

BICONTINUOUS NANOPHASIC AMPHIPHILIC POLYMER CONETWORKS AND THEIR GELS AS NANOREACTORS AND SPECIALTY NANOHYBRIDS THEREOF

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Amphiphilic conetworks (APCNs) [1-7] composed of covalently bonded otherwise immiscible hydrophilic and hydrophobic polymer chains belong to a new class of rapidly emerging nanostructured materials. The structure and morphology of APCNs are shown in Figure 1.

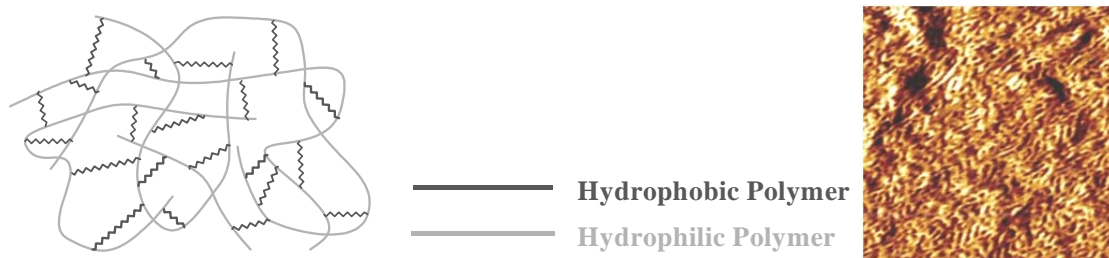


Figure 1. Schematic structure of an amphiphilic polymer conetwork (APCN) and an AFM image of the bicontinuous nanophasic morphology (image size: 250x250 nm).

Unique bicontinuous (cocontinuous) nanophase separated morphology exists in APCNs in a broad composition window. This is the basis for the preparation of various specialty new intelligent (responsive) gels and organic-inorganic nanohybrids by applying one of the nanophases as nanoreactor. The resulting novel materials have a variety of high added-value potential applications from nanocatalysis and photonics to biomaterials etc.

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