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Introduction to Soft Matter

Tuesday, 16 June 2015 09:00 (45 minutes)

Soft materials are characterized by both, complexity and flexibility, where structure is often defined in terms of time scales. In particular, the spontaneous association (self-assembly) process of their molecules into a 3-D geometry can be expanded to the control of more complex nanometer-scale functional systems. Areas of interest encompass phase separation and self-assembly of block copolymers and metal-polymer nanocomposites in thin film geometry, as well as nanomaterials for energy related applications. Some examples of thermodynamic and kinetic driven interfacial self-assembly processes will be discussed. Structural/property investigations using a diverse range of experimental techniques such as small- and wide angle X-ray/neutron scattering methods, electron and atomic force microscopy, as well as optical, electrical and magnetic analyses will be presented.

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