agreement effective as of March 30, 2006 between the Company and Dainippon Ink and Chemicals. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated April 4, 2006 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.45 License Agreement effective as of May 11, 2006 between the Company and Asahi Glass Company. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated May 15, 2006 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.46 License Agreement effective as of March 19, 2007 between the Company and SmartGlass International Ltd. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated March 19, 2007 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.47 License Agreement effective as of October 16, 2007 between Research Frontiers Incorporated and Glass Wholesalers, Ltd. d/b/a Craftsman Fabricated Glass, Ltd. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated October 18, 2007 and incorporated herein by reference.

10.48 License Agreement effective as of December 14, 2007 between Research Frontiers Incorporated and AGC Flat Glass Europe SA. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated December 17, 2007 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.49 License Agreement effective as of February 21, 2008 between Research Frontiers Incorporated and GKN Aerospace Transparency Systems Inc. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated March 5, 2008 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.50 License Agreement effective as of September 29, 2008 between Research Frontiers Incorporated and PPG Industries, Inc. (now known as Pittsburgh Glass Works, LLC). Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated October 6, 2008 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.51 License Agreement effective as of September 10, 2009 between Research Frontiers Incorporated and Pilkington Group Ltd. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated September 15, 2009 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.52 License Agreement effective as of January 25, 2010 between Research Frontiers Incorporated and Vision Systems. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated January 25, 2010 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.

10.53	License Agreement effective as of February 8, 2010 between Research Frontiers Incorporated and ID Research Pty Ltd. (iGlass). Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated February 16, 2010 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.
10.54	License Agreement effective as of December 13, 2010 between Research Frontiers Incorporated and Diamond Sea-Glaze Manufacturing Ltd. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated December 14, 2010 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.
10.55	License Agreement effective as of December 22, 2010 between Daimler AG, Research Frontiers Incorporated and SPD Control Systems Corp. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated February 9, 2011 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.
10.56	License Agreement effective as of February 19, 2013 between Tint-It JSC and Research Frontiers Incorporated. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated March 5, 2013 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.
10.57	License Agreement effective as of August 6, 2012 between Advnanotech LLC and Research Frontiers Incorporated. Previously filed as an Exhibit to the Company's Current Report on Form 8-K dated March 12, 2013 with portions omitted pursuant to the Registrant's request for confidential treatment and filed separately with the Securities and Exchange Commission and incorporated herein by reference.
14	Code of Ethics of Research Frontiers Incorporated. Previously filed as an Exhibit to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003 and incorporated herein by reference.
21	Subsidiary of the Registrant - SPD Enterprises, Inc.
23.1	Consent of CohnReznick LLP - Filed herewith.
31.1	Rule 13a-14(a)/15d-14(a) Certification of Joseph M. Harary - Filed herewith.
32.1	Section 1350 Certification of Joseph M. Harary - Filed herewith.
EX-101.INS	Inline XBRL INSTANCE DOCUMENT
EX-101.SCH	Inline XBRL TAXONOMY EXTENSION SCHEMA
EX-101.PRE	Inline XBRL TAXONOMY EXTENSION PRESENTATION LINKBASE
EX-101.LAB	Inline XBRL TAXONOMY EXTENSION LABEL LINKBASE
EX-101.CAL	Inline XBRL TAXONOMY EXTENSION CALCULATION LINKBASE
EX-101.DEF	Inline XBRL TAXONOMY EXTENSION DEFINITION LINKBASE
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Executive Compensation Plan or Arrangement.

ITEM 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

RESEARCH FRONTIERS INCORPORATED
(Registrant)

/s/ Joseph M. Harary
Joseph M. Harary, President, CEO and Acting Interim CFO
(Principal Executive Officer and Principal Financial and Accounting Officer)

Dated: March 7, 2024

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Position	Date
/s/ Darryl Daigle Darryl Daigle	Director	March 7, 2024
/s/ Joseph M. Harary Joseph M. Harary	Director, President, CEO and Acting Interim CFO	March 7, 2024
/s/ Alexander Kaganowicz Alexander Kaganowicz	Director	March 7, 2024
/s/ Eyal Peso Eyal Peso	Director	March 7, 2024

Report of Independent Registered Public Accounting Firm

Board of Directors and Shareholders
Research Frontiers Incorporated

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Research Frontiers Incorporated and subsidiary (the "Company") as of December 31, 2023 and 2022, and the related consolidated statements of operations, shareholders' equity, and cash flows for each of the two years in the period ended December 31, 2023, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2023, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the entity's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

Critical audit matters are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. We determined that there are no critical audit matters.

/s/ CohnReznick LLP

We have served as Research Frontiers Incorporated's auditor since 2019.

Melville, New York
March 7, 2024

RESEARCH FRONTIERS INCORPORATED
Consolidated Balance Sheets
December 31, 2023 and 2022

	December 31, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 2,475,958	$ 4,230,916
Royalties receivable, net of reserves of $1,253,450 in 2023 and $1,158,450 in 2022	1,003,404	589,599
Prepaid expenses and other current assets	96,784	100,973
Total current assets	3,576,146	4,921,488
Fixed assets, net	39,598	65,388
Operating lease ROU assets	178,715	323,509
Deposits and other assets	56,066	56,066
Total assets	$ 3,850,525	$ 5,366,451
Liabilities and Shareholders' Equity		
Current liabilities:		
Current portion of operating lease liability	$ 212,359	$ 196,405
Accounts payable	50,880	71,079
Accrued expenses and other	14,192	34,379
Total current liabilities	277,431	301,863
Operating lease liability, net of current portion	55,363	267,723
Total liabilities	332,794	569,586
Shareholders' equity:		
Common stock, par value $0.0001 per share; authorized 100,000,000 shares, issued and outstanding 33,509,287 in 2023 and 33,150,396 in 2022	3,351	3,315
Additional paid-in capital	127,779,221	127,150,027
Accumulated deficit	(124,264,841)	(122,356,477)
Total shareholders' equity	3,517,731	4,796,865
Total liabilities and shareholders' equity	$ 3,850,525	$ 5,366,451

See accompanying notes to consolidated financial statements.

RESEARCH FRONTIERS INCORPORATED
Consolidated Statements of Operations
Years ended December 31, 2023 and 2022

	2023	2022
Fee income	$ 909,598	$ 539,686
Operating expenses	2,359,634	2,555,689
Research and development	583,266	609,127
Total expenses	2,942,900	3,164,816
Operating loss	(2,033,302)	(2,625,130)
Net investment income (loss)	124,938	(44,219)
Net loss	$ (1,908,364)	$ (2,669,349)
Basic and diluted net loss per common share	$ (0.06)	$ (0.08)
Weighted average number of common shares outstanding	33,453,627	32,070,233

See accompanying notes to consolidated financial statements.

RESEARCH FRONTIERS INCORPORATED
Consolidated Statements of Shareholders' Equity
Years ended December 31, 2023 and 2022

	Common Stock		Additional Paid-in	Accumulated	
	Shares	Amount	Capital	Deficit	Total
Balance, December 31, 2021	31,650,396	$ 3,165	$ 123,467,886	$ (119,687,128)	$ 3,783,923
Share-based compensation	-	-	232,291	-	232,291
Issuance of common stock and warrants	1,500,000	150	3,449,850	-	3,450,000
Net loss	-	-	-	(2,669,349)	(2,669,349)
Balance, December 31, 2022	33,150,396	3,315	127,150,027	(122,356,477)	4,796,865
Exercise of warrants	358,891	36	484,466	-	484,502
Share-based compensation	-	-	144,728	-	144,728
Net loss	-	-	-	(1,908,364)	(1,908,364)
Balance, December 31, 2023	33,509,287	$ 3,351	$ 127,779,221	$ (124,264,841)	$ 3,517,731

See accompanying notes to consolidated financial statements.

RESEARCH FRONTIERS INCORPORATED
Consolidated Statements of Cash Flows
Years ended December 31, 2023 and 2022

	2023	2022
Cash flows from operating activities:		
Net loss	$ (1,908,364)	$ (2,669,349)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	27,348	28,837
Realized (gain) loss on marketable securities	(57,149)	60,143
Share-based compensation	144,728	232,291
Bad debts	95,000	141,772
ROU asset amortization	144,794	146,315
Change in assets and liabilities:		
Royalty receivables	(508,805)	100,266
Prepaid expenses and other assets	4,189	(30,542)
Accounts payable and accrued expenses	(40,386)	(10,387)
Operating lease liability	(196,406)	(182,091)
Net cash used in operating activities	(2,295,051)	(2,182,745)
Cash flows from investing activities:		
Purchases of fixed assets	(1,558)	(1,271)
Purchases of marketable securities	(5,434,386)	-
Sales and maturities of marketable securities	5,491,535	2,694,968
Net cash provided by investing activities	55,591	2,693,697
Cash flows from financing activities:		
Net proceeds from exercise of warrants	484,502	-
Proceeds from issuance of common stock and warrants	-	3,450,000
Net cash provided by financing activities	484,502	3,450,000
Net (decrease) increase in cash and cash equivalents	(1,754,958)	3,960,952
Cash and cash equivalents at beginning of year	4,230,916	269,964
Cash and cash equivalents at end of year	$ 2,475,958	$ 4,230,916

See accompanying notes to consolidated financial statements

(1) Business and Basis for Presentation

Research Frontiers Incorporated ("Research Frontiers" or the "Company") operates in a single business segment which is engaged in the development and marketing of technology and devices to control the flow of light. Such devices, often referred to as "light valves" or suspended particle devices ("SPDs"), use colloidal particles that are either incorporated within a liquid suspension or a film, which is usually enclosed between two sheets of glass or plastic having transparent, electrically conductive coatings on the facing surfaces thereof. At least one of the two sheets is transparent. SPD technology, made possible by a flexible light-control film invented by Research Frontiers, allows the user to instantly and precisely control the shading of glass/plastic manually or automatically. SPD technology has numerous product applications, including SPD-Smart™ windows, sunshades, skylights and interior partitions for homes and buildings; automotive windows, sunroofs, sun visors, sunshades, rear-view mirrors, instrument panels, heads up displays and navigation systems; aircraft windows; museum display panels; eyewear products; and flat panel displays for electronic products. SPD-Smart light control film is now being developed for, or used in, architectural, automotive, marine, aerospace and appliance applications.

The Company has primarily utilized its cash, cash equivalents, and investments generated from sales of our common stock, proceeds from the exercise of options and warrants, and royalty fees collected to fund its research and development of SPD light valves, for marketing initiatives, and for other working capital purposes. The Company's working capital and capital requirements depend upon numerous factors, including the results of research and development activities, competitive and technological developments, the timing and cost of patent filings, and the development of new licensees and changes in the Company's relationships with its existing licensees. The degree of dependence of the Company's working capital requirements on each of the foregoing factors cannot be quantified; increased research and development activities and related costs would increase such requirements; the addition of new licensees may provide additional working capital or working capital requirements, and changes in relationships with existing licensees would have a favorable or negative impact depending upon the nature of such changes. We have incurred recurring losses since inception and expect to continue to incur losses as a result of costs and expenses related to our research and continued development of our SPD technology and our corporate general and administrative expenses. Our limited capital resources and operations to date have been substantially funded through sales of our common stock, exercise of options and warrants and royalty fees collected. As of December 31, 2023, we had working capital of approximately $3.3 million, cash and cash equivalents of approximately $2.5 million, shareholders' equity of approximately $3.5 million and an accumulated deficit of approximately $124.3 million. Our quarterly projected cash flow shortfall, based on our current operations, adjusted for any non-recurring cash expenses and adjusted for additional royalties expected to be received for use of our products in new production, for the next 12 months, is approximately $200,000 to $250,000 per quarter. We may eliminate some operating expenses in the future, which will further reduce our cash flow shortfall if needed. Based on these assumptions, we currently expect to have sufficient working capital for at least 12 months from the issuance of these financial statements.

In the event that we are unable to generate sufficient cash from our operating activities or raise additional funds, we may be required to delay, reduce or severely curtail our operations or otherwise impede our on-going business efforts, which could have a material adverse effect on our business, operating results, financial condition and long-term prospects. The Company may seek to obtain additional funding through future equity issuances. There can be no assurance as to the availability or terms upon which such financing and capital might be available. The eventual success of the Company and generation of positive cash flow will be dependent upon the commercialization of products using the Company's technology by the Company's licensees and payments of continuing royalties on account thereof. To date, the Company has not generated sufficient revenue from its licensees to fund its operations.

(2) Summary of Significant Accounting Policies

(a) Cash and Cash Equivalents

The Company considers securities purchased with original maturities of three months or less to be cash equivalents. Cash equivalents consist of short-term investments in money market accounts at December 31, 2023 and 2022.

Cash and cash equivalents are maintained at financial institutions and, at times, balances may exceed federally insured limits. We have never experienced any losses related to these balances. FDIC insurance coverage is $250,000 per depositor at each financial institution, and our non-interest bearing cash balances may again exceed federally insured limits. Amounts on deposit in excess of federally insured limits at December 31, 2023 and 2022 are approximately $1.2 million and $2.7 million, respectively.

(b) Marketable Securities

The Company classifies investments in marketable securities as trading, available-for-sale or held-to-maturity at the time of purchase and periodically re-evaluates such classification. Trading securities are carried at fair value, with unrealized holding gains and losses included in earnings. Held-to-maturity securities are recorded at cost and are adjusted for the amortization or accretion of premiums or discounts over the life of the related security. Unrealized holding gains and losses of available-for-sale securities are excluded from earnings and are reported as a separate component of accumulated other comprehensive income (loss) until realized. In determining realized gains and losses, the cost of the securities sold is based on the specific identification method. Interest and dividends on the investments are accrued at the balance sheet date.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (i.e., the “exit price”) in an orderly transaction between market participants at the measurement date. Fair value measurements are broken down into three levels based on the reliability of inputs as follows: Level 1 inputs are quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date. An active market for the asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 2 inputs include quoted prices for similar assets or liabilities in active markets, inputs other than quoted prices that are observable for the asset or liability (e.g., interest rates and yield curves observable at commonly quoted intervals or current market) and contractual prices for the underlying financial instrument, as well as other relevant economic measures. Level 3 inputs are unobservable inputs for the asset or liability. Unobservable inputs are used to measure fair value to the extent that observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date.

At December 31, 2023 and 2022, the Company invested only in investments qualified as cash and cash equivalents. During the years ended December 31, 2023 and 2022, the Company incurred a realized gain (loss) on the sale and maturities of marketable securities of $57,149 and $(60,143), respectively.

(c) Royalties Receivable

Royalties receivable from licensees are recorded at the amounts specified within the license agreements when the collectability of the receivable is reasonably assured. The allowance for doubtful accounts is the Company’s best estimate of the amount of probable credit losses in the Company’s existing royalties receivable. The Company determines the allowance based on historical write-off experience as well as the current status of the Company’s customers. The Company reviews its allowance for doubtful accounts periodically. Past due accounts are reviewed individually for collectability. Account balances are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote. As of December 31, 2023, three companies accounted for 17%, 12% and 10% of the Company’s outstanding receivables. As of December 31, 2022, one company accounted for 14% of the Company’s outstanding receivables.

(d) Fixed Assets

Fixed assets are carried at cost less accumulated depreciation and amortization. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the assets.

(e) Revenue Recognition/Fee Income

The Company recognizes revenue in accordance with ASC 606, Revenue from Contracts with Customers ("ASC 606"). The standard provides a single comprehensive revenue recognition model for all contracts with customers and supersedes existing revenue recognition guidance. The revenue standard contains principles that an entity will apply to determine the measurement of revenue and timing of when it is recognized. The underlying principle is that an entity will recognize revenue to depict the transfer of goods or services to customers at an amount that the entity expects to be entitled to in exchange for those goods or services.

ASC 606 follows a five-step approach to determining revenue recognition including: 1) Identification of the contract; 2) Identification of the performance obligations; 3) Determination of the transaction price; 4) Allocation of the transaction price; and 5) Recognition of revenue.

The Company determined that its license agreements provide for three performance obligations which include: (i) the Grant of Use to its Patent Portfolio ("Grant of Use"), (ii) Stand-Ready Technical Support ("Technical Support") including the transfer of trade secrets and other know-how, production of materials, scale-up support, analytical testing, etc., and (iii) access to new Intellectual Property ("IP") that may be developed sometime during the course of the contract period ("New Improvements"). Given the nature of IP development, such New Improvements are on an unspecified basis and can occur and be made available to licensees at any time during the contract period.

When a contract includes more than one performance obligation, the Company needs to allocate the total consideration to each performance obligation based on its relative standalone selling price or estimate the standalone selling price if it is not observable. A standalone selling price is not available for our performance obligations since we do not sell any of the services separately and there is no competitor pricing that is available. As a consequence, the best method for determining standalone selling price of our Grant of Use performance obligation is through a comparison of the average royalty rate for comparable license agreements as compared to our license agreements. Comparable license agreements must consider several factors including: (i) the materials that are being licensed, (ii) the market application for the licensed materials, and (iii) the financial terms in the license agreements that can increase or decrease the risk/reward nature of the agreement.

Based on the royalty rate comparison referred to above, any pricing above and beyond the average royalty rate would relate to the Technical Support and New Improvements performance obligations. The Company focuses a significant portion of its time and resources to provide the Technical Support and New Improvements services to its licensees, which further supports the conclusions reached using the royalty rate analysis.

The Technical Support and New Improvements performance obligations are co-terminus over the term of the license agreement. For purposes of determining the transaction price, and recognizing revenue, the Company combined the Technical Support and New Improvements performance obligations because they have the same pattern of transfer and the same term. We maintain a staff of scientists and other professionals whose primary job responsibilities throughout the year are: (i) being available to respond to Technical Support needs of our licensees, and (ii) developing improvements to our technology which are offered to our licensees as New Improvements. Since the costs incurred to satisfy the Technical Support and New Improvements performance obligations are incurred evenly throughout the year, the value of the Technical Support and New Improvements services are recognized throughout the initial contract period as these performance obligations are satisfied. If the agreement is not terminated at the end of the initial contract period, it will renew on the same terms as the initial contract for a one-year period. Consequently, any fees or minimum annual royalty obligations relating to this renewal contract will be allocated similarly to the initial contract over the additional one-year period.

We recognize revenue when or as the performance obligations in the contract are satisfied. For performance obligations that are fulfilled at a point in time, revenue is recognized at the fulfillment of the performance obligation. Since the IP is determined to be a functional license, the value of the Grant of Use is recognized in the first period of the contract term in which the license agreement is in force. The value of the Technical Support and New Improvements obligations is allocated throughout the contract period based on the satisfaction of its performance obligations. If the agreement is not terminated at the end of the contract period, it will renew on the same terms as the original agreement for a one-year period. Consequently, any fees or minimum annual royalties ("MAR") relating to this renewal contract will be allocated similarly over that additional year.

The Company's license agreements have a variable royalty fee structure (meaning that royalties are a fixed percentage of sales that vary from period to period) and frequently include a minimum annual royalty commitment. In instances when sales of licensed products by its licensees exceed the MAR, the Company recognizes fee income as the amounts have been earned. Typically, the royalty rate for such sales is 10-15% of the selling price. While this is variable consideration, it is subject to the sales/usage royalty exception to recognition of variable consideration in ASC 606 10-55-65 and therefore is not recognized until the subsequent sales or usage occurs or the MAR period commences.

Because of the immediate recognition of the Grant of Use performance obligation: (i) the first period of the contract term will generally have a higher percent allocation of the transaction price under ASC 606 and (ii) the remaining periods will have less of the transaction price recognized under ASC 606. After the initial period in the contract term, the revenue for the remaining periods will be based on the satisfaction of the technical support and New Improvements obligations. Since most of our license agreements start as of January 1st, the revenue recognized for the contract under ASC 606 in our first quarter will tend to be higher subsequent quarters in the fiscal year.

Certain of the contract fees are accrued by, or paid to, the Company in advance of the period in which they are earned resulting in deferred revenue. Such excess amounts are recorded as deferred revenue and are recognized as revenue in future periods as earned.

The Company operates in a single business segment which is engaged in the development and marketing of technology and devices to control the flow of light. Our revenue source comes from the licensing of this technology and all of these license agreements have similar terms and provisions. The majority of the Company's licensing fee income comes from the activities of several licensees participating in the automotive market. The Company currently believes that the automotive market will be the largest source of its royalty income over the next several years. The Company's royalty income from this market may be influenced by numerous factors including various trends affecting demand in the automotive industry and the rate of introduction of new technology in OEM product lines. In addition to these macro factors, the Company's royalty income from the automotive market could also be influenced by specific factors such as whether the Company's SPD-SmartGlass technology appears as standard equipment or as an option on a particular vehicle, the number of additional vehicle models that SPD-SmartGlass appears on, the size of each window on a vehicle and the number of windows on a vehicle that use SPD SmartGlass, fluctuations in the total number of vehicles produced by a manufacturer, and in the percentage of cars within each model produced with SPD-SmartGlass, and changes in pricing or exchange rates.

As of December 31, 2023, the Company has one license agreement that are in its initial multiyear term ("Initial Term") with continuing performance obligations going forward. The Initial Term of this agreement will end as of December 31, 2024, The Company currently expects this agreement will renew annually at the end of the Initial Term. As of December 31, 2023, the aggregate amount of the revenue to be recognized upon the satisfaction of the remaining performance obligations for this license agreements is $100,000. The revenue for these remaining performance obligations for each of the three license agreements is expected to be recognized evenly throughout their remaining period of the Initial Term.

Over the years, the Company has entered into a number of license agreements covering its light control technology. The Company received minimum annual royalties under certain license agreements and recorded fee income based on ASC 606 revenue recognition each quarter. In instances when sales of licensed products by its licensees exceed minimum annual royalties, the Company recognized additional fee income as the amounts have been earned. Certain of the fees are accrued by, or paid to, the Company in advance of the period in which they are earned resulting in deferred revenue. Such excess amounts are recorded as deferred revenue and are typically recognized as fee income when earned. As of December 31, 2023 and 2022, there was no balance in deferred revenue.

Fee income represents amounts earned by the Company under various license and other agreements relating to technology developed by the Company. During 2023, four licensees accounted for 39%, 16%, 16% and 13% of fee income recognized during the year. During 2022, four licensees accounted for 28%, 23%, 13% and 11% of fee income recognized during the year.

(f) Basic and Diluted Loss Per Common Share

Basic loss per share excludes any dilution. It is based upon the weighted average number of common shares outstanding during the period. Dilutive loss per share reflects the potential dilution that would occur if securities or other contracts to issue common stock were exercised or converted into common stock. The Company's dilutive loss per share equals basic loss per share for each of the years in the two-year period ended December 31, 2023 because all potentially dilutive securities (i.e., options and warrants) were antidilutive in those periods. The number of options and warrants that were not included because their effect is antidilutive was 3,294,515 and 4,146,951 for 2023 and 2022, respectively.

(g) Research and Development Costs

Research and development costs are charged to expense as incurred.

(h) Patent Costs

The Company expenses costs relating to the development or acquisition of patents due to the uncertainty of the recoverability of these items.

(i) Use of Estimates

The preparation of the Company's consolidated financial statements requires management of the Company to make a number of estimates and assumptions relating to the reported amount of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during this period. Actual results could differ from those estimates.

(j) Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to be recovered or settled.

In accordance with ASC Topic 740, we recognize tax benefits only for tax positions that are more likely than not to be sustained upon examination by tax authorities. The amount recognized is measured as the largest amount of benefit that is greater than 50 percent likely to be realized upon ultimate settlement. Unrecognized tax benefits are tax benefits claimed in tax returns that do not meet these recognition and measurement standards. We classify accrued interest and penalties related to any unrecognized tax benefits in our income tax provision. At December 31, 2023 and 2022, we do not have accrued interest and penalties related to any unrecognized tax benefits. We do not believe we have any uncertain tax positions as of December 31, 2023 and 2022.

The tax years subject to examination by major tax jurisdictions include the years 2018 and forward by the U.S. Internal Revenue Service and certain states. The Company is not currently being audited by any tax jurisdiction.

(k) Share-Based Compensation

We recognize all stock-based compensation as an expense in the consolidated financial statements and such costs are measured at the fair value of the award at the date of grant. In addition to reflecting compensation expense for new share-based payment awards, expense is also recognized to reflect the remaining vesting period of awards that had been granted in prior periods. Tax benefits related to stock option exercises are reflected as financing cash inflows.

The exercise prices for stock options granted are generally set at the average for the high and low trading prices of the Company's common stock on the trading date immediately prior to the date of grant, and the related numbers of shares granted are fixed at the date of grant.

In order to determine the fair value of stock options on the date of grant, the Company uses the Black-Scholes option-pricing model. Inherent in this model are assumptions related to expected stock-price volatility, option term, risk-free interest rate and dividend yield. While the risk-free interest rate and dividend yield are less subjective assumptions that are based on factual data derived from public sources, the expected stock-price volatility and option term assumptions require a greater level of judgment.

In connection with employee and director stock options, the Company charged to compensation expense $144,728 and $232,291 during the years ended December 31, 2023 and 2022, respectively. As of December 31, 2023, these awards were fully vested. In lieu of higher cash compensation, the Company has granted warrants and non-employee options to consultants. These warrants and non-employee options vested fully on the date of grant. There were no such charges for the year ended December 31, 2023 and 2022.

(l) Restricted Stock

Compensation cost for restricted stock is measured using the quoted market price of the Company's common stock at the date the common stock is granted. The compensation cost is recognized over the period between the issue date and the vesting period for such shares. Restricted stock is included in total common shares outstanding upon the lapse of any vesting conditions.

(m) Impairment of Long-Lived Assets

The Company reviews long-lived assets to determine whether an event or change in circumstances indicates the carrying value of the asset may not be recoverable. The Company bases its evaluation on such impairment indicators as the nature of the assets, the future economic benefit of the assets and any historical or future profitability measurements, as well as other external market conditions or factors that may be present. There was no impairment of long-lived assets recorded during 2023 and 2022.

(n) Fair Value Measurements

As of December 31, 2023 and 2022, the fair value of the Company's financial assets and non-warrant liabilities including cash and cash equivalents, marketable securities, royalties receivable, accounts payable and accrued expenses approximated carrying value due to the short-term maturity of these instruments.

(o) Recent Accounting Pronouncements

New Accounting Standards

The Company believes that no new accounting standards that are not yet effective will have a material effect on the Company's consolidated financial statements.

(3) Fixed Assets

Fixed assets and their estimated useful lives as of December 31, 2023 and 2022 are as follows:

	2023	2022	Estimated useful life
Equipment and furniture	$ 1,393,923	$ 1,392,365	5 years
Trade show materials	775,654	775,654	5 years
Autos	53,764	53,764	5 years
Leasehold improvements	584,967	584,967	Life of lease or estimated life of asset if shorter
	2,808,308	2,806,750	
Less accumulated depreciation and amortization	(2,768,710)	(2,741,362)	
	$ 39,598	$ 65,388	

(4) Accrued Expenses and Other

Accrued expenses and other consist of the following at December 31, 2023 and 2022:

	2023	2022
Payroll, bonuses and related benefits	$ 9,032	$ 29,219
Professional services	4,800	4,800
Other	360	360
	$ 14,192	$ 34,379

(5) Income Taxes

Since inception, the Company has incurred losses from operations and as a result has not recorded income tax expense. Benefits related to net operating loss carryforwards and deferred items have been fully reserved because it is not more likely than not that the Company will achieve profitable operations. The difference between the total income taxes at the federal statutory rate for each of the years ended December 31, 2023 and 2022 and the fact that no income tax benefit was recorded in each of these years is attributable to the change in the valuation allowance recorded in each year.

The Tax Cuts and Jobs Act of 2017 (“TCIA”) amended IRC Section 174 to require capitalization of all research and development (“R&D”) costs incurred in tax years beginning after December 31, 2021. These costs are required to be amortized over five years if the R&D activities are performed in the U.S., or over 15 years if the activities were performed outside the U.S. For tax reporting purposes, the Company capitalized $583,000 and $609,000 of R&D expenses incurred as of December 31, 2023 and 2022, respectively.

On August 16, 2022, The Inflation Reduction Act (“IRA”) was signed into law in the United States. Among other provisions, the IRA includes a 15% corporate minimum tax rate applies to certain large corporations and a 1% excise tax on corporate stock repurchases made after December 31, 2022. We do not expect the IRA to have a material impact on our consolidated financial statements.

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets at December 31, 2023 and 2022 are presented below:

	2023	2022
Deferred tax assets:		
Depreciation	$ 110,000	$ 109,000
Allowance for bad debts	263,000	248,000
Net operating loss carry-forwards	12,939,000	13,561,000
Stock option expense	257,000	334,000
Research and other credits	834,000	891,000
Lease liability	56,000	99,000
Amortization	225,000	130,000
Other	35,000	-
Total gross deferred tax assets	14,719,000	15,372,000
Deferred tax liabilities:		
Lease liability	38,000	69,000
Total gross deferred tax liabilities	38,000	69,000
Valuation allowance	(14,681,000)	(15,303,000)
Net deferred tax	$ -	$ -

The reconciliation of the income tax expense (benefit) computed at the federal statutory tax rates to income tax expense (benefit) is as follows:

	2023	2022
Income tax provision at federal statutory rate	$ (401,000)	$ (561,000)
Expired carryforwards and other	1,023,000	1,011,000
Valuation allowance	(622,000)	(450,000)
	$ -	$ -

In assessing the realizability of deferred tax assets, the Company considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon future taxable income during the period in which those temporary differences become deductible. The Company considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Based upon its historical operating losses, utilization of deferred tax assets cannot currently be determined. Accordingly, the Company has recorded a full valuation allowance against the deferred tax assets due to the uncertainty regarding the future utilization of the deferred tax assets for all periods presented.

At December 31, 2023, the Company had net operating loss carryforwards for federal income tax purposes of approximately $64,587,000. Net operating loss carryforwards accumulated through December 31, 2017 of approximately $52,995,000 will expire in varying amounts from 2024 through 2038. Net operating losses generated since 2018, totaling approximately $11,592,000, will carry forward indefinitely, but cannot offset more than 80 percent of taxable income. Research and other credit carryforwards of approximately $904,000 are available to the Company to reduce income taxes payable in future years principally through 2041. The Company’s ability to utilize its net operating loss carryforwards and its current year tax credits in future periods could be subject to the 382 limitation. The Company will need to complete an analysis to determine whether its net operating losses are subject to the 382 limitation.

(6) Shareholders' Equity

(a) Common Stock and Warrants

On September 16, 2022, the Company entered into subscription agreements from a group of private accredited investors to sell them 2.0 million shares of common stock of the Company at a price of $2.30 per share (which represents the closing market price of the Company's common stock on September 14, 2022 which was the date that the transaction was agreed to). As of December 31, 2022, the Company received $3,450,000 under these subscription agreements and has issued 1,500,000 common shares and issued 1,500,000 warrants. In addition, the Company has an outstanding commitment from a potential investor for the remaining $1,150,000 under these subscription agreements. The Company did not sell any other equity securities during the years ended December 31, 2023 and 2022.

The shares were issued to the investors in a private placement and, along with the shares issued in connection with the exercise of any warrants in the future, are not registered and therefore currently subject to at least a six-month holding period by the investor.

(b) Options and Warrants

(i) Employee Options

In 2019, the shareholders approved the Company's 2019 Equity Incentive Plan, which provides for the granting of both incentive stock options at the fair market value at the date of grant and nonqualified stock options at the fair market value at the date of grant to employees or non-employees who, in the determination of the Board of Directors, have made or may make significant contributions to the Company in the future. The Company may also award stock appreciation rights, restricted stock, or restricted stock units under this plan. The Company initially reserved 1,400,000 shares of its common stock for issuance under this plan, and 84,500 options and other awards were available for issuance under this plan as of December 31, 2023.

At the discretion of the Board of Directors, options expire in 10 years or less from the date of grant and are generally fully exercisable upon grant but in some cases may be subject to vesting in the future. Full payment of the exercise price may be made in cash or in shares of common stock valued at the fair market value thereof on the date of exercise, or by agreeing with the Company to cancel a portion of the exercised options.

The Company granted 223,000 fully vested options during 2023 and recorded share-based compensation of $144,728. The Company granted 178,000 fully vested options during 2022 and recorded share-based compensation of $232,291. The Company valued these grants using the Black-Scholes option pricing model with the following weighted average assumptions:

	2023	2022
Fair value on grant date	$ 1.02	$ 1.31
Expected dividend yield	-	-
Expected volatility	75%	81%
Risk free interest rate	3.84%	3.99%
Expected term of the option	5 years	5 years

Activity for stock options is summarized below:

	Number of Shares Subject to Option	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Balance at January 1, 2022	1,199,710	$ 3.67	5.7	$ 21,870
Granted	178,000	$ 1.95		
Cancelled	(130,750)	$ 4.91		
Exercised	-	$ -		
Balance at December 31, 2022	1,246,960	$ 3.35	5.8	$ 67,510
Granted	223,000	$ 1.02		
Cancelled	(254,588)	$ 5.47		
Exercised	-	$ -		
Balance at December 31, 2023	1,215,372	$ 2.48	6.7	$ -

All options are exercisable at December 31, 2023.

(ii) Warrants and Non-Employee Options

Activity in warrants is summarized below:

	Number of Shares Underlying Warrants Granted	Weighted Average Exercise Price
Balance at January 1, 2022	1,399,991	$ 2.27
Exercised	-	
Terminated	-	
Issued	1,500,000	2.76
Balance at December 31, 2022	2,899,991	$ 2.52
Exercised	(358,891)	$ 1.35
Terminated	(461,957)	1.35
Issued	-	
Balance at December 31, 2023	2,079,143	$ 3.20

In lieu of cash compensation, the Company has granted warrants to investors and non-employee options to consultants. These warrants and non-employee options vested ratably over various terms ranging from 12 to 59 months. The non-employee options are valued at fair value at the time that the related services are provided using the Black-Scholes option valuation model and marked to market quarterly using the Black-Scholes option valuation model. There are 2,079,143 warrants issued to investors that are outstanding that are accounted for as equity.

Warrants and non-employee options generally expire in five years from the date of issuance. At December 31, 2023, all warrants and non-employee options outstanding were exercisable.

(c) Restricted Stock Grants

During 2023 and 2022, the Company did not issue restricted stock to its directors and employees.

(7) License and Other Agreements

The Company has entered into a number of license agreements covering various products using the Company's SPD technology. Some of these license agreements are limited to specific countries and/or markets. Licensees of Research Frontiers who incorporate SPD technology into end products pay Research Frontiers an earned royalty of 10-15% of net sales of licensed products under license agreements currently in effect and may also be required to pay Research Frontiers fees and minimum annual royalties. Licensees who sell products or components to other licensees of Research Frontiers do not pay a royalty on such sale; Research Frontiers will collect such royalty from the licensee incorporating such products or components into its own end-products. Research Frontiers' license agreements typically allow the licensee to terminate the license after some period of time and give Research Frontiers only limited rights to terminate before the license expires. Most licenses are non-exclusive and generally last as long as our patents remain in effect.

On March 14, 2019, the Company suspended its VariGuard SmartGlass business unit activities. Instead, the Company licensed a new entity to pursue the business opportunities previously pursued by the Company's VariGuard SmartGlass business unit. This new licensee continues to use the VariGuard SmartGlass name. In addition to other employees at VariGuard SmartGlass Inc., one of the Company's officers (Michael R. LaPointe) and one former officer (Seth L. Van Voorhees) are shareholders of VariGuard SmartGlass Inc. and, as consequence, this transaction is a related party relationship which has been reviewed and approved by the Company's Board of Directors pursuant to the requirements of Delaware corporate law and the Company's Code of Ethics. Mr. LaPointe also remains a full-time employee at the Company. In October 2021, the Company entered into an amendment to the license agreement with VariGuard modifying its scope and terms.

(8) Commitments

The Company has an employment agreement with its chief executive officer which provides for an annual base salary of $500,000 for calendar year 2024. This employment agreement has an evergreen provision that extends the term by one year on the expiration date unless either the Company or the employee has given notice that they will not be renewing the agreement upon the expiration of its term.

The Company has a defined contribution profit sharing (401k) plan covering employees who have completed one year of service. Contributions are made at the discretion of the Company. The Company did not make any contributions to this plan for 2023 or 2022.

The Company determines if an arrangement is a lease at its inception. This determination generally depends on whether the arrangement conveys the right to control the use of an identified fixed asset explicitly or implicitly for a period of time in exchange for consideration. Control of an underlying asset is conveyed if the Company obtains the rights to direct the use of, and to obtain substantially all of the economic benefits from the use of, the underlying asset. Lease expense for variable leases and short-term leases is recognized when the obligation is incurred.

The Company has operating leases for certain facilities, vehicles and equipment with a weighted average remaining lease term of 1.3 years as of December 31, 2023. Operating leases are included in right of use lease assets, other current liabilities and long-term lease liabilities on the consolidated balance sheet. Right of use lease assets and liabilities are recognized at each lease's commencement date based on the present value of its lease payments over its respective lease term. The Company does not have an established incremental borrowing rate as it does not have any debt. The Company uses the stated borrowing rate for a lease when readily determinable. When the interest rate implicit in its lease agreements is not readily determinable, the Company uses an interest rate based on the marketplace for public debt. The weighted average discount rate associated with operating leases as of December 31, 2023 is 5.5%.

Maturities of operating lease liabilities as of December 31, 2023 were as follows:

	December 31, 2023
Year 1	$ 222,000
Years 2-3	56,000
Years 4-5	-
Thereafter	-
Total lease payments	278,000
Less: imputed lease interest	(10,278)
Present value of lease liabilities	$ 267,722

(9) Rights Plan

In February 2013, the Company's Board of Directors adopted a Stockholders' Rights Plan (the "Rights Plan") and declared a dividend distribution of one right (a "Right") for each outstanding share of Company common stock to stockholders of record at the close of business on March 3, 2013 ("Record Time") and authorized the issuance of one Right in respect of each share of Common Stock issued after the Record Time and prior to the Separation Time. The Rights Plan was readopted and extended in December 2022 until February 11, 2033.

"Separation Time" shall mean the earlier of the Close of Business on the tenth Business Day (or such later date as the Board of Directors may from time to time fix by resolution adopted prior to the Separation Time that otherwise would have occurred) following but not including (i) the date on which any Person commences a tender or exchange offer that, if consummated, would result in such Person's becoming an Acquiring Person, and (ii) the date of the first event causing a Flip-in Date to occur; provided that if any tender or exchange offer referred to in clause (i) of this paragraph is cancelled, terminated or otherwise withdrawn prior to the Separation Time without the purchase of any shares of Common Stock pursuant thereto, such offer shall be deemed, for purposes of this paragraph, never to have been made.

Subject to certain exceptions listed in the Rights Plan, if a person or group has acquired beneficial ownership of, or commences a tender or exchange offer for, 15% or more of the Company's common stock, unless redeemed by the Company's Board of Directors, each Right entitles the holder (other than the acquiring person) to purchase from the Company $80 worth of common stock for $40. If the Company is merged into, or 50% or more of its assets or earning power is sold to, the acquiring company, the Rights will also enable the holder (other than the acquiring person) to purchase $80 worth of common stock of the acquiring company for $40. During 2022, the Company extended to expiration of The Rights to the close of business on February 11, 2033, unless the Rights Plan is extended by the Company's Board of Directors or unless the Rights are earlier redeemed by the Company at a price of $0.0001 per Right. The Rights are not exercisable during the time when they are redeemable by the Company.

The above description highlights some of the features of the Company's Rights Plan and is not a complete description of the Rights Plan. A more detailed description and copy of the Rights Plan has been filed with the SEC and is available from the Company upon request.

Note 10. Related Party

Effective June 4, 2023, the Chairman and CEO of Gauzy, Ltd., one of the Company's licensees, joined the Board of the Company. Gauzy's license agreement has been in effect since September 17, 2017 and provides for minimum annual royalties and earned royalties relating to sales of SPD-SmartGlass architectural window products. Because the Company collects a 10-15% percentage royalty from the higher-priced end product sales by Gauzy's customers purchasing their SPD-Smart light control film, under its license agreement with Gauzy, the Company does not collect a royalty on sales by Gauzy of SPD-Smart light control film to these licensee customers. In addition, the Company's licensee Vision Systems, Inc. is a 100% owned subsidiary of Gauzy, Ltd. For years ended December 31, 2023 and 2022, fee income related to Gauzy and Vision Systems represented 18% and 31%, respectively, of the Company's total fee income. In addition, as of December 31, 2023 and 2022, the Company's accounts receivable from Gauzy and Vision Systems represented 8% and 9%, respectively, of the Company's total royalty receivables, before reserves. In January 2024 these receivables were paid in full by Gauzy and Vision Systems.

EXHIBIT 21

	State or Country of Organization
Subsidiary of the Registrant:	
SPD Enterprises, Inc.	Delaware

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statements on Form S-3 (Nos. 333-184785, 333-179099, 333-133858, 333-40369, 333-115052, 333-65219 and 333-159093) and Form S-8 (Nos. 333-80575, 333-179097, 33-53030, 33-86910, 333-08623, 333-34163, 333-63374, 333-106754, 333-159094, 333-196746 and 333-237035) of Research Frontiers Incorporated of our report dated March 7, 2024, relating to the consolidated financial statements of Research Frontiers Incorporated as of December 31, 2023 and 2022, and for each of the two years in the period ended December 31, 2023, included in this Annual Report on Form 10-K of Research Frontiers Incorporated for the year ended December 31, 2023.

/s/ CohnReznick LLP

Melville, New York
March 7, 2024

EXHIBIT 31.1

CERTIFICATION

I, **Joseph M. Harary,** certify that:

1. I have reviewed this annual report on Form 10-K of Research Frontiers Incorporated (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the consolidated financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. I am responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under my supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to me by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under my supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report my conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. I have disclosed, based on my most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: March 7, 2024

/s/ Joseph M. Harary

Joseph M. Harary
President, Chief Executive Officer and Acting Interim Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Research Frontiers Incorporated (the "Company") on Form 10-K for the year ended December 31, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Joseph M. Harary, President, Chief Executive Officer, Acting Interim Chief Financial Officer and Principal Executive Officer and Principal Financial and Accounting Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Joseph M. Harary
Joseph M. Harary
President, Chief Executive Officer, Acting Interim Chief Financial Officer and Principal Executive Officer and Principal Financial and Accounting Officer

March 7, 2024