

AVS meets in Detroit

Topics will include vacuum technology, device processing, semiconductors, thin films, plasma devices and surface science

The 27th National Symposium of the American Vacuum Society will be held 13-17 in Detroit. The meeting will take place in the Plaza Hotel, the world's tallest hotel, located in Detroit's spectacular Renaissance Center. This year the technical program is the largest in the history of the Society. The Program Committee received 327 contributed papers for review and 283 were accepted for presentation; 199 in oral format and 84 in poster format. In addition, 70 invited papers will be presented. Thus the total is 353 papers, an increase of 38% over 1979. One of the reasons for the increase in the number of papers is the

expansion of the 1980 Vacuum Technology program to include three sessions on problems related to magnetic confined (plasma) fusion and four sessions on inertial confined fusion. In 1981 these topics will be covered in the new Fusion Technology Division, which was established by the AVS Board of Directors in June.

Liberal use is again being made of poster sessions to take advantage of the unique opportunities for exchange that this forum offers. A Vacuum Technology Division poster session on Vacuum Devices Tuesday morning will feature both oral and poster papers. A similar

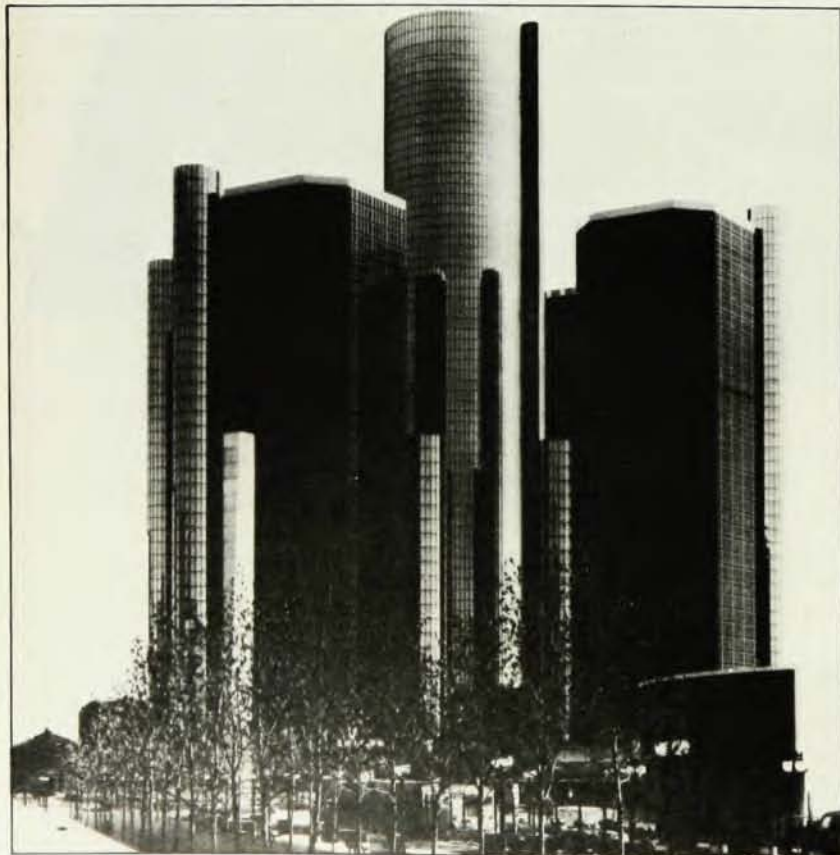
format will be used by the Thin Films Division Thursday afternoon in a session on characterization and diagnostics, in which invited speakers will make both oral and poster presentations.

The Surface Science and Electronic Materials and Processes Division will hold combined poster sessions Thursday evening in conjunction with an informal evening session on current controversies in surface science. The latter session replaces the old surface-science post-deadline session. Similarly, a poster session on target fabrication is scheduled for Thursday evening following a reception for the new Division of Fusion Technology.

Symposia and sessions

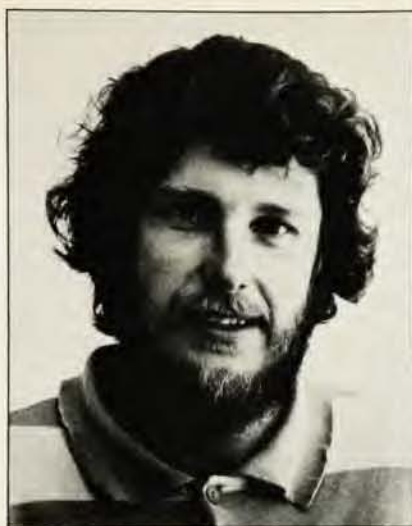
The AVS and the American Society for Testing and Materials E-42 Committee will co-sponsor sessions on chemical information from surface analytical techniques. During Tuesday morning's session H. H. Madden (Sandia National Labs) will speak on "Chemical Information from Auger Electron Spectroscopy;" D. F. Mitchell, G. I. Sproule and M. J. Graham (National Research Council of Canada) will discuss "Quantitative Auger Analysis (In Conjunction with Ion Sputtering) of Iron Oxides;" J. A. Kelber, R. R. Rye and G. C. Nelson (Sandia National Labs) will speak on "Auger Lineshape Analysis of Polyethylene and Poly (Ethylene Oxide);" S. S. Chao, E. A. Knabbe and R. W. Vook (Syracuse University) will talk on "Auger Line Shape Changes in Epitaxial (111)Pd(111)Cu Films;" R. R. Rye and G. D. Stucky (Sandia National Labs) will discuss "Auger Spectroscopy of Metal Carbonyls and Nitrosyls;" R. C. McCune will speak on "Chemical Effects in Ion Scattering Spectroscopy," and W. L. Baun (Air Force Materials Lab) will discuss

Detroit's architectural marvel, the spectacular Renaissance Center, site of the 1980 AVS National Symposium.





ALPERT



BRUNDLE

"ISS Chemical Effects in Elemental and Compound Semiconductors."

At Tuesday afternoon's session N. S. McIntyre (Atomic Energy of Canada, Ltd.) will talk on "Chemical Information from XPS;" D. R. Baer and M. T. Thomas (Battelle Northwest Labs) will discuss "Chemistry of Corrosion Layers on Amorphous Fe Cr Ni Pb Alloys;" D. E. Ramaker, C. T. White and J. S. Murday (Naval Research Lab) will speak on "Auger Induced Desorption of Covalent and Ionic Systems;" G. D. Davis, K. D. Childs, I. T. McGovern and M. G. Lagally (University of Wisconsin) will talk on "Correction for Loss Effects in Valence Band Photoemission Spectra by Deconvolution;" L. R. Pederson, M. T. Thomas and G. L. McVay (Battelle Northwest Labs) will speak on "Application of ESCA to Corrosion Studies of Glasses Containing Simulated Nuclear Wastes;" R. Colton (Naval Research Lab) will discuss "Molecular Secondary Ion Mass Spectroscopy (SIMS)," and G. C. Nelson, P. A. Neiswander and J. Q. Searcy (Sandia National Labs) will talk on "Lithium Compound Identification in Thermally Activated Batteries by Secondary Ion Mass Spectroscopy."

A session on nucleation-related phenomena will be held on Wednesday morning by the Thin Films Division. Speakers will be H. J. Leamy (Bell Labs), S. K. Dey and P. Sircar (University of Saskatchewan), F. Jansen (Xerox), M. Hecq and A. Hecq (University de l'Etat, Belgium), M. W. Geis (MIT Lincoln Labs), C. E. Wickersham, E. L. Foster and G. H. Stickford (Battelle Columbus Labs) and T. J. Moravec and T. W. Orent (Honeywell Corporation). On Thursday morning the Thin Films Division will present a session on "Superconducting Materials and Devices" featuring J. R. Gavaler (Westinghouse R & D Labs), S. A. Wolf, D. U. Gubser,

T. F. Francavilla and E. F. Skelton (Naval Research Lab), M. M. Collver and R. H. Hammond (Stanford University), J. H. Greiner, S. P. Klepner, H. C. W. Huang, J. M. Baker, C. Serrano and C. J. Kircher (IBM) and J. M. Vandenberg, S. Nakahara and A. F. Hebard (Bell Labs).

The Electronic Materials and Processes Division will present a session on "Physics of Device Processing" on Wednesday morning. Speakers will be J. W. Coburn and H. F. Winters (IBM), T. T. Sheng (Bell Labs), T. Sugano (University of Tokyo), J. M. Gibson (IBM), R. H. Hendel, D. D. Casey and C. U. Bickford (Tektronix) and A. Nauman and J. T. Boyd (University of Chicago). Friday morning the Electronic Materials and Processes Division will present "Silicide Interfaces and Schottky Barrier Formation." Speakers will be J. L. Freeouf (IBM), N. W. Cheung and P. J. Grunthaner (Caltech), J. W. Mayer and B. M. Ullrich (Cornell University), G. Ottaviani (Modena University, Italy), R. H. Williams (New University of Ulster) and P. E. Schmid, P. S. Ho, H. Foll and G. W. Rubloff (IBM).

"2D-Surface Phases" will be the topic of a session presented by the Surface Science Division on Wednesday afternoon and speakers will be S. C. Ying, G. B. Blanchet, P. J. Estrup and P. J. Stiles (Brown University), S. C. Fain, Jr., and M. Schick (University of Washington), A. R. Kortan, L. D. Roe-lofs, T. L. Einstein and R. L. Park (University of Maryland) and T. M. Lu, L. H. Zhao and M. G. Lagally (University of Wisconsin). On Thursday afternoon the Vacuum Metallurgy Division will present "Vacuum Metallurgy Processes" featuring G. K. Brat (Carnegie-Mellon University), B. Banerjee (Ingersoll-Rand Corporation), A. M. Taylor and N. R. Buck (Ad-

vanced Vacuum Systems, Inc.), G. J. Matarese, G. C. Muth and M. Bridwell (IBM), W. C. Herrmann, Jr., and L. W. Bryson (Optic-Electronic Corporation) and D. M. Sanders, E. N. Farabaugh, W. S. Hurst and W. K. Haller (National Bureau of Standards).

A session dealing with "New Generation of Plasma Devices and Reactions" will be presented by the Vacuum Technology Division on Wednesday afternoon. The speakers will be H. P. Furth (Princeton University), P. H. Sager (General Atomic Co. and Oak Ridge National Lab), L. C. Pittenger (Lawrence Livermore National Lab) and J. C. Glowienka (Oak Ridge National Lab).

Eighteen short courses will be offered during the week, covering such areas as surface analysis, vacuum technology, plasma etching, evaporation methods, thin films, cryopumping and pumping hazardous gases.

Ceremonial sessions

The AVS Awards Luncheon will be held on Wednesday afternoon in the Cabot Room. The 1980 Gaede-Langmuir Award will be presented to Daniel Alpert for "his contributions to the production, measurement and utilization of ultra-high vacua." Alpert attended Trinity College in Connecticut and received his PhD from Stanford University. He joined the staff of Westinghouse Research Laboratories in 1941 and remained there until 1957 as associate director. In 1957 he joined the University of Illinois at Urbana as a research professor of physics and he is now the director of the Center for Advanced Study.

Christopher R. Brundle will receive the first Peter Mark Memorial Award for "significant impact on the scientific and technological community in a wide range of activities including pioneering research in the development and application of photoelectron spectroscopy to surface science and catalysis, publications and technical leadership." Brundle received his BS in chemistry from the University of Manchester and his PhD from Imperial College, University of London and Balliol College, University of Oxford. He joined Bell Labs in 1968, then left in 1970 to be a lecturer in physical chemistry at the University of Bradford, UK. He joined IBM Surfaces and Thin Films Department at the San Jose Research Laboratory in 1975. In addition to these awards, nine scholarships will be presented to graduate students working in scientific programs within areas of interest to the AVS.

The Plenary Session of the 27th National Symposium will be held in the Columbus Room of the Detroit Plaza Hotel at 1:30 pm on Wednesday immediately following the Awards lun-

cheon. The session will include a lecture by Alpert and an address by AVS President, John L. Vossen.

Other events and services

As part of the activities of the National Symposium an Employment Opportunities Desk will be in operation to provide a contact point for prospective employees and employers. Those seeking employment will be able to examine the job openings and either specify the companies to which they wish their resumes to be given or to arrange for a direct contact. The desk will be staffed on Tuesday from 10:00 am to 5:00 pm, on Wednesday from 10:00 am to 12 noon and from 3:00 pm to 6:00 pm and on Thursday from 10:00 am to 3:00 pm.

The Program and Local Arrangements Committee has arranged a series of informal press conferences during the symposium. The purpose of the conferences will be to assist the press in preparing articles on the sciences and technologies represented by the AVS. Conferences will be set up on an appointment basis between members of the press and scientists and engineers who are in a position to describe and interpret the latest developments in the particular fields of AVS specializa-

tion, and who have expressed a willingness to assist members of the press in developing news and background stories.

For surface science, thin film, electronic materials and vacua, a wide range of systems, instruments and components will be on exhibit in Detroit, marking the biggest AVS show ever. Descriptions of displays by individual companies begin on page 51. Show hours are from noon to 7:00 pm on Tuesday, 10:00 am to 5:00 pm on Wednesday and 10:00 am to 3:00 pm on Thursday. Admission to the show is free.

"Motor City" is an exciting place with many things to see and do. The Local Arrangements Committee has made arrangements to offer several tours as part of the companion program. On Tuesday a tour group will visit several civic and cultural areas of Detroit such as the Art Institute Area, the New Center, the Medical Corridor and Wayne State University before moving on to Canada for a stop at the international boundary. Wednesday morning's tour will focus on Meadow Brook Estate, a baronial estate of 100 rooms containing many priceless antiques, wall hangings and original Re-

gency furniture. A luncheon will be served in the formal dining room to be followed by a narrated tour through the house and a walk through the gardens and woodlands.

Wednesday evening's destination is Canada's popular supper club, the Top Hat, where participants will enjoy dinner, dancing and entertainment. The evening will conclude with a scenic drive along Windsor's West River Drive to view the Detroit skyline at night.

Thursday's tour starts at the Ford Motor Company to view the recently completed steel mill, the Engine Plant and the assembly line process. In the afternoon there will be a choice of visiting Greenfield Village or the Henry Ford Museum. Greenfield Village is an outdoor museum which includes the laboratory where Thomas Edison developed the electric light bulb, the bicycle shop where the Wright brothers created the first airplane, the courthouse where Lincoln practiced law and the house where Henry Ford was born. The Henry Ford Museum contains outstanding examples of Early American art and antiques, a street of Early American shops and a Mechanical Arts Hall.

B.J.

Invited papers and special events

MORNING

Surface Science: Surface Electronic Structure *Smith, Arlinghaus, Gay, Wollfram, Norshov, Tully*

Electronic Materials and Processes: Epitaxial Growth for Device Applications *Duchemin, Hirtz, Bonnet, Bauser, Bachrach, Bean*

Vacuum Technology: Vacuum Devices *Walko*

ASTM E-42/AVS: Chemical Information and Surface Techniques I *Madden, McCune*

AFTERNOON

Thin Films: Sputtering and Ion Beam Deposition *Weissmantel*

Surface Science: Chemisorption on Surfaces and Clusters *Bagus, Moskovits*

Electronic Materials and Processes: Growth and Structure of Interfaces *Wood*

Vacuum Technology: Hazardous Gas Handling in Semiconductor Fabrication Processes *Kumagai, Wauk, O'Hanlon*

ASTM E-42/AVS: Chemical Information and Surface Techniques II *McIntyre, Colton*

MORNING

Thin Films: Nucleation Related Phenomena *Leamy, Geis*

Surface Science: Geometric Structure of Surfaces and Adsorbates *Tong, Stensgaard*

Electronic Materials and Processes: Physics of Device Processing *Coburn, Winters, Sugano, Gibson*

Vacuum Technology: Plasma-Materials Interactions *Ulrickson, Husinsky*

AFTERNOON

Surface Science: 2D-Surface Phases *Ying, Fain, Schick, Kortan, Roelofs, Einstein, Park*

Electronic Materials and Processes: Physical Limitations of High Speed Devices *Yu, Van der Hoeven, Wieder*

Vacuum Technology: New Generation of Plasma Devices and

Reactions *Furth, Sager, Pittenger, Glowienka*

Education: Education/Training for Vacuum Science and Technology *Anderson, Lichtman, McQuistan*

MORNING

Thin Films: Superconducting Materials and Devices *Gavaler, Wolf, Gubser, Francavilla, Skelton, Greiner, Klepner*

Surface Science: Binary Alloy Surfaces *Abraham, Schmidt*

Electronic Materials and Processes: Atomic and Electronic Structure of Semiconductor Surfaces *Webb, Bennett, Chadi, Houzay, Guichar, Pinchaux, Petroff*

AFTERNOON

Thin Films: Characterization and Diagnostics *Chang, Reuter, Aspnes*

EM&P/Surface Science: Surface Oxidation of Metals and Semiconductors *Goddard, Lindau, Holloway*

Vacuum Technology: Microfabrication and Target Assembly *Deckman*

Vacuum Metallurgy: Vacuum Metallurgy Processes *Bhat, Banerjee, Matarese, Muth, Birdwell*

MORNING

Thin Films: Plasma Assisted Processing *Fraser, Murarka, Tretola, Sinha*

Surface Science: Surface Reactions *Fishner, Weinberg*

Electronic Materials and Processes: Silicide Interfaces and Schottky Barrier Formation *Freeout, Cheung, Grunthaner, Mayer, Ullrich, Ottaviani, Williams*

Vacuum Technology: Coatings on Targets *Meyer, Liepins, Campbell, Clements, Hammond, Fries*

AFTERNOON

Electronic Materials and Processes: Oxide-Semiconductor Interfaces *Schwartz*

Vacuum Technology: Fuel Containers and Cryogenic Targets *Nolen*