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Microstructure of a phase-separating liquid mixture confined in mesoporous Controlled Pore Glass – A study combining SANS, NSE and adsorption measurements[1] GERNOT ROTHER, Oak Ridge National Laboratory, SEBASTIAN SCHEMMEL, TU Berlin, DIRK WOYWOD, TU Berlin, MARTIN SCHOEN, TU Berlin, GERHARD H. FINDENEGG, TU Berlin — The physical properties of liquid mixtures with miscibility gap in pores of mesoscopic size are drastically altered from their bulk states, due to adsorption on the pore walls and confinement effects, and it is highly desirable to gain knowledge in the adsorption and separation processes, due to the widescale use of such media in chromatography and other applications [1]. In this work, three complementary techniques were used to address this issue, including both elastic (SANS) and inelastic (neutron- spin-echo) techniques, backed up by physical adsorption measurements of binary liquid mixtures with a miscibility gap [i.e. iso-butyric acid and heavy water] [2,3]. We found a shift in the phase separation temperature by ~ 10 K towards the two-phase region and a drastical slowing down of the dynamics in the two-phase region. [1] K. Binder and E. Luijten, Phys. Reports 344, 179 (2001) [2] S. Schemmel et al., *J. Chem. Phys.* **122**, 244718 (2005) [3] T. Hellweg et al., *Eur. Phys. J. E* **12**, s01 (2003) 001

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