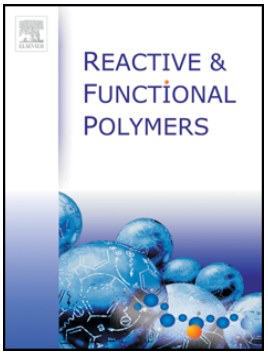

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Li-Ping Wang, Ke-Yang Yin, Guang Li, Qian Liu, Ai-Xia Deng, Hui-Yan Ma

College of Materials Science and Engineering, Liaocheng University, Liaocheng 252059, Shandong, People's Republic of China

Corresponding author:

Li-Ping Wang

College of Materials Science and Engineering

Liaocheng University

Liaocheng 252059

Shandong

People's Republic of China

E-mail: wangliping5@163.com

Abstract

Two types of star polystyrene (SPS) were synthesized via reversible addition-fragmentation chain transfer (RAFT) polymerization: three-arm star polystyrene (TSPS) and five-arm star polystyrene (FSPS). Honeycomb-structured porous films were fabricated by drop-casting of the SPS solutions on glass substrates. The regular honeycomb-patterned porous films were successfully constructed from the SPS solution casting process, and the pore diameter increased with the molecular weight of the SPS enhanced at appropriate molecular weight range. Furthermore, rhodamine B (RhB) wase loaded into SPS to endow the microporous film with fluorescence. The RhB-loaded SPS film exhibits a strong and uniform red emission image.