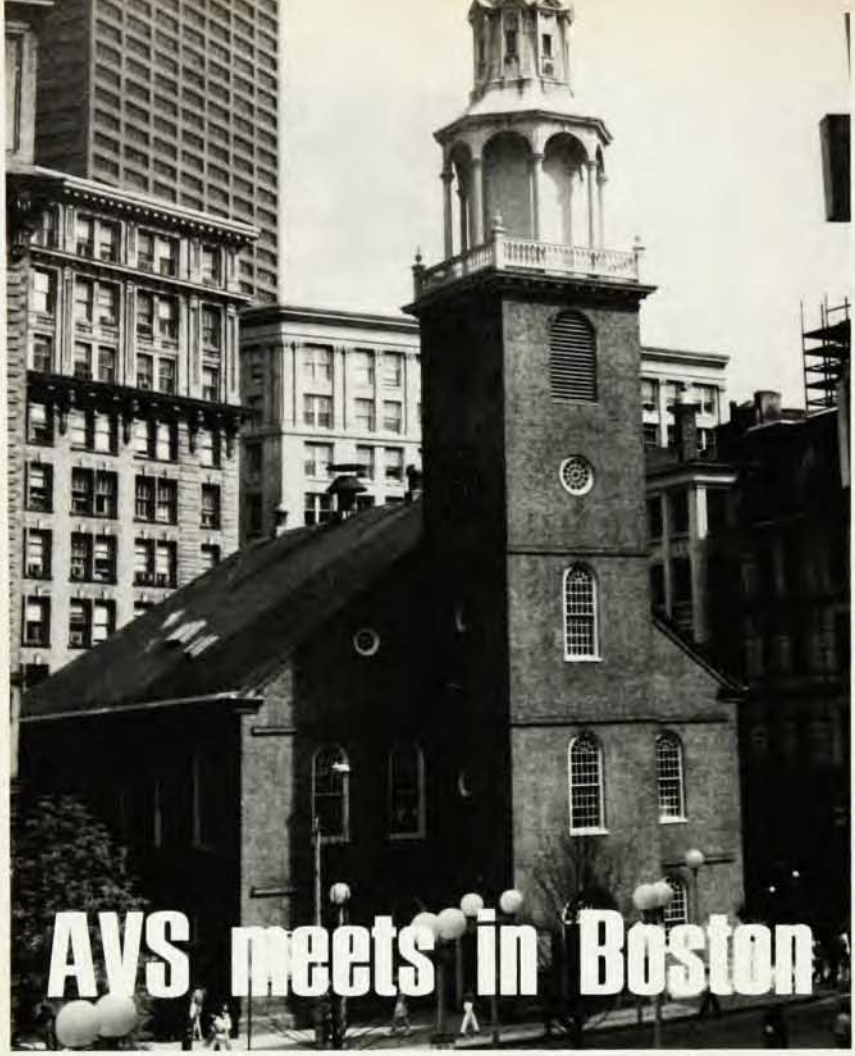

AVS meets in Boston

The Society celebrates its 30th year with presentations of current work, historical reviews, awards and special exhibits.

The American Vacuum Society will hold its 30th National Symposium 1–4 November in the Sheraton–Boston Hotel and at Hynes Auditorium, located in Boston's Prudential Center. Both the technical sessions and the exhibitor's programs are among the largest in the history of the Society; the final program consists of 72 invited papers and 327 contributed papers, including 62 posters and 12 new-product seminars.

This year is the 30th anniversary of AVS. The Vacuum Technology Division is highlighting this event with a special symposium, featuring distinguished speakers who have been invited to cover various aspects of the history of vacuum science and technology. Also commemorating the 30th anniversary, the Fusion Technology Division will present historical reviews of the tokamak and mirror approaches to controlled fusion. There will also be a neutral beams session at which several invited speakers will discuss present and future aspects of this important method for obtaining high-temperature plasmas.

In addition to the full technical program, the schedule includes committee, division, publications and standards meetings, as well as the annual AVS business meeting, a companion's program of tours, and an exhibit of equipment.

Special sessions and seminars

Special evening sessions are being held by the Surface Science, Fusion Technology, and Vacuum Technology Divisions. The Surface Science Division will hold its annual session for postdeadline discoveries, moderated by Cedric Powell (NBS), on Thursday evening at 8:00 p.m. in the Grand Ballroom. The Morton M. Traum Surface Science Student Award will also be presented at this session. This award is given for the best student paper presented in the Surface Science sessions of the Symposium.

In honor of the 30th anniversary, the Fusion Technology Division is sponsoring a special session, entitled "History of Fusion," on Thursday evening in the Fairfax Room. Invited speakers include C. C. Damm (Lawrence Livermore National Lab), discussing "Evolution of the Mirror Machine," and M. B. Gottlieb (Princeton) speaking on "Controlled Fusion."

On Tuesday evening, the Vacuum Technology Division will hold its new products seminars. These sessions allow vacuum experts, manufacturers and inventors to preview new products, vacuum instrumentation and techniques. Tuesday's session begins at 5 p.m. in the Commonwealth Room and will be moderated by J. F. Peterson (CTI Cryogenics).

Ceremonial sessions

The AVS Awards Luncheon will be held on Wednesday in the Republic Room at the Sheraton Hotel. The Medard W. Welch award, given to recognize truly outstanding theoretical or experimental research in fields of interest to the AVS, will be presented to H. H. Wiedner (University of California at San Diego, La Jolla), "...for research leading toward III–V MOS technology." At the Plenary Session in the Grand Ballroom at the Sheraton following the awards luncheon, Wieder will lecture on the "Device Physics and Technology of III–V compounds."

The Peter Mark Memorial Award, presented annually since 1979 to a young scientist or engineer for outstanding theoretical or experimental work, will be given to D. James Chadi of the Xerox Palo Alto Research Center, "for innovative accurate models and theoretical techniques applied to surface structure determinations."

The winner of the 1983 Varian Fellowship will be announced at the awards luncheon. This award is given to recognize and encourage excellence in graduate studies in vacuum science and technology.

The 1983 Shop Note Award will be given to R. Adachi and K. Takeshita (Osaka Vacuum Chemical Company) for their note entitled "Magnetron Sputtering with Additional Ionization Effect by Electron Beam."

On Thursday evening, as part of a session held by the Surface Science Division in the Grand Ballroom at 8:00 p.m., the winner of the competition for the best student paper presented during the Symposium will be announced. A cash prize and a certificate will be presented. The winning paper must make a significant, original contribution to surface science.

Exhibits and other events

An exhibit of state-of-the-art systems, instruments and components will be held in the Hynes Auditorium and Exhibition Hall, accessible from the

third floor of the hotel. Admission is free and the exhibit will be open from noon to 7 p.m. Tuesday, from 10 a.m. to 5 p.m. Wednesday, and from 8 a.m. to 4 p.m. on Thursday.

To commemorate the 30th anniversary of AVS, there will be a special exhibit on the history of vacuum science and technology on the second floor of Hynes Auditorium, adjacent to the equipment show.

A bulletin board with postings of employment opportunities will be maintained throughout the Symposium in room Liberty E (second floor) of the hotel.

Local activities

Boston, one of the world's most famous seaports, has all the attractions one expects of a great city: historic buildings, splendid museums, outstanding colleges and universities, elegant dining, posh hotels, a lively social scene and a wide variety of shopping opportunities.

The companions' program includes a tour on Tuesday of Plymouth Plantation, with visits to Plymouth Rock and Cranberry World. Visits to Trinity Church, Symphony Hall, North End, Quincy Market, Public Gardens, Boston Commons, and the John F. Kennedy Library are part of a half-day tour of historical Boston. A clambake highlights a visit to Hammond Castle in the fishing colony of Gloucester on Wednesday evening. Thursday's half-day tour is a historical expedition; it follows the approximate route of Paul Revere and Williams Dawes' famous ride. □

INVITED PAPERS

TUESDAY

Morning

History of the American Vacuum Society and the International Union for Vacuum Science, Technique and Applications. *J. M. Lafferty*

Early applications of vacuum, from Aristotle to Langmuir. *T. E. Madey*

Comments on history of vacuum pumps. *M. H. Hablanian*

The development of valves, connectors and traps for vacuum systems during the 20th century. *J. H. Singleton*

The measurement of vacuum. *P. A. Redhead*

Atoms and electrons at surfaces: A modern scientific revolution. *C. B. Duke*

The future of vacuum technology. *J. P. Hobson*

The preparation of materials for optoelectronic applications by molecular beam epitaxy. *W. T. Tsang*

The preparation of materials for optoelectronic applications by MOCVD. *J. Duchemin*

Epitaxial growth of compound and alloy semiconductors by sputter deposition. *J. E. Greene*

Scanning tunneling microscopy. *G. Binnig and H. Rohrer*

Catalyzed reactions at illuminated semiconductor interfaces. *Mark S. Wrighton*

Surface characterization by photoemission of adsorbed xenon. *K. Wandelt*

Beam techniques for the analysis of non-conducting materials. *H. W. Werner*

Conformal coverage and masking. *A. Reisman*

Preparation of surfaces for high-quality interface formation. *J. L. Vossen, J. H. Thomas III, J.-S. Maa and J. J. O'Neill*

Step coverage and VLSI. *D. Fraser, W. Fichtner and R. Knoell*

Current issues on metallization in microelectronic devices. *K. N. Tu*

Plasma materials interactions and the design of high heat flux components. *W. B. Gauster, J. A. Koski and R. D. Watson*

A specialization of low-energy ion scattering spectroscopy and its application to surface studies of TiC. *M. Aono*

Role of plasma-wall interactions in destroying spin-polarization in plasma experiments. *D. E. Post*

Afternoon

Effect of gas composition on vacuum measurement. *K. F. Poulter*

Plasma enhanced chemical vapor deposition of semiconductors and silicides. *Rafael Reif*

Homogeneous chemical vapor deposition of amorphous semiconductors. *B. A. Scott*

Probing valence states with photoemission and inverse photoemission. *F. J. Himpsel and T. Fauster*

Surface preparation and corrosion of aluminum and titanium alloys. *W. L. Baun*

Pellet injection, development and experiments in IPP-Garching. *K. Büchl*

Fueling of the PDX tokamak. *G. L. Schmidt*

WEDNESDAY

Morning

Vacuum pump fluids. *J. O'Hanlon*

Resolution limits in dry processing. *E. D. Wolf, I. Adesida and J. D. Chinn*

Direct determination of surface structures from photoelectron diffraction. *J. J. Barton, C. C. Bahr, Z. Hussain, S. W. Robey, L. K. Klebanoff and D. A. Shirley*

Alkali-promoted gas adsorption and surface reactions on metals. *H. P. Bonzel*

Plasma-enhanced CVD: oxides, nitrides and transition metal silicides. *D. W. Hess*

Neutral beam heating of tokamaks: past performance and future applications. *H. Eubank*

Neutral beams for mirrors. *Joel H. Fink*

Generation of H^-, D^- ions on composite surfaces with application to surface/plasma ion source systems. *J. R. Hiskes and A. M. Karo; E. Wimmer and A. J. Freeman*

Afternoon

Leak detection—common problems and their solutions. *D. Santeler*

Design considerations for leaking, checking, and repair of future fusion devices. *G. Fuller*

Microfabrication using laser-induced chemistry. *R. M. Osgood*

Photoassisted dielectric deposition. *H. N. Rogers*

Studies of surface reconstruction and surface phase transitions on metals. *P. J. Estrup*

Theory of surface reconstruction of W(100) and Mo(100). *E. Tosatti*

Barrier layers: principles and applications in microelectronics. *M. Wittmer*

Measurement of hydrogen recycling parameters in the textor tokamak. *J. Winter, F. G. Waelbroeck, P. Wienhold, E. Rota and T. Banno*

THURSDAY

Morning

All aluminum alloy ultrahigh vacuum system for large scale electron–positron collider. *H. Ishimaru*

Vacuum pumping of multimegawatt neutral beam injection lines. *J. Kim*

Direct observation of the atomic structure at semiconductor interfaces. *F. A. Ponce*

Surface characterization by reflection high energy electron diffraction. *P. I. Cohen, J. M. VanHove, C. S. Lent and P. R. Pukite*

Theoretical studies of metal clusters and of chemisorption on metals. *R. P. Messmer*

Differences between positrons and electrons in elastic and inelastic processes at surfaces. *K. F. Canter; K. G. Lynn*

Surface and interface characterization in the investigation of materials problems involving polymers. *D. Briggs*

Sputtered thin films for perpendicular magnetic recording. *J. Judy*

Afternoon

An updated review of getters and gettering. *T. A. Giorgi*

Gettering in fusion devices. *J. L. Cecchi and R. J. Knize*

Background subtraction techniques in surface analysis. *J. T. Grant*

Evening

Evolution of the mirror machine. *C. C. Damm*

Controlled fusion. *M. B. Gottlieb*

FRIDAY

Morning

Perspectives on residual gas analysis. *D. Lichtman*

Electronic structure of metal/semiconductor interfaces. *T. McGill*

Nature of dispersed metal catalysts. *J. H. Sinfelt*

Molecule-surface interactions and dynamics. *R. Cavanagh and D. S. King*

Theoretical studies of surface diffusion. *J. D. Doll*

Molecular beam studies of gas-surface interaction potentials and adsorbate dynamics. *S. J. Sibener*

Focused ion beams as a microfabrication tool. *W. B. Thompson*

Ion-induced emission from metals under phase transitions. *V. E. Yurasova*

Advancements in remote nuclear plant maintenance. *T. J. Donnelly*

Afternoon

Microstructural studies of buried oxide silicon-on-insulator. *R. F. Pinizzotto, S. Matteson, H. W. Lam and S. D. S. Malhi; A. H. Hamdi, F. D. McDaniel*

The Si-SiO_2 interface: correlation of atomic structure and electrical properties. *P. O. Hahn and M. Henzler*

Phonon inelastic scattering of atoms and molecules from surfaces. *J. P. Toennies*

The adsorption of CO on Ni(100) studied by infrared emission spectroscopy. *P. L. Richards, S. Chiang and R. G. Tobin*

Ion beam engineering experimental laboratory. *T. Takagi*

Accelerated ion doping in Si MBE. *Yusuke Ota*