

Abstract Submitted
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A Mesoscopic Archimedean Tiling Having a New Complexity in ABC Star-shaped Block Terpolymers TOMONARI DOTERA, Department of Polymer Chemistry, Kyoto University, ATSUSHI TAKANO, Department of Applied Chemistry, Nagoya University, WATARU KAWASHIMA, Department of Applied Chemistry, Nagoya University, ATSUSHI NORO, Department of Applied Chemistry, Nagoya University, YOSHINOBU ISONO, Department of Chemistry, Nagaoka University of Technology, NOBUO TANAKA, Ecotopia Science Institute, Nagoya University, YUSHU MATSUSHITA, Department of Applied Chemistry, Nagoya University — The Archimedean tiling ($3^2.4.3.4$) is a regular but complex polygonal tessellation of equilateral triangles and squares. We have found the tiling in a melt of an ABC star-shaped polymer alloy molecule composed of polyisoprene, polystyrene and poly(2-vinylpyridine). The circumstance of a molecule splits into multiple sites and consequently two microdomains with different sizes and shapes are formed for one component. This complexity is the first observation in polymeric alloy systems and can lead to a new type of mesoscale self-organization.

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