

Driving the Electronics Revolution



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Every second of every day, billions of people connect to a world made possible by electronics. From the personal realm of digital music, photography, and social media, to globally integrated computing systems that process information at the speed of light, everything we do and everything we touch is influenced, enhanced, and shaped by the power of electronics.

The industries, companies, and people SEMI® represents are the architects of the electronics revolution. SEMI members are responsible for the innovations and technologies that enable smarter, faster, more powerful, and more affordable electronic products and devices that bring the power of the digital age to more people every day.

Semiconductor manufacturing technology is not limited to microprocessors and memory chips. The science used to make microchips is enabling advances in performance and cost-savings for solar cells (photovoltaics), solid-state lighting (high-brightness LEDs), fuel cells, micro-machines, medical devices, and a growing array of new products built on semiconductor technology. Simply said, semiconductor science is the enabling technology that makes modern life possible.



POWERING THE GREEN REVOLUTION

The innovation and ingenuity behind mobile phones, computers, the Internet, and nearly everything else that makes modern life possible, is the same innovation that drives progress in today's most important energy and energy conservation technologies. Many analysts predict that solar photovoltaic (PV) technology may contribute up to 2,600 TWh of electricity by 2030, enough to satisfy the electricity needs of almost 14% of the world's population. The replacement of conventional lighting sources by solid state lighting—enabled by high-brightness LEDs—is expected to reduce world electricity demand by more than 10%. Energy harvesting technologies and thin film batteries are other advanced technologies that also promise to contribute to a cleaner, more efficient energy future. All these innovations depend upon the technologies made possible by SEMI members. In fact, every solar cell, LED light source and computer chip manufactured in the world today is made with the equipment, materials and technologies from SEMI member companies.



REVOLUTION



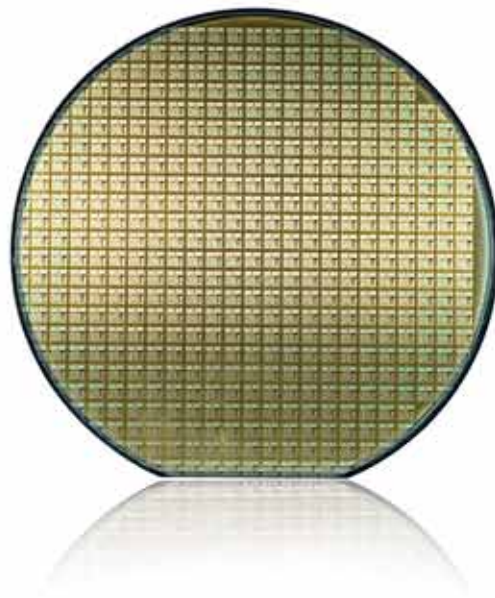
Advancing Industry Growth and Profitability

The industries that comprise the microelectronics supply chain are increasingly complex, capital intensive, and interdependent. Delivering cutting-edge electronics to the marketplace requires construction of new manufacturing facilities (fabs); development of new processes, tools, materials, and manufacturing standards; policies and regulations that encourage business growth; significant investment in organizational and financial resources; and integration across all segments of the industry around the world. Addressing these needs and challenges requires organized and collective action on a global scale.

For more than 40 years, SEMI has served its members and the industries it represents through programs, initiatives, and actions designed to advance business and market growth worldwide. SEMI supports its members through a global network of offices, activities, and events in every major electronics manufacturing region around the world.

SEMI facilitates the development and growth of manufacturing regions by organizing trade missions and investment conferences, engaging governments and policy makers, fostering collaboration, providing market data, and supporting other initiatives needed to encourage investment, trade, and technology innovation.

In addition to supporting access to regional markets, SEMI helps its members explore diversified business opportunities and contributes to the growth and advance of emerging and adjacent technology markets, including photovoltaics, solid-state lighting, micro-electro mechanical systems (MEMS), printed and flexible electronics, and nano-electronics.



PV GROUP—ADVANCING PHOTOVOLTAIC MANUFACTURING AND GROWING SOLAR MARKETS

The manufacture of photovoltaic (PV) solar cells shares many of the same processes, tools, and materials used in making microchips and flat panel displays. While commercial photovoltaics have existed for decades, PV remains a relatively expensive technology. The solutions to improving solar cell efficiency, bringing down the cost of production, and growing the market for solar energy will come from the same people and companies—SEMI members—whose technologies and expertise have driven down the cost and improved the performance of microprocessors, displays, and other semiconductor devices.

Recognizing the growth opportunities in solar energy for SEMI members, SEMI formed the PV Group as a special interest initiative to provide guidance to members exploring and engaging in the solar market. PV Group advances PV manufacturing standards, connects the PV supply chain, and advocates our members' interests on issues, legislation, and regulations that spur innovation, promote investment, and grow the solar market. Today, PV Group is an established business unit of SEMI, serving the global PV manufacturing supply chain with an international network of trade events, standards development, public policy initiatives, research, and information that work together to expand opportunities in solar energy for our members and advance the industry overall.

Standards – Speeding Products to Market, Fueling Industry Growth

Since 1973, the SEMI International Standards Program has facilitated the development and adoption of manufacturing standards and guidelines that have directly and significantly influenced the growth of the global microelectronics industries.

Standards support innovation, competition, and industry expansion, while helping reduce costs and speeding products to the marketplace. From the dimensions of silicon wafers, to the safety of processing equipment and facilities, SEMI Standards influence every step of the process in manufacturing today's microelectronic devices.

Reducing Costs and Spurring Innovation

Standards establish a common communications platform that enables faster commercialization, product interoperability, faster design, easier installation and testing, reduced costs, safer equipment, and greater environmental and resource sustainability. The SEMI International Standards Program facilitates the development of global, consensus-based solutions, including specifications, test methods, terminology, and safety guidelines that in turn create a common language understood by everyone in the global microelectronics industry. In the early years of the semiconductor industry, the makers of microchips built their own equipment and sourced their own materials, utilizing different specifications that were not necessarily compatible with anyone else's technology, making it difficult and expensive for suppliers to meet the needs of multiple companies. As SEMI Standards came into use, the creation of common specifications and guidelines, such as the dimensions of silicon wafers and machinery interfaces, allowed the development of a robust and increasingly innovative equipment, materials, and services industry



that today totals more than 2,000 companies worldwide and generates more than US\$100 billion in annual sales.

SEMI Standards have also played an instrumental role in the global growth of microelectronics manufacturing, especially in the growth of the fabless/foundry model, which allows thousands of chip designers around the world to bring innovative and low-cost products to market without needing to own their own manufacturing facilities (fabs). SEMI Standards have allowed foundry companies like TSMC, UMC, and GLOBALFOUNDRIES, to rapidly build and equip multi-billion dollar fabs utilizing equipment and materials from multiple vendors, speeding these facilities into production and ensuring compatibility of tools and materials.

SEMI – FACILITATING STANDARDS DEVELOPMENT FOR MORE THAN 35 YEARS

Over 3,000 volunteers, 20 global technical committees, and more than 200 task forces have worked tirelessly to create the library of nearly 800 SEMI Standards and Safety Guidelines. Our industry supports the standards development process because it provides a forum for free exchange of technical expertise and is protected by anti-trust regulations. Companies that participate actively in standards work have a head start on their competitors in adapting to market demands and new technologies. In addition, recent studies have shown that research risks and development costs are reduced for companies contributing to the standardization process.





Informing the Industry, Connecting People, and Growing Business

SEMI engages its members, their customers, and global partners through a global network of staff, events, committees, special interest groups, policy advocacy, market research, and communications that inform, educate, and advance the growth of the microelectronics industry.

Committees, Advisory Boards, Special Interest Groups— Connecting People, Ideas, and Action

SEMI is driven to serve member needs by an international board of directors, regional advisory boards, numerous advisory committees, working groups, and volunteers that provide input and direction on the issues, industries, and actions SEMI pursues. SEMI also sponsors technology and issue-specific special interest groups, to address unique industry needs and to provide a collective voice for defined audiences within the microelectronics industry.

Expositions— Bringing the Industry Together for More Than 40 Years

SEMI expositions, including SEMICON® and SOLARCON®, are recognized around the world as the premier forums for showcasing new products and technologies, exploring new markets, and connecting suppliers and customers across the microelectronics industry. Many of the industry's top companies entered the marketplace by participating at a SEMICON exposition, and virtually every major technology development in microelectronics manufacturing made its debut at a SEMICON.

Public Policy— Advocating Policies that Promote Growth and Trade

Working directly with governmental and regulatory authorities, and in association with other organizations and coalitions, SEMI promotes member interests in tax, trade, export control, education, immigration, competitiveness, Intellectual Property, regulatory controls, and other government initiatives.



In facilitating collective action and providing a unified voice for the industry, SEMI has been influential around the world in promoting trade agreements, passing key legislation, and shaping regulations that contribute to industry growth and profitability.

Market Research and Information— Helping Companies Navigate Market Trends

The SEMI Industry Research and Statistics program collects and reports critical data on the global microelectronics industry, including sales and shipments of manufacturing equipment, fab construction and operations, materials trends and markets, and regional market activity. The data and reports SEMI distributes, helps SEMI members understand market trends, identify new market opportunities, and better plan for industry business cycles, in turn helping companies manage their bottom line and increase their profitability.

WORKFORCE DEVELOPMENT – EDUCATING TOMORROW'S INNOVATORS

Declining interest in math and science is a global problem and one that threatens the future of high-tech industry as a whole. It is imperative that our industry works to reverse these trends in order to assure that talented young people pursue educational paths that will lead them to careers in tomorrow's workforce.

In 2003, SEMI formed the SEMI Foundation to support and invest in education programs that engage young people in math and science and encourage their pursuit of careers in high technology industry. The Foundation's "High-Tech U" program teaches high school-aged students around the world about microelectronics—how they work and how they are made—through interactive experiments, games, and instruction led by working engineers from SEMI member companies and professional educators. High-Tech U students learn about career options and what it takes to stay in school and find a successful future in high-tech.

Driving the Future of the Global Microelectronics Industries

The electronics revolution continues to shape and change our lives in myriad ways, creating new opportunities that fuel innovation and foster growth. SEMI is the organization that brings the microelectronics industries together and fosters the connections, collaborations, and communities that drive this revolution and the future of technology.

Join, participate, and engage the industry through SEMI and be a part of the revolution.

- **BECOME A SEMI MEMBER**
Everything starts with SEMI Membership
- **EXHIBIT AT A SEMI EXPOSITION**
Showcase your products, connect with customers, demonstrate your technology leadership
- **SUBSCRIBE TO SEMI NEWSLETTERS**
Get actionable news and information delivered to your inbox
- **ATTEND A SEMI CONFERENCE OR NETWORKING EVENT**
Network with peers and decision-makers, learn about the latest trends and technologies
- **JOIN A COMMITTEE**
Influence policy and standards development; share and learn best practices
- **PARTICIPATE IN AN ONLINE COMMUNITY**
Find solutions and information and collaborate with your peers in the industry

Local Connections, Global Networks.

SEMI is one of the only truly global industry associations, serving its members and their customers with offices and events in every major microelectronics manufacturing region around the world.

Members by Region





