Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Effective interfacial tension between miscible fluids JOHN POJMAN, The University of Southern Mississippi, NICK BESSONOV, Institute of Problems of Mechanical Engineering, GLORIA VINER, The University of Southern Mississippi, VITALY VOLPERT, Université Lyon I — Isobutyric acid (IBA) and water have an Upper Critical Solution Temperature of 27 C. Using spinning drop tensiometry, we were able to demonstrate the existence of an effective interfacial tension by preparing a drop of isobutyric acid-rich phase below the UCST and then raising the temperature above the UCST. The capillary instability was also observed by rapidly reducing the rotation rate. We also demonstrated that such an effective interfacial tension is not unique to the IBA-water systems but can also occur in the cyclohexane – aniline, which has a Lower Critical Solution Temperature.

John Pojman
The University of Southern Mississippi

Date submitted: 20 Nov 2007 Electronic form version 1.4