

Abstract Submitted  
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**Self-assembly of block-copolymers on binary chemical nanopatterns** GABRIEL BARALIA, BERNARD NYSTEN, ALAIN M. JONAS, Polymer Physics and Chemistry, University of Louvain, Louvain-la-Neuve, Belgium — Thin films of block-copolymers have received great attention as they can self-assemble in ordered periodic structures at the molecular scale [1]. There are different ways by which ordering can be obtained over large areas [2-4]. One such way consists of the local tailoring of the substrate by placing chemical moieties at regularly repeated locations [5]. Here we present another versatile way to control the ordering of block-copolymers over micrometer-scale areas. Fabrication process and examples of chemically nanopatterned substrates will be first shown. The substrates are created by combining the ability of the e-beam lithography to create nanometer-scale regions with self-assembly of alkanethiols. In a second part, the study of self-assembly of symmetric and asymmetric block-copolymers on such nanopatterns will be presented. References [1] F. S. Bates, *Science*, **251**, 898 (1991). [2] T. L. Morkved *et al.*, *Science* **273**, 931 (1996). [3] M. D. Morariu, N. E. Voicu, E. Schaffer, Z. Lin, T. P. Russell, U. Steiner, *Nature Materials* **2**, 48 (2003). [4] C. Park *et al.*, *Appl. Phys. Lett.* **79**, 848 (1996). [5] S. O. Kim, H. H. Solak, M.P. Stoykovich, N. J. Ferrier, J. J. de Pablo, P. F. Nealey, *Nature* **424**, 411 (2003).

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