

The Fabrication of PS-P4VP Micellar Template for Nanoparticle 2-D Arrays

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We presented a simple approach for the fabrication of 2-D array of metal-sulfide and metal nanoparticles on solid substrates with tunable size and interspacing by using block copolymer micellar template. Metal-ions are selectively sequestered into P4VP core by opening the core of PS-P4VP micellar template by immersing the template in metal salts-methanol solutions. Metal-ions are selectively sequestered into P4VP core by opening the core of PS-P4VP micellar template by immersing the template in metal salts-methanol solutions. The coordinated metal ions were converted to metal-sulfide and metal nanoparticles by dipping in Na₂S-methanol and NaBH₄-methanol solutions respectively at room temperature. The approach presented here allows easy integration of metal-sulfide and metal nanoparticles on the solid substrates, which could be applied for many advanced functional materials such as photonics.