

Project title: Low-k Dielectric Materials by Diblock Copolymer Deposition
Investigator: Heather Galloway
Department: Physics/Science

Project summary:

We have demonstrated the ability to prepare thin films of PMMA/PS diblock copolymers and to investigate their surface properties using AFM. We have also confirmed the required surface preparation and annealing times for these substrates. Future work will concentrate on other diblock polymers as well as using our extension to preparing these materials on SiC and SiCN to test their electrical properties.

Publications:

Molecular Modeling and Synthesis of Polymers for use in Applications Requiring a low-k Dielectric, Gary W. Beall and Suresh Murugesan, Department of Chemistry and Biochemistry, Heather C. Galloway, Deborah C. Koeck, and Jeremy Jarl, Francine Abrego, Department of Physics, Texas State University, Polymer 46 (November 2005) 11889-11895.

Synthesis and characterization of copolymer poly(bis-trifluoromethyl styrene) and PMMA for nanowire applications, S. Murugesan, S.R. Venumbaka, P.E. Cassidy, H.C. Galloway, J. Jarl, F. Abrego, D.C. Koeck, C. Martinez, Abstracts Of Papers Of The American Chemical Society 228: U341-U341 102-Poly Part 2 Aug 22 2004

Presentations:

Presented at Texas Section Joint Physics Meeting - Fall 2005, Fabrication of Waveguides for Characterization of Low-k Dielectric Thin Films.

James S. McDonald, Kevin P. Radican, Heather C. Galloway, David Donnelly, Deborah C. Koeck (Department of Physics, Texas State University-San Marcos)