

化学

## 纳米金掺杂DVB聚合物泡沫的制备

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**摘要** 采用高内相乳液法进行惯性约束聚变靶用纳米金掺杂DVB聚合物泡沫的制备研究。将丁二酸硫醇包裹的水溶性金纳米粒子溶解于内相中, 采用高内相乳液聚合技术制备了低密度纳米金掺杂的DVB聚合物泡沫。测试结果表明, 金元素含量为3.19%时, 泡沫密度沿轴向分布均匀, 金纳米粒子在其中无明显沉降。扫描电子显微镜分析结果表明, 泡沫具有均匀开放的网络结构, 纳米金掺杂后的DVB聚合物泡沫平均孔径约1 μm。面扫描结果显示, 金元素在泡沫中分布均匀, 未出现明显的聚集现象。

**关键词** [高内相乳液法](#) [DVB泡沫](#) [金纳米粒子](#) [掺杂](#)

分类号

## Fabrication of Gold Nanoparticles Doped DVB Foams

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**Abstract** The fabrication of gold nanoparticles doped low density DVB foams was researched, which can be used as ICF target materials. By high internal phase emulsion (HIPE) method, gold nanoparticles doped low density DVB foams were prepared, with gold nanoparticles dissolved in inner phase. The results show that the content of Au in the gold nanoparticles doped DVB foam is 3.19%, the axial direction density of the foam is uniform which indicates none evident settlement of gold nanoparticles. SEM tests show that the gold doped DVB polymer foams have open celled structure and very uniform aperture, and the average pore size is about 1 μm, which is much smaller than that of pure DVB foams. EDX test shows that Au disperses uniformly in the foams.

**Key words** [high internal phase emulsion](#) [DVB foam](#) [gold nanoparticles](#) [doping](#)

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