

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Verification of universality in strong critical adsorption with three techniques.¹ MATTHEW BROWN, BRUCE LAW, Kansas State University, LYLE MARSCHAND, LAURENCE LURIO, Northern Illinois University, SERIF URAN, Pittsburg State University — Fischer and de Gennes [C. R. Acad. Sci., Ser. B 287, 207 (1978)] suggested that for a mixture which was critical with respect to the demixing phase transition an interfacial adsorption profile would exhibit universal (system independent) scaling behavior. Carpenter et al. [Phys. Rev. E 61, 532 (2000) and references therein] verified this theory with a model which described ellipsometry data previously taken from several critical binary liquid mixtures. Until recently this model had not been verified with other experimental techniques. We describe a successful effort to verify Carpenter's model with data from a neutron reflectometry study of a critical D2O + 3-methylpyridine mixture, as well as an analysis of data from both ellipsometry and x-ray reflectometry from a critical mixture of dodecane + tetrabromoethane.

¹PACS numbers DMR-0603144, 68.35.Rh, 68.43.-h, 64.60.Fr

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Date submitted: 14 Nov 2006

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