

Finally, G. Petite (CEA, France) gave a very instructive presentation on electron emission associated with laser solid interactions both in metals and dielectrics.

Diagnosics

The physical mechanisms of ablation remain controversial but are expected to largely depend both on the physico-chemical properties of the target and laser irradiation conditions. This is why it appears of paramount importance to analyze the plasma formation and species emission from laser treated targets using *in-situ* time- and space-resolved techniques.

Laser ablation of high T_c superconductor and semiconductor targets under vacuum and gaseous conditions was investigated by P.E. Dyer (University of Hull, U.K.), K. Murakami (University of Tsukuba, Japan), and A. Catherinot (University of Limoges, France) using optical spectroscopy and/or fast imaging techniques.

D.B. Geohegan (Oak Ridge National Laboratory, U.S.A.) extensively studied

laser-produced plasma from YBaCuO targets by a combined set of *in-situ* diagnostics such as ion probes, optical emission and absorption spectroscopy and ICCD photography.

Applications

As clearly depicted by H.U. Habermeier (Max-Planck-Institut, Germany) and J. Perriere (University of Paris 6-7, France) for YBaCuO and BiSrCaCuO, respectively, laser ablation is able to produce high quality films of the new superconductor compounds, meeting industrial requirements.

These successful results explain the recent growing interest in depositing and synthesizing thin films of new materials with this novel technique. J.T. Cheung (Rockwell I.S.C., U.S.A.) also emphasized the technique for growing epitaxial layers of CdTe, HgCdTe, and their superlattices as did D.H. Lowndes (Oak Ridge National Laboratory, U.S.A.) for fabricating epitaxial copper oxide semiconductor/superconductor heterostructures.

Another important area is laser surface patterning of electronic materials. Laser surface modification and ablation of polymers, important in microelectronics, was reviewed by A. Yabe (NCLI, Tsukuba, Japan).

An interesting comparison between laser ablation and laser etching of silicon in a chlorine atmosphere was presented by J. Boulmer (IEF Orsay, France). Finally, in instrumentation, J.F. Muller (University of Metz, France) demonstrated that laser ablation coupled with a mass spectrometer could be an alternative tool for surface characterization and material analysis.

A proceedings including invited and contributed papers is under preparation and will be published by Elsevier/North Holland.

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UPCOMING CONFERENCES

1992 P/M Congress to Feature Powder Metallurgy, Particulate Materials

The 1992 Powder Metallurgy World Congress, June 21-26, San Francisco, California, will air its largest technical program yet on powder metallurgy and particulate ma-

terials. Sponsored by the Metal Powder Industries Federation and the American Powder Metallurgy Institute, the congress will feature more than 400 presentations in technical sessions, seminars, specialty symposiums on emerging technologies, and poster sessions. More than 2,500 delegates are expected from 40 countries. The

Congress is held once every four years in North America.

Program topics cover metal powder production techniques and properties, powder consolidation and production techniques, specialty materials, and new applications of the technology.

Some specific subjects to be covered include high-temperature and liquid-phase sintering, powder injection molding, thermal spraying, wear-resistant materials, nanoscale materials, hybrid packaging and other electronic materials, intermetallics, metal matrix composites, rapid solidification technology, superconductors and lightweight alloys.

Special programs will review powder injection molding, the automotive and P/M industries, emerging P/M composites, mechanical alloying, and super plastic forming of P/M parts.

In addition to the technical program, the conference will include a trade exhibition featuring materials, equipment, and products from international suppliers.

The metal powder field is growing in Western and Eastern Europe and in the Pacific Rim nations. Annual worldwide metal powder shipments exceed 800,000 tons.

For further information and a copy of the technical program, contact: Metal Powder Industries Federation, 105 College Road East, Princeton, New Jersey 08512; phone (609) 452-7700; fax (609) 987-8523. □

Announcement

Second Conference on Computational Research on Materials

April 12, 13, and 14, 1992
Lakeview Resort and Conference Center
Morgantown, West Virginia

Join leading material researchers from universities, industry, and national laboratories in assessing the aims and latest developments in the computational materials research agenda:

- the national materials research agenda and materials modeling
- industrial applications of computational materials modeling
- atomistic and continuum modeling for the design of both structural and functional materials systems
- the role of highly parallel computing for specific problems
- linking experimental verification to atomistic and continuum modeling

For more information, contact:

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