

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Polymeric Template Assisted Formation of Gradient Concentric Metal and Metal Oxide Rings SUCK WON HONG, ZHIQUN LIN, Department of Materials Science and Engineering, Iowa State University, Ames, IA 50011 — Gradient concentric rings of polymers, including (poly[2-methoxy-5-(2-ethylhexyloxy)-1,4-phenylenevinylene] (MEH-PPV) and poly (methyl methacrylate) (PMMA), with unprecedented regularity were formed by repeated “stick-slip” motion of the contact line in a sphere-on-flat geometry. Subsequently, polymer rings served as templates to direct the formation of concentric metal and metal oxide rings. Three methods were described. The first two methods made use of either UV (i.e., on MEH-PPV) or thermal treatment (i.e., on PMMA) on metal-sputtered polymer rings, followed by ultrasonication. The last method, however, was much simple and robust, involving selective removal of metal and metal oxide and polymer (i.e., PMMA) consecutively.

Suck Won Hong
Iowa State University

Date submitted: 03 Dec 2006

Electronic form version 1.4