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Crystallization behavior of polyethylene under nanoscopic cylindrical confinement WOOJUNG CHO, EUNTAEK WOO, School of Chemical and Biological Engineering, Seoul National University, Seoul 151-742, South Korea, JUNE HUH, Active Polymer Center for Pattern Integration, Yonsei University, Seoul 151-742, South Korea, YOUNGGYU JEONG, School of Advanced Materials and Systems Engineering, Kumoh National Institute of Technology, Gumi 730-701, South Korea, KYUSOON SHIN, School of Chemical and Biological Engineering, Seoul National University, Seoul 151-742, South Korea — Due to the increasing usage of nanoscopic materials, fundamental understanding of the crystallization is more and more demanded. In this presentation, we will discuss the crystallization behavior of linear polyethylene confined in cylindrical nanopores. We observed the crystallization mechanism transition from homogeneous nucleation to heterogeneous nucleation upon the tightening of the confinement. We also found that the crystalline structure, examined by x-ray diffraction and calorimetry, shows deviations from those of bulk and the crystal formation is severely influenced by the imposed confinement.

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