## DENTON VACUUM, INC.

Cherry Hill Industrial Center
Cherry Hill, NJ 08003

Denton Vacuum, Inc. was established in 1964 in order to capitalize on the technical knowledge of high vacuum systems and experience in optical coatings of Richard Denton, founder and present Chairman of the Board. The company manufactures high vacuum equipment for the optical coating industry and for electron microscopy specimen preparation. It also has in-house optical coating capabilities for customers and produces a high quality non-reflective glass under the trademark "Denglas"® for picture framing glass as well as "Glareban"® non-reflecting screens for computer monitors.

Previous to founding Denton Vacuum, Richard Denton set up vacuum coating for military optics in 1943 at the Frankford Arsenal in Philadelphia. Then, in 1945, he and Thomas I. Scatchard started Optical Film Engineering. After building their own vacuum deposition equipment, they began selling custom vacuum evaporators and soon discovered the need for electron microscope shadow casters. After a number of custom systems were built, the SC-3 evaporator came on the market.

The SC-3 utilized a 12" diameter by 12" high Pyrex bell jar and a newly designed 3" diffusion pump. The first SC-3 was purchased in 1949 by Dr. John Watson of the Henry Ford Hospital and was the first 12" bell jar production evaporator manufactured specifically for electron microscopy.

Optical Film Engineering expanded considerably and in 1956 was sold, becoming part of Kinney Vacuum. After four years there, Mr. Denton left and started a vacuum equipment division with a small company. He bought this division in 1964. Denton Vacuum was started together with Virginia Denton who is still secretary-treasurer, although she is now semi-retired. Denton Vacuum grew rapidly, marketing first the DV-502 (a much improved 12" bell jar evaporator) and during the late l960's developed a freeze etch system based on the work of Dr. Russell Steere of the U.S. Department of Agriculture. The activity of DVI with many phases of the high vacuum industry has led to a constant stream of new products. Electron guns for evaporating refractory materials were developed in the 1960's and ion guns during the 1980's.

In the 1970's, with the widespread use of the scanning electron microscope, DVI introduced a table top sputtering unit. This was the first magnetron sputter coater for E.M specimens and greatly reduced specimen heating. DVI subsequently added a patented grid anode that reduces electron bombardment of the specimens.

With the SEM came increased requirements for distortion free specimen drying. This activated two drying techniques established many years earlier, but little used in TEM. DVI produced the first production critical point dryer based on the work of Dr. Tom Anderson who invented this technique. The company also markets a freeze drying system.

Peter R. Denton, son of Richard and Virginia, joined the company in 1976 after a successful career following his E.E. and MBA college degrees and became president in 1982. Under his direction, many state-of-the-art developments have been applied both to vacuum coating and to vacuum manufacture. New techniques have come forward directed towards obtaining cleaner systems and lower pressures. DVI employs many of the newer pumps such as cryo, turbo and molecular drag types to meet specific requirements of the microscopist. Extremely sophisticated computer-controlled automation and fail-safe technologies developed by DVI for its large optical coating systems are now available to the electron microscopist.

One such customized system, the Hi-Res 100, high resolution chromium sputtering system, started as a custom project for clean and very thin (10Å) chromium films and is now a standard unit. In addition to the standard products that DVI ships on a daily basis, almost every month a microscopist with a special technical requirement buys a customized unit for DVI and is assured that the best and latest in design technology, state-of-the-art components and world class system support will always be available.

After over forty years of meeting the needs of electron microscopists, Richard Denton still complains that DVIs strongest competition is the many thousands of his EM specimen preparation systems that never seem to fail.



## SECOND INTERAMERICAN CONGRESS ON ELECTRON MICROSCOPY
### September 26 - October 2, 1993

The conference will take place at the "Hotel Fiesta Americana Condessa", located on the Boulevard Kukulcan, Cancun, Quintana Roo. Technical and social activities will take place at the same hotel. Discount room rates are available at $80 US per night for either single or double occupancy.

The conference registration fee is $200 US and includes a Welcome cocktail, refreshments at sessions, a gala dinner and a trip to Tulum.

A commercial exhibition will take place during the Congress including most major manufacturers of microscopes and supplies.

Pre-Congress registration and hotel registration forms will be included in a later issue of *Microscopy Today*. Or one may receive applications by contacting the following:

Mr. Mario Meki
Instituo de Fisica, NUAM
Aparto postal 20-364
Delegacion Alvaro Obregon
01000 Mexico, D.F.
Mexico

Tel: 011-525-622-50-33 Fax: 011-525-548-31-11

## USED EQUIPMENT FOR SALE

✓ **MILITARY RESEARCH LAB IS CLOSING** - Military contractor is selling **at drastically reduced prices** its Sorvall MT-2B Ultramicrotome and several Bausch and Lomb stereo microscopes. For spec sheets call (202)544-0836.

✓ **ZEISS 902 with Electron Spectroscopic Imaging.** Purchased in 1988. Under service contract and in excellent working order. Available now. Best offer. For more information contact Dr. David Birk at (617)956-0301.

✓ **Chiller and C-Coater.** Carbon Coater (bell jar evaporator) in good working condition. HVEC model C-12A. Includes VacTec Feed Thru Ring, $1,250 or best offer. M & W Flowrite recirculating Chiller model RPC-4 in good working condition. Compressor replaced 1-2 years ago. With Fenwal solid state temperature controller. $500 or best offer. Contact John Fournelle, Dept of Geology & Geophysics, Univ. of Wisconsin: (608)262-7964.

✓ **Cameca CAMEBAX Electron Microprobe with NORAN Voyager Hp - GE EDS system.** System is in excellent condition and has had full service contract since purchase. Four fully automated WDS spectrometers with two crystals each, including multilayer for F, O and N analysis. Full stage automation, anticontamination system and backscatter system included. Contact Glenn Poirier, McGill University: (514)398-6774.

✓ **Siemens 102 TEM & Durst Model 659 Enlarger,** in good operating condition. Best offer. Inquire by calling N. Tomassini at (215)590-2079.

✓ **JEOL JSM 35C SEM** with four crystal spectrometer, Krisel Control automation package, Kevex SiLi Detector with Tracor MCA. Purchased in 1975, asking $25,000 for complete system or split - $15,000 for spectrometer and automation OR - $5,000 for SiLi Detector and MCA OR - $5,000 for bare JSM 35C. Contact Christos Hadidiacos, Carnegie Geophysical Laboratory: (202)686-2414.

✓ **R075 Water Cooled Haskris Chiller.** About 9 years old. Excellent condition. $1,500 (203)389-6065.

✓ **JEOL SM35U SEM.** Extras include EDX X-ray detector and Robinson BSE detector. Contact Michael Shaffer, Geological Sciences, Univ. of Oregon, Eugene, OR 97403: (503)346-4632.

## USED EQUIPMENT WANTED

✓ JEOL 840, 820, 35C SEM (or similiar) with TN 5500 series EDS analyzer (or similiar).
✓ Nicolet 550 FTIR Spectrometer with microscope attachment (or smiliiar).
✓ All makes of AFMs and STMs.

Used equipment only. Please supply Model #s with approximate age, appropriate accessory lists and prices to *Microscopy Today:* Fax: (608)836-1969.

✓ **TEM: HITACHI, JEOL OR PHILIPS** manaufactured within the last 5-10 years. Contact: J. Whitman, Advanced Biotechnologies, Inc., Maryland. (301)470-3220.

## POSITIONS AVAILABLE

✓ Full-time, permanent position in the Electron Microscopy Laboratory of the Department of Earth and Planetary Sciences at the University of New Mexico. The laboratory currently has a JEM 2000FX STEM/Noran EDS. A JEM 2010 HRTEM will be added to the laboratory this fall. Facility includes darkroom and full sample preparation equipment.

The technologist is responsible for the day-to-day operation of the laboratory which includes: routine maintenance and trouble-shooting, supervision of service engineers, training of users, and sample preparation. The individual will participate in research projects in a wide range of materials science areas.

The qualified candidate should have a B.S. degree (M.S. is preferred) and at least two years of experience. The salary is up to $30,000. Applicants should send a resume and copy of university transcripts to Dr. L. M. Wang, Dept. of Earth and Planetary Sciences, UNM, Albuquerque, NM 87131. *The closing date is July 9, 1993.*

## POSITIONS WANTED

✓ Over 11 years experience in microstructural, microchemical and failure analysis technology on ceramic fibers, fiber reinforced composites, and experimental metals. Expertise in metallography, conventional Scanning Electron Microscopy, Environmental SEM (ESEM™), WDS and EDS X-ray analysis. Carolyn J. Jones: (617)646-9409.

## AVS Adds A Nanometer Science and Technology Division

The American Vacuum Society (AVS) has added a new Nanometer Science and Technology Division in a continuing effort to stimulate emerging technologies related to the AVS' emphasis on materials science at surface/interfaces and on vacuum-related topics. Objectives:

- Provide a continuing forum for discussion of nanometer-scale structures.
- Promote a continuing development of proximal probes (STM, AFM, etc.)
- Foster technology transfer involving nanometer-scale structures.
- Organize meetings and symposia.
- Publish original works and critical reviews in proceedings, technical journals, and books.
- Work collaboratively with the other AVS divisions, and
- Participate actively in all phases of the AVS programs.

The new division will sponsor the following sessions at the AVS' 40th National Symposium (Nov. 15-19, '93: Orlando, FL):

- Nanotechnology: Sensors, Micro-Machining, Nanometer Modification, Manipulation, and Control.
- Photo-Based SXM.
- Innovations in Proximal Probes.
- Nanomechanics
- Ultra Electronics
- Aspects of Nanometer-Scale Science and Technology: Poster Session.

For information on joining AVS amd it's Divisions, contact Angela Mulligan, AVS, 335 E. 45th Street, New York, NY 10017. (212)661-9404.