

# Patricia Cotswold, PhD

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## R&D and PRODUCT DEVELOPMENT TECHNOLOGY TEAM LEADER

### Innovation • Growth • Leading Edge Technology

Accomplished scientist and inventor with 16 patents and 45 publications, engineer, engineering manager, chief technology officer, technology managing executive, and company founder focusing on commercial ion sources and semiconductor process technology. Significant company contributor with broad range of management/technology skills applicable to innovating and growing a single start-up technology company or developing new entity within corporate technology structure.

### CORE COMPETENCIES

- Leadership & Team Building
- Product Strategy
- Technology Leadership
- Startup Launches
- Roadmap Development
- Strategic Planning/Execution

### BUSINESS PLAN GENERATION and MARKETING

- Wrote initial business plan for IonSorcerer, Inc.
- Played key role in fund-raising activities; negotiated contracts with strategic partners, OEMs, and distributors.
- Generated marketing plans, product specifications, and printed materials.
- Collaborated with design firm to generate corporate-identity package.
- Delivered dozens of presentations to prospective customers and participated in many trade shows and exhibitions.

### RESEARCH and DEVELOPMENT

- Created and headed IonSorcerer's R&D and Engineering organizations.
- Invented and headed development of all core technologies, including ion implantation equipment, semiconductor process applications, and use of proprietary doping materials and chemicals.
- Defined, negotiated, and managed execution of product-development programs with OEM partners.

### EXECUTIVE MANAGEMENT

- Managed daily operations across most engineering, product development, product marketing, and manufacturing disciplines.
- Served on Board of Directors; prepared Board packages and quarterly reports.
- Developed planning tools, department budgets, and business processes with executive management team.

### INTELLECTUAL PROPERTY MANAGEMENT

- Managed all IP activities, including patent strategy, filing, technology roadmap planning, and patent licensing.
- Oversaw prosecution of some 85 patent applications in five countries with three outside legal firms.
- Personally authored 35+ patent applications, of which 20 are issued in US and 9 in foreign countries.

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## CAREER CHRONOLOGY

**Executive Vice President, Chief Technology Officer**, October 2000 to present

*Technology startup that develops novel commercial ion source and semiconductor process technology for the ion implantation and semiconductor manufacturing industries.*

### **IONSORCERER, INC., Mountain View, CA**

Principal inventor of core products and chief architect of company's commercial product strategy.

- Founded 70-person company.
- Served as President for first 5 years, growing company to 40 employees and raising \$40M in private equity funding.
- As Chief Technology Officer, launched successful programs with OEM partners that resulted in new method of transistor fabrication, which is being qualified for production at multiple semiconductor manufacturers.

**Director of Systems Engineering**, December 1999 to October 2000

*Leading manufacturer of cluster tools and wafer handling systems for OEM capital equipment market.*

### **CLUSTER AUTOMATION, Redwood City, CA**

Headed systems engineering department. Managed mechanical, electrical, controls, and vacuum engineering functions.

- Managed design and delivery of new cluster tool for flat panel processing on aggressive 10-week schedule, bringing in \$2.5M of revenue and exceeding expectations of company's largest cluster tool OEM customer.
- Restructured engineering group to increase efficiency and overall output.
- Managed release of new controls system for core 300mm cluster tool product, which became Brooks' most profitable product group with annual systems sales volume that increased to \$60M in 2000.

**Chief Scientist**, July 1994 to December 1999

*Leading manufacturer of ion implanters.*

### **GOLDEN STATE SEMICONDUCTOR, San Jose, CA**

Served as group leader, ion sources. With six-person R&D group, managed engineering development of ion source technology. Directed R&D, continuous-improvement programs, and customer specials. Provided physics support for new platforms and supported marketing and engineering organizations. Authored six patents.

- Led successful development of industry's first long-lifetime, indirectly-heated cathode ion source, the Extended Life Source, which became default ion source across Eaton's entire product line of high-current, medium-current, and high-energy implanter platforms. Since then, every implanter manufacturer has released a version of this source, making it entire industry's default ion source technology.
- Managed CIP with key customers and released multiple field upgrade packages, generating millions of dollars of new aftermarket business.
- Managed engineering development of beam current upgrades, resulting in release of industry-leading GSD/E high current implanter.
- Collaborated with Indonesia and Florida subsidiaries to streamline worldwide ion source product line.
- Increased Eaton's market share in GaAs-based communications industry by leading successful effort to win \$8M order from biggest competitor by engineering new version of Eaton's medium-current ion source to meet customer's manufacturing requirement.

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## **Marketing Product Manager, Vacuum Technology and Instruments**, May 1992 to July 1994

*Producer of vacuum technology, including gas analysis systems, UHV systems, pressure gauges, valves, and fittings.*

### **ESSINGER, INC., Atherton, CA**

Hired as applications engineer; promoted to product marketing manager after nine months. Reported directly to CEO.

- Collaborated closely with European parent company to market their process monitoring product to semiconductor industry in US and Europe.
- Won exclusive, 5-year worldwide contract with large domestic semiconductor manufacturer for all process monitoring equipment on PVD tools used in manufacturing their flagship processor, more than doubling product-line sales over 2-year period.
- Outsourced manufacturing of flanges and fittings to domestic firm, reducing costs by 33 percent and increasing market share, thereby doubling bottom line contribution.

## **Senior Research Scientist**, April 1989 to May 1992

*Optron offers products for optical switching, infrared imaging and the manufacture of liquid crystal displays (LCDs).*

### **SEE-LUX SYSTEMS, Palo Alto, CA**

Served as program manager for video projection, display, and camera development, including laser-based applications. Led small team of engineers in developing new optical signal processing technology.

- Co-invented e-MLM light modulator used in infrared scene projection and large-screen displays.
- Obtained external funding for product-development programs under DOD and NSF.
- Authored two patents on electron beam-addressed spatial light modulators.

## **EDUCATION**

**PhD in Physics, Experimental Solid-State**, University of California, Berkeley, CA, 1988

**Bachelor of Science in Physics with High Honors**, Texas A&M University, College Station, TX, 1983

Earned Sigma Xi award for Outstanding Undergraduate Research

