

Accepted Manuscript

Title: Synthesis of raspberry-like polymer@silica hybrid colloidal particles through biphasic sol-gel process

Authors: S.Z. Zhou, X.G. Qiao

PII: S0927-7757(18)30402-3
DOI: <https://doi.org/10.1016/j.colsurfa.2018.05.040>
Reference: COLSUA 22508



To appear in: *Colloids and Surfaces A: Physicochem. Eng. Aspects*

Received date: 6-4-2018
Revised date: 11-5-2018
Accepted date: 13-5-2018

Please cite this article as: Zhou SZ, Qiao XG, Synthesis of raspberry-like polymer@silica hybrid colloidal particles through biphasic sol-gel process, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* (2010), <https://doi.org/10.1016/j.colsurfa.2018.05.040>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

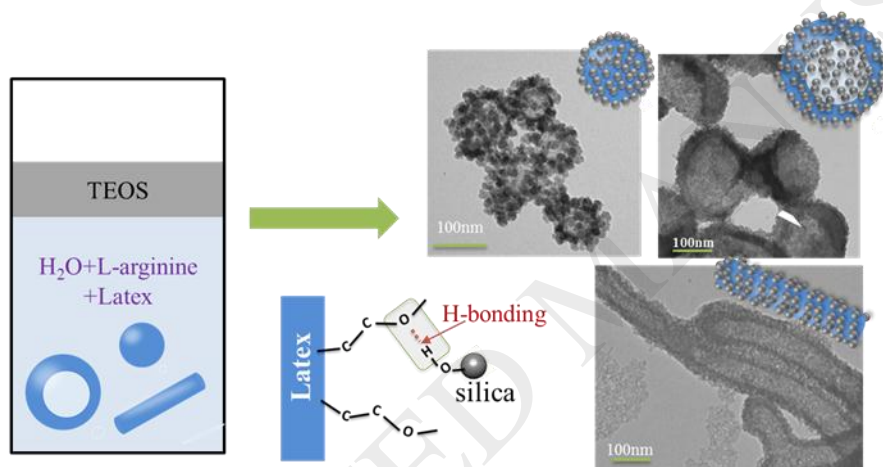
Synthesis of raspberry-like polymer@silica hybrid colloidal particles through biphasic sol-gel process

S. Z. Zhou¹, X. G. Qiao^{2*}

¹. School of Chemical Engineering and Energy, Zhengzhou University, Zhengzhou, P. R. China

². College of Chemistry and Chemical Engineering, and Henan Key laboratory of Function-Oriented Porous Materials, Luoyang Normal University, Luoyang, P. R. China

Graphical abstract



We report a simple process for the synthesis of raspberry-like hybrid colloidal particles through biphasic sol-gel process. Poly(ethylene oxide)- (PEO-) functionalized latexes with different morphologies (sphere, vesicle and fiber) were first dispersed in aqueous solution of L-arginine, a basic amino acid used as catalyst. As the silica source, tetraethyl orthosilicate (TEOS) was carefully added on top of the reactor to get a two-phase solution. TEOS is slowly delivered in the aqueous solution to form silica particles which can adsorbed on the latex surface due to the hydrogen bonding between PEO and Si-OH. Both raspberry-like spheres, vesicles and fibers were fabricated with different latex templates.

ABSTRACT

Download English Version:

<https://daneshyari.com/en/article/6977308>

Download Persian Version:

<https://daneshyari.com/article/6977308>

[Daneshyari.com](https://daneshyari.com)