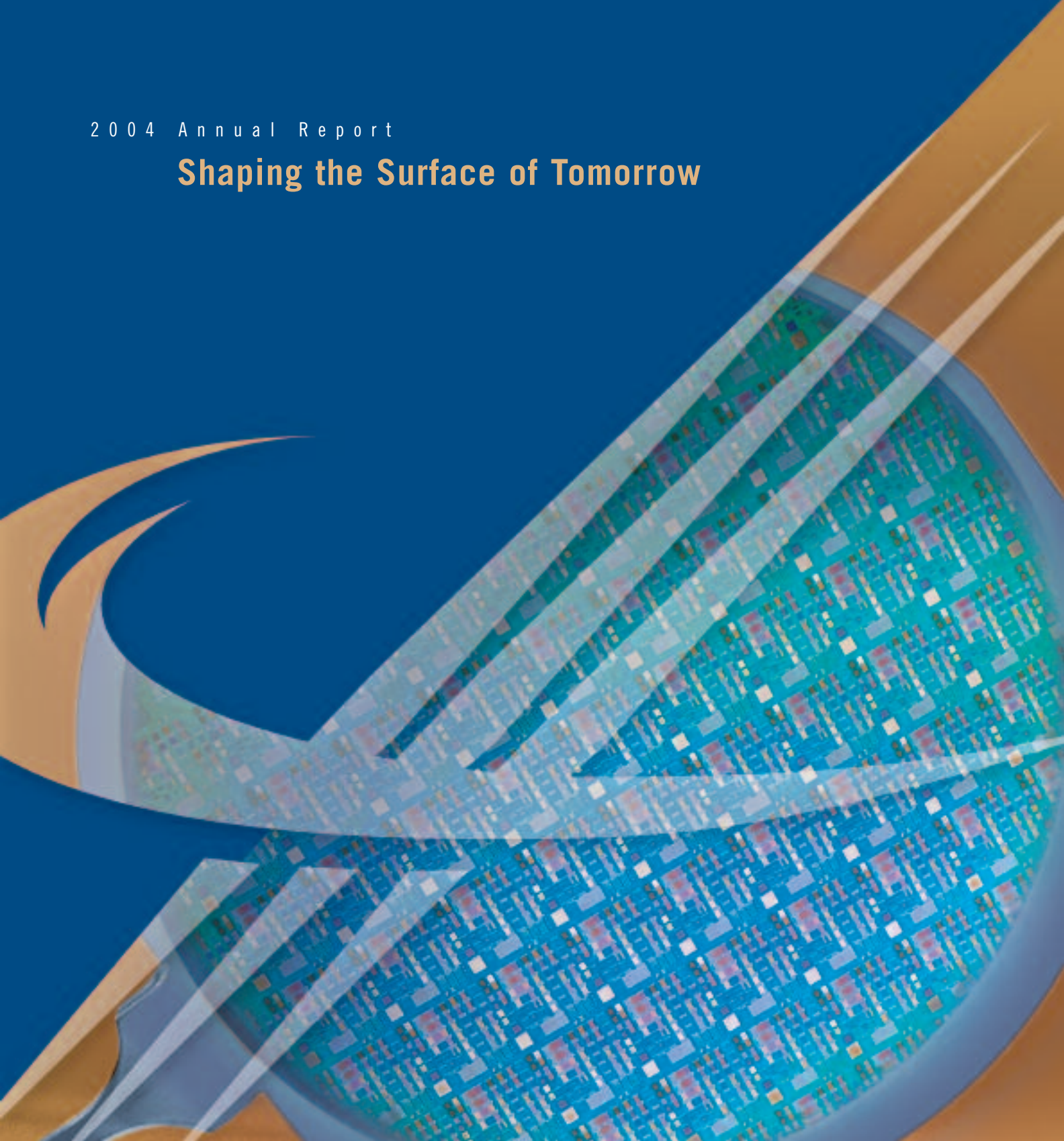




2004 Annual Report

Shaping the Surface of Tomorrow

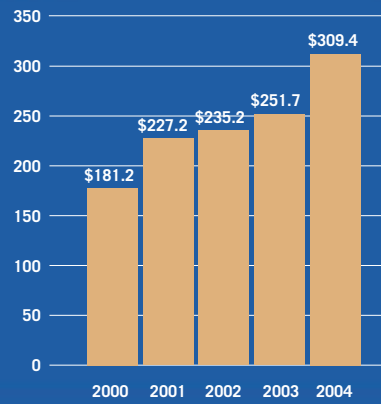




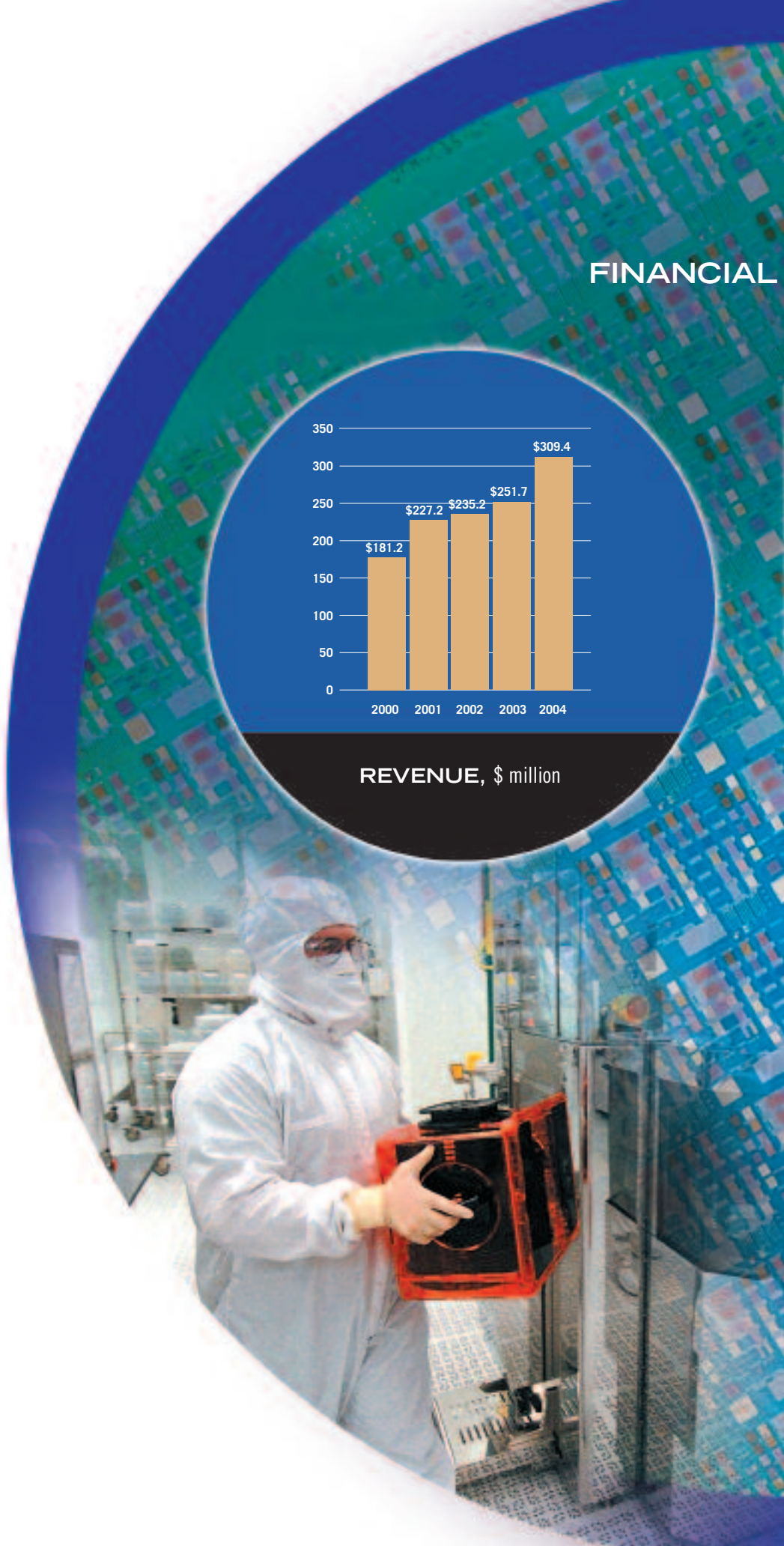
History of Profitable Growth

Cabot Microelectronics has demonstrated a history of strong profitable growth, having delivered tens of millions of gallons of high performance CMP slurries to our customers worldwide.

FINANCIAL



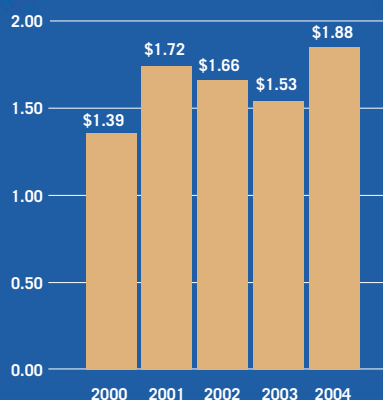
REVENUE, \$ million



HIGHLIGHTS

(Amounts in millions, except for EPS and ROIC)

SELECTED INCOME STATEMENT DATA:	2004	2003	Increase
Revenue	\$309.4	\$251.7	23%
Operating Income	\$69.7	\$56.1	24%
Net Income	\$46.7	\$37.7	24%
Diluted Earnings Per Share (EPS)	\$1.88	\$1.53	23%
Total Assets	\$363.3	\$315.6	15%
Stockholders' Equity	\$315.6	\$271.8	16%
Cash Balance	\$157.3	\$111.3	41%
After Tax Return On Invested Capital (ROIC)	27%	24%	17%



EARNINGS PER SHARE, \$



Cabot Microelectronics Corporation is the world's leading supplier of polishing slurries used in a process called Chemical Mechanical Planarization, or CMP, to polish various materials used in semiconductor manufacturing processes. Our products play a critical role in the production of the most advanced semiconductor devices, enabling the manufacture of smaller, faster and more complex devices by our customers.

Customers use our CMP solutions to polish advanced multi-layered integrated circuits (IC's) and data storage components to a planar, defect-free finish. As the pioneer and leader in the CMP slurry arena, our products enable customers to produce high-performance memory, logic and data storage devices with higher product yields, improved product performance, increased manufacturing throughput, and lower overall production costs.



EVOLVING WITH A GROWING AND CHANGING INDUSTRY

Consumers worldwide continue to demand products that are faster, smaller and more complex. The proliferation of electronic wireless and digital devices has resulted in rising global semiconductor demand and functionality. We believe these trends will increase the demand for CMP to enable the production of smaller, faster and better functioning semiconductor devices.

TECHNOLOGY LEADERSHIP

Through close partnerships with our customers, our team of world-class scientists and engineers is able to develop the customized solutions required to address our customers' needs for next generation technologies. Our strong balance sheet enables a commitment to R & D investment that we believe is unrivaled in our industry. We believe we are the only company today that is able to offer solutions for all CMP applications and technology nodes.



OPERATIONS EXCELLENCE

Our focus on operations excellence, including our recent company-wide implementation of Six Sigma, will enable us to continue to meet the ever higher quality, consistency and yield requirements of our customers, while also allowing us to improve our productivity and help identify opportunities for cost improvement.



GETTING CLOSER TO OUR CUSTOMERS

We are strengthening our relationships with customers through our global sales, service and technical teams. By locating sales and technical support around the world, we are able to more closely and effectively collaborate with our customers globally.



EXPANSION IN ASIA

As semiconductor production and technology continue to grow and shift toward Asia, we are expanding our already strong presence and brand. We are adding additional production capacity to our largest volume manufacturing plant, located in Geino, Japan. In 2005, we plan to open a new Asia Pacific Technology Center to develop new products and solutions for our customers worldwide.



TO OUR SHAREHOLDERS, CUSTOMERS AND EMPLOYEES:

Upon completion of my first year as CEO of Cabot Microelectronics Corporation, I can say to you with enthusiasm that I am proud of what has been a very successful year for our company. Our accomplishments over the past year are notable, yet I believe the important changes we have made throughout our organization to position us for continued success in the future are of even greater significance. As we continue to operate within a dynamic environment for our company and for our customers, I would like to address the key aspects of our business that form the foundation for our strategy for success going forward.

CONTINUED STRONG FINANCIAL PERFORMANCE

We are proud of our financial performance in fiscal 2004, which we believe demonstrates the continued financial strength and stability of our company. We achieved another record level of revenue, at \$309 million, growing revenue by 23 percent compared to fiscal 2003, while maintaining a healthy gross profit margin of 49 percent of revenue. We also posted a record level of earnings per share at \$1.88, reversing two prior years of decreasing earnings per share. We achieved these results through the hard work and dedication of our 585 employees worldwide, aided by the recovery of the semiconductor industry. We believe our financial results and solid balance sheet provide us with the flexibility to meet future opportunities and challenges.

OUR LEADERSHIP TEAM FOR THE FUTURE

To facilitate more effective execution of our strategies, this year I made a number of additions and changes to our executive leadership team. I am delighted with the leadership and fresh perspectives that our new leaders in Research and Development, Operations, Human Resources, Corporate Development, Quality and Asia Pacific have brought to our company. In conjunction with this realignment at the leadership level, we are also cultivating more disciplined approaches and processes within our business to capture quality and efficiency improvements, to become more innovative, to drive broad organizational development across our company, and to increase our overall leadership capability. These improvements have already begun to pay off for our company, and I am confident that they will continue to do so in the future.

THREE KEY STRATEGIES

Throughout the year we continued our execution of three key strategies – maintaining our technology leadership, achieving operations excellence, and getting closer to customers – which together continue to serve as the engine that drives our opportunities for future success.

TECHNOLOGY LEADERSHIP – Our customers' relentless pursuit of ever greater performance and lower costs is increasing the complexity of CMP technology, which is leading to a fragmentation of technical solutions and greater customization of products by customer, tool set and process integration approach. This customization represents a new dynamic in the industry and creates a unique opportunity for Cabot Microelectronics as the technology leader in CMP slurries. The capabilities and scale within our technology organization, which we believe are greater than any of our competitors, allow us to flexibly deploy our technical resources to provide more customer specific technical solutions on a cost-effective basis in partnership with our customers.

Our historical focus in research and development has been on innovating to achieve ever greater product performance. While we will continue this orientation, we are now also focusing on innovating to reduce the cost of ownership of our products to respond to customer needs for lower cost solutions.

Within our technology team, we reorganized and refocused our efforts toward achieving excellence in three areas - robust development of new products for specific existing and emerging applications, process development to support rapid and effective commercialization of new products, and development of fundamental enabling technology to provide new CMP technology platforms for future generation products. We have also broadly implemented a Six Sigma initiative across the company that is bringing new focus on more disciplined and systematic methods of experimental design and data analysis. Our three-pronged approach to research and development, combined with our Six Sigma initiative, provides competitive strength that we are leveraging as we meet the needs of our customers.

OPERATIONS EXCELLENCE – As IC technology has advanced, semiconductor manufacturers' processes have become highly sensitive to CMP slurries and slurry performance, and customers now demand absolute consistency in slurry products, gallon to gallon, drum to drum, and lot to lot, across thousands of gallons of product. Further, in many cases product purity requirements are now measured at the "parts per billion" level, and we are finding that product quality and consistency have often become as important to our customers as ultimate product performance. This industry trend toward greater product quality and consistency demands ever-increasing manufacturing capabilities from us, as well as from our suppliers.

We are unique among CMP slurry providers by virtue of our established record of successfully delivering tens of millions of gallons of slurry to our customers on time and within specification. We believe we have the largest global manufacturing network for CMP slurries in the industry, producing products in five manufacturing facilities on three continents, which affords us access to efficiencies and economies of scale that we believe our competitors do not have. We have a very sophisticated quality process in our manufacturing operations, and an accompanying equally sophisticated supplier quality process, that have enabled us to meet the increasingly stringent requirements of our customers.

In further pursuit of operations excellence, implementation of our Six Sigma initiative is illuminating new and intriguing opportunities to further improve the quality of our products and services, and to capture productivity and efficiency gains. It has been energizing to see how fast this process has taken hold within our organization.

GETTING CLOSER TO CUSTOMERS – Over the last year we have focused a great deal of effort on building deeper and richer relationships with our customers around the world at multiple organizational levels. These efforts have involved some significant changes in the operating culture of our company. We have shown our customers a greater willingness to listen and respond to their requests, and to work collaboratively with them. We have made the customer the center of our programs and initiatives. Our actions and efforts in this area have prompted very supportive and complimentary feedback from our customers. Our goal is to achieve ever higher levels of trust and loyalty from all of our customers as we work together to develop the materials and process technologies for the future. Although we are pleased with our progress in this area, we are far from satisfied and we intend to continue to pursue this initiative relentlessly.



UNDERSTANDING CMP

Semiconductor chips are the basic building blocks of electronic devices. The first layer of a chip consists of millions of microscopic transistors that are interconnected in subsequent layers with microscopic wires. The smallest wires are 65 nanometers (or 0.0000065 centimeters) across – over 1,000 times thinner than a human hair. Each layer must be polished to maintain the structural and electrical integrity of the device. CMP, or chemical mechanical planarization, is a polishing process used by semiconductor manufacturers to planarize or flatten the multiple layers of material that are built upon silicon wafers in the production of advanced integrated circuits. CMP slurries are liquid formulations that enable this polishing process and generally contain engineered abrasives, high purity deionized water, and proprietary chemical additives.

EXPANSION IN THE ASIA PACIFIC REGION

A clear trend within the semiconductor industry is the ongoing shift of industry activity to the Asia Pacific region. Although North America is still a key region for the global semiconductor industry, most of the industry's growth is now concentrated in Asia. We believe we are well positioned to capitalize on this growth, both with our brand and our resources, and we are actively expanding our presence within the region.

We are growing our technology infrastructure in Asia with the design and construction of a new, state of the art technology center adjacent to our existing manufacturing facility in Geino, Japan. This technology center is our first research and development facility to be located outside of the United States, and it represents an important step in establishing full technology development capability within the Asia Pacific region to support our customers. This investment, in conjunction with our deployment of additional executive, senior management, and technical and commercial talent and attention in Asia, underscores the importance of the Asia Pacific market to our company.

OPPORTUNITIES WITHIN A DYNAMIC INDUSTRY

We expect continued rapid technical advancement and change within the semiconductor industry, and we anticipate that this dynamic environment will provide many continuing challenges and opportunities for CMP suppliers. The emerging digital technologies of today are enabling a new era in which computing, content and connectivity are becoming all pervasive. Advancement in the technologies that underpin this connectivity, including those for memory, broadband, networking and mobile applications, fueled by escalating demand for consumer devices, appear to be driving the next wave of growth in the semiconductor industry.

We believe that this new emphasis on connectivity and consumer devices will drive significant development of new CMP solutions, paralleling the traditional emphasis on CMP slurries for microprocessors. As the semiconductor industry advances the development and mass production of devices with feature sizes of 90 nanometers and smaller, we expect that the associated technical and materials challenges will continue to escalate and drive the need for innovative new CMP materials and process technologies.

WELL POSITIONED FOR THE FUTURE

From our perspective, growth associated with the rapid incorporation of CMP technology, along with the challenges and rewards associated with meeting future requirements for CMP provide an attractive outlook for the CMP industry, which naturally has attracted competitors. However, we believe that Cabot Microelectronics is uniquely positioned for continued success and leadership. No other CMP slurry provider has our track record of developing products to meet the demands of advanced technology, improving existing technology and successfully meeting the ever more stringent product performance requirements of the IC industry through sustained high volume manufacturing. Further, in our view our technical capabilities and the quality and scale of our global supply chain and service infrastructure are unmatched in our industry. We believe we are the only CMP slurry supplier in the world today that offers and supports a full line of CMP products for all major applications and serves a broad range of customers globally, while successfully providing the attendant technical support.

Although there are indications that 2005 will be a year of moderating growth in semiconductor industry revenue and possibly even a contraction, we believe that we are well positioned for continued success in CMP slurries. We are excited about our opportunities, and are eager to tackle the challenges of the future.

In closing, I want to offer my thanks to our shareholders for their continued commitment and confidence in our company. My leadership team and I are your stewards and we take very seriously our responsibilities to you. I also thank our customers for their support and for their business. Finally, and most importantly, I thank all of our employees for their dedication and hard work without which our company could not be successful.

WILLIAM P. NOGLOWS

Chairman, President and Chief Executive Officer

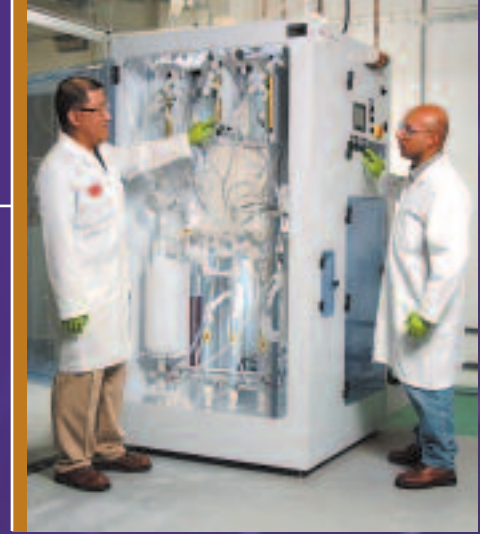


TECHNOLOGY LEADERSHIP

As semiconductor technology has become more advanced and device feature sizes continue to shrink, CMP solutions have become increasingly complex. Leading edge technologies now often require customization by customer, tool set and process integration approach. We believe that this trend toward greater customization will continue into the 65 and 45 nanometer technologies and beyond. To enable future success, we intend to fully leverage our technology infrastructure and resources, as well as our extensive capabilities in research and development to develop the CMP solutions of tomorrow.

Cabot Microelectronics has historically invested approximately 15 percent of revenue in research and development, and more than 30 percent of our workforce is dedicated to R & D. These world-class scientists and engineers are organized into teams that are focused on R & D for product development, process enhancement and enabling technologies.

We also look outside our company for opportunities to further our technology leadership. Our recently announced strategic alliance with NanoProducts Corporation, a privately-held technology leader in nano-scale particles, is one example of this strategy. Nano-particles can be customized and highly engineered to deliver unique performance attributes and we believe that through collaboration with companies like NanoProducts Corporation we may be able to develop a range of custom abrasive particles that will enable innovative CMP solutions to meet the needs of our customers' future generation technologies.



More than 30% of our workforce is dedicated to R&D, representing a team of world-class scientists and engineers.

We believe Cabot Microelectronics is the leader in all major application areas for CMP slurries, including copper, tungsten, and oxide, and our broad product portfolio includes solutions for all technology nodes. Our products are designed to enable optimal removal rates and cleanability, outstanding surface finish, proper selectivity for maximum planarization, and decreased dishing, erosion and defects.

Beyond the IC CMP industry, we have successfully translated our capabilities and technology in fine finish polishing into the data storage industry. Our highly engineered solutions play a critical role in enabling the production of rigid disks and magnetic heads, two critical components of hard disk drives. In the future, we plan to seek additional opportunities to grow our business by leveraging our capabilities into other demanding applications that require engineered surface finishes.





OPERATIONS EXCELLENCE

Cabot Microelectronics recognizes that as feature sizes continue to shrink, the quality and consistency requirements for our products become increasingly stringent. Our operations excellence initiative is focused on improving quality and productivity across our organization and through our supply chain. Our goal is to identify and eliminate sources of variation in order to provide the highest quality products with the lowest cost of ownership to our customers, while optimizing the utilization of our resources and infrastructure.

This past year we implemented a company wide Six Sigma initiative in order to more effectively identify and act upon improvement opportunities. Although early in the process, we are excited about the initial results and believe this effort will help identify opportunities for cost improvement through variability reduction as well as decrease the time to market for new products allowing us to deliver added value to our customers.

Our quality initiatives also include our suppliers' processes. We are partnering with our suppliers and using Six Sigma techniques to reduce variability and improve raw material quality. Our operations excellence initiative incorporates quality from the beginning to end of the process.



We are employing Six Sigma in combination with other quality process initiatives to deliver added value to our customers.





GETTING CLOSER TO OUR CUSTOMERS

As the semiconductor industry evolves, the relationship between customer and supplier has become even more important than in the past. We partner with our customers to anticipate industry changes and develop new solutions for advanced polishing processes.

We believe Cabot Microelectronics has world-class technical and applications support teams that are unrivaled in the industry – across Asia, Europe and the U.S. Our financial strength and leadership in CMP technology enable us to attract and retain the world's best scientists and engineers to develop advanced technological applications for our customers.





EXPANSION IN ASIA

Cabot Microelectronics has a strong presence and brand in Asia, where the semiconductor industry continues to grow, and where production and technology advancements outpace all other regions. Nearly 65 percent of our revenue in fiscal 2004 came from the Asia Pacific region.



Our manufacturing plant in Geino, Japan has more than 120 employees and is our highest volume plant globally, with expansion efforts underway to further increase production. Expanding our existing capacity in Japan, combined with output from our other manufacturing facilities, will help us maintain supply flexibility and efficiency to respond to the growing Asia Pacific demand.

We are also expanding our footprint in Asia by building a new Asia Pacific Technology Center adjacent to our existing manufacturing site in Japan. This technology center will include a product development facility, along with a polishing and metrology clean room. The center is scheduled for start-up in 2005 and will allow us to develop and test new formulations and product platforms to support our customers worldwide.

We also have sales and technical support staff in Japan, Taiwan, Korea, Singapore, and China, as well as analytical capabilities in Taiwan to serve and support our industry-leading customers throughout Asia.

In addition, we have put in place a focused management team for China and Southeast Asia to support market development in this significant region.

Nearly 65% of our revenue in fiscal 2004 came from the Asia Pacific region.



LEADERSHIP TEAM

William P. Noglows
*Chairman of the Board,
President and
Chief Executive Officer*

William S. Johnson
*Vice President, Chief
Financial Officer and
Treasurer*

Clifford R. Spiro
*Vice President of Research
and Development*

Julie A. Hensel
Director of Global Quality

Daniel S. Wobby
*Vice President of Greater
China and Southeast Asia*

Victoria J. Brush
*Vice President of
Human Resources*

Adam F. Weisman
Vice President of Operations

Stephen R. Smith
*Vice President of
Marketing and Sales*

Daniel J. Pike
*Vice President of
Corporate Development*

James DeHoniesto
Chief Information Officer

Hiroyuki Nishiya
*Vice President of
Northeast Asia*

Jean Pol Delrue
*Vice President of European
Business Region*

H. Carol Bernstein
*Vice President, Secretary
and General Counsel*



CORPORATE INFORMATION

Board of Directors

William P. Noglows
Chairman
*President and Chief Executive Officer,
Cabot Microelectronics Corporation*

Juan Enriquez-Cabot
Director
*Chairman and Chief Executive Officer,
Biotechnology LLC*

John P. Frazee, Jr.
Director
*Former Chairman and Chief Executive Officer,
Centel Corporation*

H. Laurance Fuller
Director
Former Co-Chairman, BP Amoco PLC

Ronald L. Skates
Director
*Former President and Chief Executive Officer,
Data General Corporation*

Steven V. Wilkinson
Director
Former Partner, Arthur Andersen LLP

CORPORATE HEADQUARTERS

Cabot Microelectronics Corporation

870 N. Commons Drive
Aurora, IL 60504
(630) 375-6631

Investor Information

Investor inquiries are welcome, and individuals are invited to contact our offices by mail at the address above, by telephone at (630) 499-2600 or through our website at www.cabotcmp.com.

Stock Information

Cabot Microelectronics is traded on NASDAQ® under the symbol CCMP.

Stock Transfer Agent and Registrar

EquiServe Trust Company, N.A.
P.O. Box 43010
Providence, RI 02940-3010
(781) 575-3400
www.equiserve.com

Independent Auditors

PricewaterhouseCoopers LLP
Chicago, IL

Shareholder Meeting

The Annual Meeting of Shareholders will be held at 8 a.m. on March 8, 2005, at Cabot Microelectronics Corporation, 870 N. Commons Drive, Aurora, IL.

Form 10-K

A copy of the Cabot Microelectronics Annual Report on Form 10-K for the fiscal year ended September 30, 2004 filed with the Securities and Exchange Commission is enclosed and also available without charge at our website, www.cabotcmp.com.





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