



## **The power of soft material self-assembly and its applications**

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Self-assembly is a process by which isolated components organize autonomously and spontaneously into ordered and/or functional structures. Scientists and engineers have recognized the power of the self-assembly for building complex structures from small objects. This talk will outline two types of self-assembly, dynamic and static. Block copolymers (BCPs) are a fascinating class of materials that naturally self-assemble into nanodomains with tunable size and shape. Exciting possibilities and a range of applications exploiting BCP self-assembly, such as plastic solar cells, nanopatterning/lithography, and bio/gas sensing devices will be discussed. I will also illustrate some dynamic self-assembled systems in which the mode of organization depends on the amount of energy delivered to the system. Such systems are candidates for use in microfluidic mixing in lab-on-a-chip devices.