SYMPOSIUM L

Plasma Processing And Synthesis Of Materials

Symposium L was well attended, with the number of participants exceeding 150.

The three-day program began with a set of plenary lectures providing a review of the current state of the art. The topics covered were:
"Overview of Plasma Processing" (J. Szekely)
"Plasma Generation" (E. Pfender)
"Plasma Diagnostics" (P. Fauchais)
"Modeling of Plasma Processes" (M. Boulos)
"Thermal Plasma Melting/Remelting Technology" (W. Roman)
"Plasma Extractive Metallurgy" (W.H. Gauvin)
"Rapid Solidification, Particle Deposition" (D. Apelian)
"Research Needs in Arc Technology" (J.V.R. Heberlein)

This overview was followed by four separate sessions, devoted to the following topics:

- Gas-Solid Reactions and Extractive Metallurgy in Thermal Plasmas
- Plasma Synthesis, Melting and Coatings
- Properties of Materials Produced in Plasmas
- Plasma Diagnostics

Many of the papers provoked a lively discussion. The conference provided further evidence of the renewed interest in plasma processing and of the great need to build bridges between the research efforts aimed at processing on the one hand and on evaluating structure-property relationships on the other.

J. APELIAN (left) and J. SZEKELY

D. Apelian
Drexel University
J. Szekely
Massachusetts Institute of Technology
Chairmen

SYMPOSIUM D

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year investigation of the adequacy and relevance of nuclear waste-related research for repository licensing. One of the many conclusions presented was that current radionuclide release experiments are not conducted in a manner usable for repository licensing. This is because the nuclear waste form sits in an infinite volume of water in the repository environment and, under most conditions, the radionuclide release is determined at least partially by liquid phase diffusion. Experiments, on the other hand, are typically done in either a static environment with a fixed, rather small, volume of water or in a flowing environment where the flow rates are sufficiently high (because of experimental difficulties) so as to not allow any liquid phase diffusion control. Professor Pigford suggested dynamic experiments conducted in large vessels containing a porous medium.

A poster session was held on Wednesday evening from 7 to 10 p.m. in conjunction with three other symposia. There were 31 posters for Symposium D and comparable numbers for the other symposia, which resulted in a large and rather well attended poster session. Food and drink served at the poster session added to its success.

Because of the large number of high quality papers submitted, parallel sessions were conducted on Thursday, the last day of the meeting. This was the first time that parallel sessions have been utilized for Symposium D. Both sessions were reasonably well attended, but the desirability of continuing double sessions in the future is questionable due to the competition between interesting papers.

G.L. McVay
Pacific Northwest Laboratory
Chairman

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