

中相微乳液的介电弛豫谱解析及弛豫机制研究

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摘要 对由SDS、CTAB、正庚烷、正丁醇和盐水组成的中相微乳体系进行了介电测量,在不同盐度下低频段出现显著的介电弛豫现象,它给出了弛豫时间随盐度的变化关系。通过解析介电谱获得了体系内部结构和电性质等信息,几个介电模型和理论公式被用来解释解析的结果。对弛豫时间的计算结果发现,该弛豫是由多种极化机制参与、界面极化为支配的动力学过程。介电解析和模型计算相互验证,结果暗示着体系盐度变化对中相微乳结构变化的影响和可能的转化机制。

关键词 [微乳](#) [弛豫时间](#) [极化](#) [烷基磺酸盐](#) [庚烷](#) [丁醇](#)

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Dielectric analysis and mechanistic investigation of the relaxation for the system of middle phase microemulsion

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Abstract Dielectric measurements were made on middle phase microemulsions (MPEM) composed of sodium dodecylsulfate (SDS), cetyltrimethylammonium bromide (CTAB), n-butanol, n-heptane and brime. Distinct dielectric phenomena, with characteristic frequency depending regularly on the salinity of the microemulsions, were observed in the low-frequency range. Useful information such as structural feature and electrical properties of the system was obtained by means of analyzing the dielectric spectroscopies. The data were interpreted using some current models and theoretical formulas. From the theoretical values of relaxation time based on the models, it was found that the multifarious polarization mechanisms contributed mainly to the present dielectric relaxations. Among all the mechanisms for the dynamic processes the interfacial polarization is dominant. The results of analysis and theoretical calculations are consistent with each other, revealing the influence of salinity scanning on the structure of middle phase microemulsion and giving possible mechanisms.

Key words [MICROEMUSION](#) [RELAXATION TIME](#) [POLARIZATION](#) [ALKYLSULFONATE](#) [HEPTANE](#) [BUTANOL](#)

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