

Abstract Submitted
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Polymer Single Crystal Templated by Quasi-One Dimensional Materials BING LI, ERIC LAIRD, XI CHEN, WENDA WANG, CHRISTOPHER LI, Department of Materials Science, Drexel University, Philadelphia, PA 19104 — Quasi-one dimensional materials such as nanotubes and nanofibers can induce polymer crystallization and in many cases, the resultant crystals mimic shish kebabs. This hybrid structure is of great interests from both scientific and technological standpoint. We have explored a few quasi-one dimensional structures such as carbon nanotubes and polymer nanofibers. The growth of the crystals is confined by the quasi-one dimensional nucleating sites provided by the tubes/nanofibers. The crystals formed are sensitive to the surface chemistry and diameter of the materials. Using block copolymers allowed us to achieve templated patterning on these one dimensional structures with controlled spacing and the mechanism was attributed to the crystallization driven block copolymer phase separation. Detailed mechanisms will be discussed.

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