

表面活性剂TX-100与SDBS胶束中光解苯甲醛自由基的化学诱导动态电子极化

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摘要 利用时间分辨ESR波谱仪,研究了苯甲醛在乙二醇和表面活性剂SDBS, TX-100的胶束溶液中的激光光解化学诱导动态电子极化(CIDEP)现象。苯甲醛在激光照射下可以从体系和自身中得到氢生成 α -羟基苄自由基和苯酰自由基,在SDBS胶束中是自由基对机理RPM极化,而在TX-100胶束中是三重态机理TM极化。计算机模拟谱图进一步证实了自由基的产生和极化机理。

关键词 [胶束](#) [苯甲醛](#) [电子自旋共振](#) [乙二醇](#) [光解](#) [极化](#) [游离基](#)

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A CIDEP Study of Photolyzed Benzaldehyde Radicals in TX-100 and SDBS Micelles

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Abstract The time-resolved electron spin resonance (TRESR) spectra and chemically induced dynamic electron polarization (CIDEP) phenomena, obtained from laser flash photolysis of benzaldehyde (BA) in ethylene glycol, SDBS and TX-100 micellar solutions, were investigated. It was shown that α -hydroxybenzyl and benzoyl radicals were generated via hydrogen abstraction of the triplet state of BA from the systems and itself. The polarization spectrum lines confirmed the radical pair mechanism (RPM) in SDBS micelles as well as the triplet mechanism (TM) in TX-100 micelles. The computer simulation of the CIDEP spectra further confirmed the generation and polarization mechanisms of the radicals.

Key words [MICELLE](#) [BENZALDEHYDE](#) [ESR](#) [ETHANEDIOL](#) [PHOTOLYSIS](#) [POLARIZATION](#) [FREE RADICAL](#)

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