

研究论文

正离子 Gemini 表面活性剂/负离子聚电解质相互作用的研究

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收稿日期 2004-10-14 修回日期 2005-3-28 网络版发布日期 接受日期

摘要 摘要 采用荧光探针法和电导法研究了正离子偶联表面活性剂( $C_{12}H_{25}(CH_3)_2N-(CH_2)_6-N(CH_3)_2C_{12}H_{25}\cdot 2Br$ ) (12-6-12·

$2Br^-$ )和带相反电荷聚电解质聚丙烯酸钠(NaPA)的相互作用, 结果表明: 由于静电相互作用, 12-6-

12· $2Br^-$ 和NaPA之间可以形成类胶束或复合物. 对比十二烷基三甲基溴化铵(DTMAB)

与NaPA复配体系的荧光光谱, 发现偶联表面活性剂与NaPA的相互作用强于传统表面活性剂. 此外,

还研究了盐和醇对偶联表面活性剂/聚丙烯酸钠的复配体系微极性的影响,

发现盐和醇对表面活性剂在聚电解质上形成类胶束和复合物的溶解都有一定的促进作用.

关键词 [偶联表面活性剂](#) [聚电解质](#) [分子间相互作用](#) [微极性](#) [胶束](#)

分类号

## Study on the Interaction between Cationic Gemini Surfactant and Anionic Polyelectrolyte

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**Abstract** The interactions between cationic gemini surfactant hexylene-1,6-bis(dodecyldimethylammonium) dibromide ( $C_{12}H_{25}(CH_3)_2N-(CH_2)_6-N(CH_3)_2C_{12}H_{25}\cdot 2Br$ ) (12-6-12· $2Br^-$ ) and oppositely charged polyelectrolyte poly(arylic acid, sodium salt) (NaPA) have been studied by using fluorescence and conductivity measurements. It was shown that micelle-like aggregate or complex could be formed between the gemini surfactant (12-6-12· $2Br^-$ ) and polyelectrolyte NaPA due to the static electric interaction. Comparing the fluorescence spectrum of system of dodecyltrimethylammonium bromide (DTMAB) with NaPA and that of system of gemini surfactant (12-6-12· $2Br^-$ ) and NaPA, it could be found that the interaction between gemini surfactant (12-6-12· $2Br^-$ ) and NaPA was stronger than that between DTMAB and NaPA. It could be also found that the salt and alcohol are favorable to the formation of the micelle-like aggregate and the re-dissolution of the complex.

**Key words** [gemini surfactant](#) [polyelectrolyte](#) [molecular interaction](#) [micropolarity](#) [micelle](#)

DOI:

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