CAPCE Newsletter

Volume 2 Issue 1 http://www.capce.ohio-state.edu Summer/Autumn 1999

Center for Advanced Polymer and Composite Engineering at The Ohio State University

Microfabrication Equipment Award

A $1.4 million equipment grant was recently awarded by the Ohio Board of Regents Hayes Investment Fund. The funds will establish processing and characterization facilities for microfabrication of non-silicon materials with an emphasis on polymers. The equipment will be shared by Prof. Marc Madou, Director of the NSF Center for Industrial Sensors and Measurements (CISM), CAPCE faculty members L. James Lee, Kurt Koelling, and Jose Castro, and several faculty at the University of Cincinnati and Case Western Reserve University.

Acquisition of the following equipment is underway:

- Electro-plating station
- Atomic force microscope (for plastics)
- Laser cutting and drilling
- Multi-target thin film deposition system
- Surface tensiometer
- Continuous lamination system
- Micro-molding station

The new facilities will allow CAPCE researchers to make steel, nickel and quartz mold inserts for fast prototying or large volume molding of miniature plastic parts with 2D and 3D features. Research will initially focus on the development of polymer based microfabrication technology, such as precision injection molding, embossing, and reactive molding, and its applications to bio- and chemical-MEMS. Other applications of interest are in the automotive, aerospace, electronic, telecommunication, and imaging industries. For more information contact Dr. Lee.

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New CAPCE Member

GenCorp Performance Chemicals recently joined CAPCE through an Affiliate Membership agreement that recognizes equipment donated to the Composite Lab. *The GenCorp Foundation* also provided funding to establish a $10,000 CAPCE Fellowship. The Fellowship will support a CAPCE graduate student at Ohio State in in-mold coating research, under the direction of Dr. Jose Castro.

Upcoming IAB Meetings

The next two CAPCE Industrial Advisory Board meetings will be held on October 26, 1999, at the Holiday Inn on the Lane, and on April 25, 2000, at the University Ramada Hotel. Both meetings are in Columbus, Ohio. Non-member companies may attend the concurrent Technical Reviews. For more information contact Paula Stevenson at 614-292-1600 or stevenson.2@osu.edu.

New Research Projects

New CAPCE-related projects funded by non-industry sources include:

"Microfabrication of Non-Silicon Materials with an Emphasis on Polymers," Ohio Board of Regents Hayes Investment Fund, $1.4 million (see lead article).

"Enhanced Polymer-Polymer Blending and Polymer-Fiber/Filler Compounding Using Supercritical Carbon Dioxide," sponsor: NSF, P.I. David Tomasko, Co-PI L. James Lee, $360,000.

"Supercritical Fluids Enhanced Nano-Composites for Dental Applications," interdisciplinary seed grant award, P.I. L. James Lee, Co-P.I.'s Kurt Koelling and Robert Seghi, sponsor: The Ohio State University, $50,000.

"Material Characterization of Agricultural and Industrial Solutions and Melts in Extensional Processes," P.I. S.E. Bechtel, co-P.I. M.G. Forest, sponsor: NSF, $210,000.

CAPCE Members

Bell Helicopter	Geon
Cinpres	HPM
C-MOLD	Mattel/Fisher Price
CCP	METSS
Dow Chemical C&A	MFG
Dow Chemical PPG	Plaskolite
Dupont Automotive	Premix
Eastman Kodak	Siemens Automotive
Flexsys	Sumitomo
Ford Motor	Union Carbide
GenCorp	U.S. Precision Lens

Snap-Fit Seminar

Dr. Anthony Luscher recently presented two 1-day snap-fit design seminars. The traveling seminar presents 4 hours of training on attachment strategy and 4 hours of feature design information including analysis, testing, and guidelines. If two days are available, additional presentations on the latest research results are available as well as a breakout session where one-on-one design interaction is offered. To schedule a seminar for your company, please contact Dr. Luscher.