

Abstract Submitted
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Highly Ordered Superstructures of Single-Walled Carbon Nanotubes in Polymeric Systems SUNG-MIN CHOI, HYOUNG-SIK JANG, CHANGWOO DOE, TAE-HWAN KIM, Department of Nuclear and Quantum Engineering, KAIST, Daejeon, Republic of Korea — Fabrication of highly ordered arrays of single-walled carbon nanotubes (SWNTs) has been of great interest for a wide range of potential applications. Block copolymers exhibit rich phase behavior and have been extensively used as excellent templates for highly ordered nanostructure materials with various architectures. Therefore, utilization of the rich phase behavior of block copolymers may provide a general and inexpensive way for fabricating a large variety of self-assembled and highly ordered arrays of SWNTs without going through complicated preparative procedures. Here, we investigated the cooperative self-assembling behavior of functionalized isolated SWNTs in Pluronic block copolymer systems using small angle neutron and x-ray scattering techniques, which show highly ordered superstructures of SWNTs with different symmetries.

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