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# Nanostructured plastics: Joys of self-assembling

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**Abstract**

With the annual production of millions of tons the few commodity polymers that dominate the market cannot satisfy all the expectations. In this context, the fabrication of polymer-like materials structured on submicrometer or nanometer scale by self-assembly of existing or simple to synthesize molecules raises much hope, but poses significant scientific and industrial challenges. Paradoxically, molecular disorder or imperfections inherent in the synthesis method can be a boon in designing and fabrication of self-assembled materials with unique combinations of properties impossible or difficult to achieve otherwise. We illustrate such versatile, simple and potentially low cost strategies for two classes of self-assembled systems: plastics reinforced by copolymer dispersions and nanostructured bicontinuous plastics made by reactive blending of industrially available polymers.