

**North Carolina Section of the American Chemical Society
ACS Polymer Discussion Group**



Thursday January 11, 2007

University Club: North Carolina State University

*Social Hour: 5:30 PM

**Dinner: 6:00 PM

Program: 7:00 PM

Novel nanomolding technologies for the production of monodisperse, shape-specific particles and patterned films

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Abstract:

We have developed scalable, “top-down” nanofabrication methodologies for the fabrication of polymeric and organic nanomaterials for nanobiotechnology and materials science. These techniques use novel perfluoropolyether (PFPE) elastomers that possess superior nanoimprinting properties such as error-free nanoscale shape replication of microfabricated, self-assembled, and biological materials. We have used these elastomers to produce monodisperse, shape-specific organic nanoparticles of many compositions for applications such as particulate drug-delivery agents in the life sciences and to produce high-fidelity patterned films. To demonstrate the unique capability of our molding technologies, we have molded and replicated soft, “self-assembled” materials such as viruses to produce novel bio-replica interfaces. These novel molding technologies combine the robust processing capabilities of the microelectronics industry with the flexibility and sophistication of traditional organic materials chemistry to produce unique nanostructured materials that should find many applications in nanomedicine and materials science.

* Social hour will consist of a cash bar.

** Contact Russell Gorga at (919) 515-6553 or regorga@ncsu.edu (email preferred) for dinner reservations by noon on Tuesday January 9, 2007, to guarantee a reservation for dinner. If you are unable to make a reservation by that time, check with Russell regarding the availability of places. Dinner is \$15 for Members and \$8 for students. Reservations are *not* required to attend the seminar without dinner.