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## Size-controlled colloidal synthesis of monodisperse siloxane-based PDMS nanoparticles

Taejong Paik, Phornsawat Baypaiwad and Hansoo Park  
Chung-Ang University, South Korea

Recently, polydimethylsiloxane (PDMS) particles gained the attention as a polymeric matrix support for biomolecules and contrast agents due to their biocompatible, inert, and tolerance to a variety of fabrication methods. In this study, we synthesized the colloidal nanoparticles (NPs) with various monodisperse size distributions. Modified Stöber process has been tested to synthesize PDMS NPs by using dimethylsiloxane and tetraethyl orthosilicate as precursors. Ammonia was used to induce base-catalyst hydrolysis and condensation, forming dispersed nanocolloids. Chemical bond structure of PDMS was confirmed by FT-IR spectrums and EDS. The synthesized PDMS NPs exhibited an excellent colloidal stability in water. The particle size was readily tunable from approximately 90 nm to 300 nm in diameter by changing the concentration of monomers and catalyst. Furthermore, the cytotoxicity of siloxane-based PDMS NPs was evaluated by CCK-8 assay for all groups.

### Biography

Taejong Paik has completed his PhD from University of Pennsylvania, USA. He is the Assistant Professor of Chung-Ang University, South Korea. He has over 30 publications reported in high quality journals in the field of Chemistry, including *JACS*, *Nano Letters*, and *ACS Nano*, and his publication H-index is 18.

paiktae@cau.ac.kr

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