

Accepted Manuscript

Title: Stimuli-Responsive Tertiary Amine Methacrylate-Based Block Copolymers: Synthesis, Supramolecular Self-Assembly and Functional Applications

Author: Jinming Hu Guoying Zhang Zhishen Ge Shiyong Liu



PII: S0079-6700(13)00127-5
DOI: <http://dx.doi.org/doi:10.1016/j.progpolymsci.2013.10.006>
Reference: JPPS 843

To appear in: *Progress in Polymer Science*

Received date: 9-7-2013
Revised date: 8-10-2013
Accepted date: 16-10-2013

Please cite this article as: Hu J, Zhang G, Ge Z, Liu S, Stimuli-Responsive Tertiary Amine Methacrylate-Based Block Copolymers: Synthesis, Supramolecular Self-Assembly and Functional Applications, *Progress in Polymer Science* (2013), <http://dx.doi.org/10.1016/j.progpolymsci.2013.10.006>

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.

Stimuli-Responsive Tertiary Amine Methacrylate-Based Block Copolymers: Synthesis, Supramolecular Self-Assembly and Functional Applications

Jinming Hu, Guoying Zhang, Zhishen Ge, Shiyong Liu*

CAS Key Laboratory of Soft Matter Chemistry, Department of Polymer Science and Engineering, Hefei National Laboratory for Physical Sciences at the Microscale, University of Science and Technology of China, Hefei, Anhui 230026, China

Abstract

In the past decade, responsive polymers exhibiting reversible or irreversible changes in physical properties and/or chemical structures in response to external stimuli have been extensively investigated. Among them, tertiary amine methacrylate-based block copolymers represent a unique category considering their responsiveness to multiple external stimuli (e.g., pH, temperature and salts), which are essentially relevant to the biological milieu. These intriguing properties allow for their applications in a variety of fields ranging from drug or gene delivery, imaging, diagnostics, antibacterial coatings, catalysis, and bio-separations. This review article highlights tertiary amine methacrylate-based block copolymers, focusing on recent advances in the synthesis of tertiary amine methacrylate-based block copolymers with varying chemical structures and chain topologies, their supramolecular self-assembly in aqueous media as well as in the bulk state, and the emerging functional applications.

Keywords

Tertiary amine-based block copolymers; pH-responsive; Supramolecular self-assembly; Kinetics; Structural fixation; Functional applications

* Corresponding author: E-mail: sliu@ustc.edu.cn

Download English Version:

<https://daneshyari.com/en/article/5208289>

Download Persian Version:

<https://daneshyari.com/article/5208289>

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