



# TREK INC

SERVING THE NEEDS OF THE

## OPTICS & PHOTONICS INDUSTRY

Trek designs and manufactures high-voltage, high-bandwidth power supplies and amplifiers. The company also offers electrostatic measurement instrumentation and electrostatic discharge (ESD) products.

Products include high voltage power amplifiers, piezo drivers and supplies, as well as charged plate monitors, contacting & non-contacting electrostatic voltmeters, ESD event detectors, ionizers and surface resistivity / resistance meters.

### Typical Applications in Optics & Photonics:

#### Electroluminescence

Trek's amplifiers are used to apply an electric current or a strong electric field, to produce an optical phenomenon and electrical phenomenon where a material emits light. *Trek Product: 610E, 2300*

#### Electro-optic Modulation

Trek's amplifiers are used to apply high voltage potentials across electro-optic materials to create birefringence in the material. *Trek Product: 10/40A, 10/10B-HS, 609E-6, 2200 Series*

#### Electrophoretic Display

Trek amplifiers control electric fields across the display to move charged particles into the desired position to create the image to be displayed. *Trek Product: PZD350A, PZD700A, 601C, 677B, PZD2000A, 2200 Series*



Trek 2200 Series

#### Ferroelectric and Smart Material Characterization

Trek's amplifiers are used to sweep voltage across these materials while monitoring the current required in order to measure the electrical characteristics and hysteresis of these materials. *Trek Product: 610E, 609B-3, 609E-6, 601C, 20/20C*

#### Material Poling

Trek's voltmeters are used for charge measurements of electrets and corona charged surfaces. *Trek Product: 347, 341.* Trek amplifiers are also used for periodic poling of nonlinear optical materials and piezoelectric materials. *Trek Product: P0621, 20/20C, 10/10B-HS, 623B, 609E-6, 10/40A, 30/20A, 610E, 2300*



Trek Model 341

#### Micro-Electromechanical Systems (MEMS)

Trek's amplifiers are typically used to apply voltages to provide electrostatic attraction or repulsion to control the movement of the micro-mechanical structures. *Trek Product: 603, 601C, PZD350A, PZD700A, PZD2000A*

#### Non-Thermal Plasma Chemistry

Trek provides standard high voltage amplifiers, which are used for R&D of plasma reactors and plasma chemistry processes. Trek, also designs custom power supplies for specific reactor requirements. These amplifiers provide the energy to start and control the plasma generation, which enhances the chemical reaction. *Trek Product: 20/20C, 10/10B-HS, 30/20A, 5/80, 10/40A*

#### Partial Discharge (dielectric testing)

Trek provides high voltage amplifiers that are used to apply AC voltage to insulation systems to create the partial discharges or for high voltage dielectric spectroscopy. The use of AC waveforms at higher frequency provide a higher stress on the insulators as compared to DC voltages or low frequency AC voltages.

*Trek Product: 30/20A, 20/20C, 10/40A, 10/10B-HS, 610E, 2300*



Trek Model 2300

#### Piezoelectric Driving & Poling

Trek's amplifiers are used in driving of piezoelectric elements and poling of piezoelectric materials.

*Trek Product: PZD350A M/S, PZD700A, PZD700 M/S, PZD2000A, 2100HF*



Measurement and Power Solutions™

www.trekinc.com

# 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.

## 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 Amplifiers**



TREK, INC. 11601 Maple Ridge Road • Medina, NY 14103 • USA • 800-FOR TREK  
585-798-3140 • 585-798-3106 (fax) • [www.trekinc.com](http://www.trekinc.com) • [sales@trekinc.com](mailto:sales@trekinc.com)

