

快报

内表面掺硫聚苯乙烯空心微球初步研制

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摘要 以聚苯乙烯磺酸钠 (PSS) 为掺杂源, 采用乳液微封装法制备内表面掺S的聚苯乙烯 (PS) 空心微球。XPS测量表明, 微球内表面存在明显的S元素。利用低能X射线照相技术研究了不同掺杂源浓度下干燥时重力和表面张力对掺杂均匀性的影响, 当掺杂源浓度降为0.2%时, 得到了内表面掺S均匀的PS微球, 微球直径为200~800 μm, 直径300 μm的微球中掺杂层S原子面密度为 $8.57 \times 10^6 \mu\text{m}^{-2}$ 。

关键词 [乳液微封装](#) [内表面掺硫](#) [PS微球](#)

分类号

Initial Study on Fabrication of Inner-S-Doped Polystyrene Capsule

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Abstract The inner-S-doped polystyrene capsules with diameter of 200-800 μm were fabricated using the density-match microencapsulation method and the polystyrene sulfurnate (PSS) was used as doped raw material. The drying progress of PS capsule was studied by non-contact X-ray photography and the appearance of S element in inner surface was characterized by X-ray photoelectron spectrum (XPS). The inner-S-doped uniformity can be affected by gravity and interfacial tension. The PSS concentration plays a key pole in the inner-S-doped uniformity and the capsules with inner-S-doped uniformity can be obtained when the PSS concentration is 0.2%. There are 8.57×10^6 sulfur atoms on every $1 \mu\text{m}^2$ inner-S-doped surface of the capsules with diameter of 300 μm.

Key words [microencapsulation](#) [inner-S-doped](#) [PS](#) [microspheres](#)

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