DEFECTS IN INSULATORS

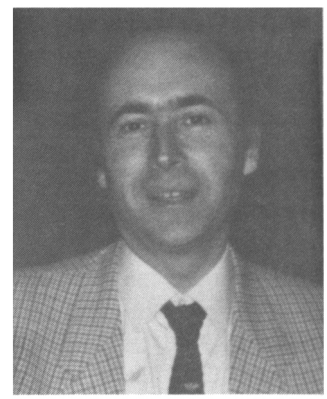
An MRS-Europe Symposium Report

The symposium on "Induced Defects in Insulators" covered many aspects of the interaction of radiation with insulating materials, with contributions from a broad scientific community. In all, 42 papers were presented, treating topics in an interdisciplinary manner.

A new field with an increasing interest is the study of the distribution of light ions and foil destruction after implantation of organic polymers. The research appears particularly important for lithography in the fabrication of semiconductor devices, where the lateral dimensions are pushed down to several Angstroms. The processes related to plasma erosion of non-metal first wall materials in fusion devices were reviewed and their relative importance was assessed, particularly for the problems connected with plasma contamination and mechanical or thermal stresses. It was also clear that radiation damage investigations in insulators assume a central role in nuclear waste management, because glass is a serious candidate material for waste disposal. A number of papers demonstrated the growing interest in optoelectronic materials for data processing, radiation effects in glass fiber cables, and electron-beam irradiation of electronic devices.

Several contributions were given on analysis techniques in insulators, such as nuclear techniques for hydrogen detection, ESR, AES, ESCA, and optical spectroscopy, emphasizing potential applications for defect characterization.

Ions or atoms with energies ranging from a few eV to MeV are formed in radiation belts, stellar winds, and cosmic rays, and as secondary particles from sputtering or knock-on processes. Their collisions may induce hot chemical reactions. Papers presented showed how laboratory simulations provide information on organic molecules in intersteller solids and on the potential abiotic formation of biomolecules in space.



P. MAZZOLDI

It is worth remarking that many of the contributions on topics described above arose from the pursuit of the interdisciplinary approach required to connect technological applications to the basic interactions of energetic ions with insulators.

This meeting was an ideal bridge between the second (Albuquerque 1983) and the planned Third International Conference on Radiation Effects in Insulators (REI '85), which will be held in July 1985 at Guildford, Surrey.

P. Mazzoldi
Padova, Italy

CALENDAR

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MARCH 1985

24-28 AIChE Spring National Meeting
Houston, TX
AIChE, Meetings Dept., 345 E. 47th St., New York, NY 10017
(212) 705-7320

25-29 American Physical Society General Meeting
Baltimore, MD
W. Havens, Jr., 335 E. 45 St., New York, NY 10017

APRIL 1985

15-18 MATERIALS RESEARCH SOCIETY SPRING CONFERENCE
San Francisco, CA
J.B. Ballance, Executive Director
Materials Research Society
9800 McKnight Road, Suite 327
Pittsburgh, PA 15237 (412) 367-3003

25-27 American Physical Society Spring Meeting
Washington, DC
W. Havens, Jr., 335 E. 45th St., New York, NY 10017

MAY 1985

12-17 Electrochemical Society Spring Meeting
Toronto, Ontario, Canada
The Electrochemical Society
10 S. Main St., Pennington, NJ 08534-2896

13-17 International Conference on Nuclear Data
for Basic and Applied Science
Santa Fe, NM
Phillip G. Young, Conference Chairman,
Mail Stop B243, Los Alamos National Laboratory,
Los Alamos, NM 87545

JULY 1985

23-25 Physical Interactions and Energy Exchange
at the Gas-Solid Interface
Hamilton, Ontario, Canada
Prof. J.A. Morrison
Institute for Materials Research
McMaster Univ., Hamilton, Ontario, Canada L85 4M1