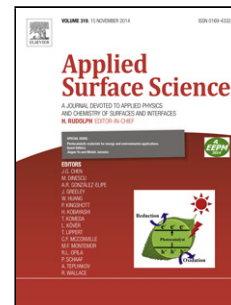


Accepted Manuscript

Title: Assembly route towards raspberry-like composite particles and their controlled surface wettability through varied dual-size binary roughness

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PII: S0169-4332(15)00215-9
DOI: <http://dx.doi.org/doi:10.1016/j.apsusc.2015.01.174>
Reference: APSUSC 29611

To appear in: *APSUSC*

Received date: 11-11-2014
Revised date: 20-1-2015
Accepted date: 22-1-2015

Please cite this article as: X. Fan, L. Niu, Y. Wu, J. Cheng, Z. Yang, Assembly route towards raspberry-like composite particles and their controlled surface wettability through varied dual-size binary roughness, *Applied Surface Science* (2015), <http://dx.doi.org/10.1016/j.apsusc.2015.01.174>

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Assembly route towards raspberry-like composite particles and their controlled surface wettability through varied dual-size binary roughness

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Abstract

Sulfonated PS template/aniline medium method was used to assemble raspberry-like composite particles with varied dual-size binary morphology. The assembly efficiency of SiO₂ particles on templates was found to increase with sulfonation temperatures as well as sulfuric acid concentration. For sulfonation time one turning point appeared because there existed one balance between microgel structure formation and PSS chains detachment. The optimal preparation condition was finally obtained and proved effective for other types of anionic particles. Wettability of surfaces with varied binary roughness was studied and the results showed that dual-size structure could further improve the hydrophobic performance. The contact angles were found to increase with the size ratio of template particles/outer particles.

Keywords: Raspberry-like, composite particle, assembly, wettability, binary roughness

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