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研究简报

PS-*b*-P4VP/PFOA配合物在氯仿中的自组装及形态表征

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摘要 全氟辛酸(PFOA)与聚苯乙烯-*b*-聚-4-乙烯吡啶(PS-*b*-P4VP)的配合能诱导嵌段共聚物在其共同溶剂氯仿中胶束化. 胶束化不仅能形成棒状聚集体, 还能得到椭球形胶束. 当嵌段共聚物PS-*b*-P4VP浓度为1.0 g/L时, 使用光散射和扫描电镜研究了MR值(全氟辛酸与聚合物中吡啶环的物质的量比)在1/30到1/10之间的聚集行为及形态. 发现即使当MR值小到1/30时仍然形成稳定的聚集体. 通过扫描电镜观察发现: 改变MR值可以获得不同形态的聚集体.

关键词 全氟辛酸 聚苯乙烯-*b*-聚四乙烯吡啶 胶束化

分类号

Self-assembly of Perfluorooctanoic Acid and PS-*b*-P4VP in Chloroform and Morphological Characterization

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Abstract The complexes of perfluorooctanoic acid (PFOA) and polystyrene-*b*-poly-(4-vinylpyridine) (PS-*b*-P4VP) can induce micellization of the block copolymer in their common solvent chloroform. Rod-like and ellipsoidal aggregates form respectively by micellization. When the concentration of block copolymer is 1.0 g/L, DLS and SEM measurements were used to characterize their aggregation and morphology under the molar ratio of PFOA to the pyridine rings (MR) being 1/30 to 1/10. It is unexpected that the complex still self-assembles into stable aggregates even when the MR value is as low as 1/30. The different morphologies of the aggregation can be found by using SEM during the change of the MR value.

Key words perfluorooctanoic acid polystyrene-*b*-poly-(4-vinylpyridine) micellization

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