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## Microspheres pattern forming using self-assembly template prepared by convective deposition

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Stacks pattern of microspheres and nanoparticles can be deposited by layer-by-layer coating with several methods. In this work, we fabricated two monolayers of polystyrene microparticle by convective horizontal deposition. For initial layer, glass substrate was dragged with velocity of  $25 \mu\text{m/s}$ , and applied horizontal vibration with frequency of 50 Hz in order to supply higher kinetic energy for better assembly. Size of polystyrene microparticles was 3.2 micrometer for this initial template coating and for the second layer microparticle size was varied with 0.93, 1.00, and 1.50 micrometer. The packing of second layer was investigated by scanning electron microscope. The filling quality of second coating layer strongly depend on particle size and dragging velocity. For the same dragging speed, the microparticle of 0.93 micrometer trended to be well arrangement on the initial template with honeycomb pattern.

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