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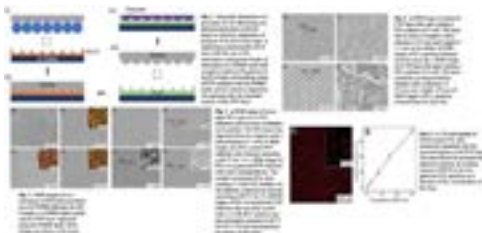
MATERIALS SCIENCE AND ENGINEERING

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Fabrication of poly(ϵ -caprolactone) (PCL) particles with non-spherical geometries via selective dewetting and deposition of the polymer

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This paper explains a simple, inexpensive method for the fabrication of non-spherical polymeric particles. This method involves the use of a mechanical rubbing-assisted colloidal crystal to generate a substrate with an array of dimples on its surface, followed by selectively depositing a polymer into the dimples. As a proof-of-concept experiment, we demonstrated the fabrication of poly(ϵ -caprolactone) (PCL) particles with non-spherical shape. The shape of the polymer particles could be controlled from disk to hemisphere by changing the surface structure and property of the substrate and the concentration of the polymer solution. When functional components including drug molecules and inorganic NPs were used together with the polymer, we could easily obtain the non-spherical particles loaded with the components. In addition, non-spherical particles with a hollow structure were formed with the use of immiscible polymer blend consisting of PCL and poly(ethylene oxide) (PEO).



Biography

Jin Ho Son is a first year master course student in polymer science and engineering at Kyungpook national university in Republic of Korea under professor Dong Choon Hyun. He received his bachelor's degree in polymer science and engineering from the same university.

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