

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Polymer Lamellar Crystals Containing Precise Half-Folds Confined by Nano-Particles of Giant Molecular Shape Amphiphiles XUEHUI DONG, None — Chain-folded polymer lamellar crystals with precise half-folds were first time experimentally observed in two specifically designed giant molecular shape amphiphiles. These molecules were synthesized via Click Chemistry to construct a nano-particle such as polyhedral oligomeric silsesquioxane (POSS) or [60]fullerene (C_{60}) tethered a poly(ethylene oxide) (PEO) chain as a tail. When these PEO tails crystallized, both integral folded crystals and crystals with the half-folds were identified experimentally. This is due to the fact that during the PEO tail crystallization, the nano-particles at ends of PEO chains build up double layered structures to impose the PEO chains to create specific number of stems in their crystals which must balance the cross-sections of the nano-particles and the stems.

Xuehui Dong
None

Date submitted: 09 Nov 2012

Electronic form version 1.4