

DODMAC/n-C10H21OH/10%n-C10H22/H2O体系溶致液晶的²H NMR和SAXS研究

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摘要 50℃下,测定了双十八烷基二甲基氯化铵DODMAC/n-C10H21OH/10%n-C10H22/H2O四元体系相图,确定了液晶区域范围,用²H NMR方法,并辅以偏光显微镜照片,确定了液晶为反相六角状,用SAXS求出了液晶晶面间距,确定了晶面间距d1与含水量fw/(1-fw)之间的线性关系,并求得圆柱形聚集体的直径ds=4.035nm.

关键词 [液晶](#) [相图](#) [二维核磁共振](#) [双十八烷基二甲基氯化铵](#)

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Studies on lyotropic liquid crystal in the system DODMAC/n-C10H21OH/10%n-C10H22/H2O with ²H NMR and SAXS

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Abstract The equilibrium phase diagram for the system dioctadecyldimethylammonium chloride (DODMAC)/n-decanol/n-decane/water was determined at 50 °C. The hyperfine structures of the liquid crystal phase were studied by ²H NMR, X-ray low-angle diffraction, and polarizing microscopy. All results showed that there was a reversed hexagonal liquid crystalline phase. The connection between crystalline face distance (d1) and the content of water [fw/(1-fw)] was obtained and the diameter of the cylindrical assemble was getted to be 4.035nm.

Key words [LIQUID CRYSTAL](#) [PHASE DIAGRAM](#)

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