



TREK INC

SERVING THE NEEDS OF THE
SEMICONDUCTOR INDUSTRY
Enabling Semiconductor Processes and R&D Applications

Ion Beam Steering & Electrostatic Chuck Applications

Trek designs and manufactures **high voltage amplifiers and power supplies** for ion beam deflection in silicon wafer processing operations. Trek's technology enables OEM semiconductor equipment manufacturers to offer extremely precise beam sweeping and positioning capabilities, which is especially important for dose control and uniformity.

Trek amplifiers are also used in electrostatic chucks for wafer clamping applications. Our amplifiers enable customized control of complicated control sequences and provide wafer presence and clamping force detection, making Trek uniquely qualified to work with OEMs to address their challenges in these areas.



Model 20/20C HV Amplifier

ESD Measurement & Control



Model 158 Charged Plate Monitor

With increasing industry concern about ESD and the damage it can cause in semiconductor process facilities, Trek offers products and expertise to assist with the measurement and control of ESD. Our measurement instruments deliver not only high accuracy but also high confidence. Trek **charged plate monitors** help with ionizer calibration and auditing processes. Our **electrostatic monitors** verify that air ionizers are working correctly, automatically. Trek **hand-held electrostatic voltmeters** and **portable electrostatic voltmeters** are easy-to-use and provide accurate surface voltage measurements throughout the semiconductor manufacturing process. Our recently introduced **ESD Event Detector** enables detection of ESD incidents in a manufacturing site.



Model 347 ESVM

In the semiconductor industry, these instruments enable quick and accurate checks on dissipative floors, work surfaces, tablemats, and other static-controlled materials to insure that static charge is safely dissipated to ground.

For higher precision and speed, Trek's **high performance electrostatic voltmeters [ESVM]** are designed for more rigorous surface charge detection and measurement of the semiconductor wafers themselves and of related handling devices, in both on-line and off-line applications.

Trek's **surface resistance/resistivity meters** deliver precise surface resistance measurements on virtually any conductive, dissipative or insulative material. In the



Model 152 Surface Resistance Meter

Semiconductor Materials Research



Model 370 ESVM

Trek instruments are utilized throughout the research community, including semiconductor material R&D applications. Our high speed electrostatic voltmeters provide precise measurement of surface voltage, enabling the determination of work potential for various semiconductor materials and guiding design-of-experiment evaluations and other efforts in semiconductor physics.

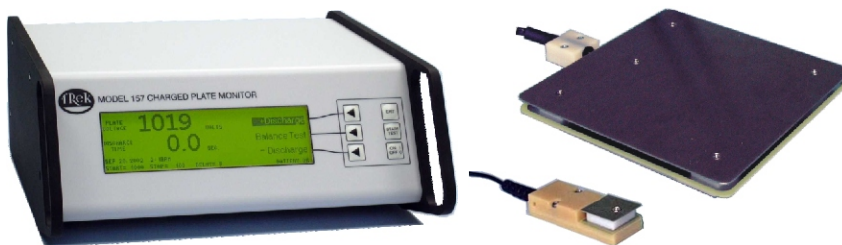
ESD Instrumentation / Electrostatic Voltmeters
High-Voltage Power Amplifiers / Piezo Drivers

SERVING THE NEEDS OF THE SEMICONDUCTOR INDUSTRY



◆ Utilize precise high-voltage power amplifiers for ion sourcing, beam steering, electrostatic scanning, and electrostatic chucks

◆ Measure and calibrate ionizer balance and discharge time



◆ Selectable plate size and capacitance to match ESD sensitive device characteristics



◆ Perform electrostatic measurements to locate and measure static charge levels for compliance with SEMI E78

◆ Diagnose manufacturing environments that are sensitive to ESD with this ESD Event Detector



◆ Insure static charges on materials are dissipated safely to ground potential

Custom Designs Available

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NEW Product from Trek

At SEMICON® West 2008 Trek is displaying its new 80 Kilovolt peak-to-peak (± 40 kV) High Voltage Power Amplifier. Trek Model 40/15 delivers the highest level of output voltages for any amplifier in its class, taking the term 'high voltage' to new heights – to voltage levels not previously feasible or available from high voltage linear amplifiers. Research applications for the 40/15 include electrostatic deflection and dielectric studies. Other applications include but are not limited to research in the fields of plasma chemistry, electrostatic levitation, electrostatic coatings and partial discharge.

DEMO at SEMICON® West 2008

Trek designs and manufactures Electrostatic Chuck Power Supplies and has been supplying high voltage amplifiers into the Semiconductor Industry for decades. Stop by our booth to see a Trek E-chuck power supply in action.

Other Developments at Trek

Model 875 Electrostatic Voltage Sensor for ± 500 V

Trek is developing this unit for use in continuous monitoring of electrostatic properties in processes/systems; it is being designed to enable data collection via a data-output port.



Deionized Water Probe

Trek has developed a probe that can be used for electrostatic measurement of deionized water. As shown here, this probe can be used during critical wafer sawing processes, but it has utility in other applications or processes involving deionized water.

ESD Certified Professional - Program Managers: Now 5 at Trek

TREK is committed to advancing its understanding of the science and technology involved in ESD management. As evidence of that commitment TREK now has 5 engineers who have achieved the designation "ESD Certified Professional – Program Manager" from the ESD Association. This certification enables these individuals at TREK to better understand the intricacies of ESD and thereby assist customers with educational seminars, ESD program development, and electrostatic measurement methods, to provide problem identification and related solutions in ESD-sensitive environments.



Top (L to R): Elwin Rego, Tom Larson, & John Clack
Bottom (L to R): Ron Slaby & Chris Lemke



Trek Model 800 Infinetron®

Trek Receives EuroAsia IC Award

Trek's Model 800 Infinetron® was nominated for and subsequently won a 2007 EuroAsia IC Industry Award. It was one of four products to be 'short listed' for the Yield Management - Best Process Award. Award winners were announced at a special event held during last year's SEMICON® West. The novel Model 800 contacting voltmeter measures site-specific voltage with virtually no charge transfer.



About Trek: A Successful Company with Acknowledged Leadership Qualities

Founded on Technology

TREK, INC. was established in 1968 to serve the needs of the electrophotography industry for highly accurate, stable, cost-effective measurement instrumentation and devices.

Novel probe design technology provided the foundation for the company's first electrostatic voltmeter, which quickly became the industry standard. Trek's design ensures highly accurate measurements under extreme conditions.



Growth through Innovation

In the decades that followed, Trek established itself as a designer and manufacturer of high quality instrumentation.

Innovative designs and unique solutions have fueled product development over the years. Trek developed the world's first all-solid-state, high voltage, high-speed, DC-stable amplifier, which is now the product of choice for medium-current ion implantation systems in semiconductor fabrication facilities around the world. As a result of Trek's close working relationship with its customers, new designs are constantly being created to answer the needs of industry and R&D.



Established Technical Expertise and Application Knowledge

Our scientifically based measurement expertise, coupled with our application knowledge, has enabled us to establish an enviable position in the markets we serve.

We are the experts when it comes to highly accurate measurement instruments and high voltage amplifiers, and the technology that drives them. Customers can depend on Trek to understand both the technical and practical aspects of an application. In many cases Trek is viewed as a virtual member of the customer's product development team.

Expanded R&D Capabilities

In response to the needs of the marketplace, Trek recently established a separate R&D Center to expand and enhance its capabilities for research and development. In addition, a close working relationship with the nearby State University of New York at Buffalo assures that Trek has access to an extensive array of testing equipment and expertise to complement Trek's internal capabilities.

Whether it is understanding electrostatic discharge (ESD) in a manufacturing facility, or discussing an application with corporate or university R&D professionals, Trek has the knowledge that will make a difference.

Dedicated to Excellence

Trek has a well-respected reputation for excellence. We are the premier resource for electrostatic measurement and high-voltage solutions due to our product leadership and engineering excellence.

Committed to the Global Marketplace

Long before globalization was popular, TREK, INC. established Trek Japan KK in Tokyo, Japan for the purpose of providing sales, application engineering support and service to customers in Japan and elsewhere in the Pacific Rim region. A global sales and service network now exists enabling Trek to serve the needs of customers throughout the world.



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TREK - Experts in Electrostatic Measurement and High Voltage Power Amplification

CONTROL WITHOUT COMPROMISE



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