Abstract Submitted
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**Spatially Organized Polymer Films Prepared by Oblique Angle Polymerization** NIRANJAN MALVADKAR, MELIK DEMIREL, Pennsylvania State University — We developed a novel, bottom-up method to prepare nanostructured poly(*p*-xylylene) (PPX) films called oblique angle polymerization (OAP). In OAP, the monomer vapor flux is directed at an angle ($< 10^o$) to the substrate. The morphology of the film is influenced by the combination of nucleation, surface diffusion and geometrical self-shadowing. The final nanostructure consists of 40 $\times$ $10^6$ /mm$^2$ obliquely aligned, quasi-periodic PPX nanowires on the substrate[1]. The nanostructure can be controlled by tuning the physical deposition parameters and/or the monomer chemistry. Functional materials prepared by depositing conformal metal layer on these nanostructured PPX films have opened new avenues of application in the areas of biodetection[2] and catalysis[3]. [1] Cetinkaya, M., Malvadkar, N., Demirel, M. J. Poly. Sci. B, 46, 640 (2008). [2] Kao, P., Malvadkar N., Wang, H., Allara, D., Demirel, M. Adv. Mat., 20, 3562 (2008). [3] Malvadkar, N., Park, S., MacDonald, M., Wang, H., Demirel, M. J. Power Sources, 182, 323 (2008).


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