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窄粒径分布、巯基功能化有机微球的合成

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表面功能化的有机微球在化学、材料、光学、生物和医学等方面有着重要的应用。本文通过不同的全氯代多环芳烃和双巯基化合物(或硫化物)的威廉森反应, 合成了多种表面含有巯基的有机微球, 这种一步法合成的微球有着良好地分散性和较窄的粒径分布。同时金、银、钯等贵金属纳米粒子能够很好地负载于这类微球表面。

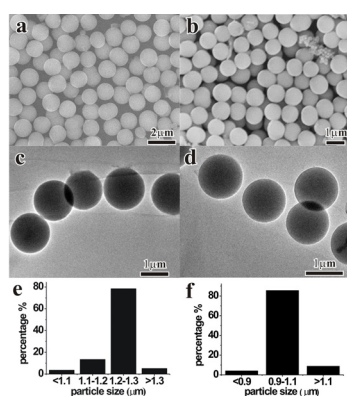


Figure 1. (a-d) SEM and TEM images of the microspheres produced from the reaction of perchlorinated PAHs with 2,5-Dimercapto-1,3,4-thiadiazole. (e,f) Diameter distributions of the microspheres

关键词: 微球; 功能化; 合成。

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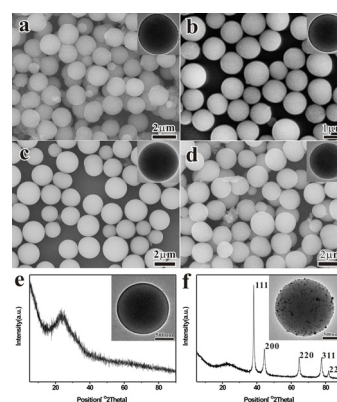


Figure 2. (a-d) SEM and TEM images of the microspheres produced from the reaction between perchlorinated PAHs and dithioglycol /Na₂S·9H₂O. (e,f) XRD and TEM of as-synthesized microspheres and gold-nanoparticle-embedded microspheres.

Synthesis of Narrow Size Distributional Thiol-Functionalized Organic Microspheres

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A number of thiol-functional organic microspheres are synthesized via the willisamson reactions of perchlorinated PAHs with the sodium salts of 2,5-dimercapto-1,3,4-thiadiazole, dithioglycol or Na₂S·9H₂O, respectively. These as-synthesized microspheres can be further functionalized as monodispersed noble metal-nanoparticle-embedded materials.