Study of Aqueous Solution of Sodiumdodecylsulfate and Polyethyleneoxide 10000 by NMR NOESY

Elson S. de Alvarenga, Cláudio F. Lima, and Ângelo M. L. Denadai
Departamento de Química, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brasil, CEP 36571-000

Reprint requests to Dr. E. S. de A.; E-mail: elson@ufv.br

Z. Naturforsch. 59a, 291 – 294 (2004); received October 7, 2003

Two-dimensional Nuclear Overhauser Enhancement Spectroscopy NMR has been applied to study sodiumdodecylsulfate (SDS)/polyethyleneoxide (PEO)/D$_2$O at 10, 20, 25, and 40 °C. The results indicate that PEO interacts preferentially with the surface of the micelle aggregates at 20 and 25 °C, displacing some water molecules from the hydration sphere. At 40 °C the polymer tends to penetrate the interior of the SDS micelle, since its solubility in hydrophobic media increases with temperature.

Key words: Polyethyleneoxide; SDS; NOESY.