

BARODIFFUSION PHENOMENA IN THE CRITICAL REGION OF NANOSCALE LIQUID MIXTURES

*O.V. Chalyi¹, G.V. Khrapiichuk², L.M. Chernenko³,
K.O. Chalyi¹, O.V. Zaitseva¹*

¹O.O. Bogomolets National Medical University,
Chair of Medical and Biological Physics
(13, Shevchenko Blvd., Kyiv 01160, Ukraine),

²Taras Shevchenko National University of Kyiv,
Faculty of Physics
(2, Academician Glushkov Ave., Kyiv 03127, Ukraine;
e-mail: shlihta@ukr.net),

³O.O. Chuiko Institute of Surface Chemistry,
Nat. Acad. of Sci. of Ukraine
(17, General Naumov Str., Kyiv 03164, Ukraine)

S u m m a r y

The critical behavior of isobaric-isothermal compressibility, the diffusion and barodiffusion coefficients, and the barodiffusion ratio for two-component liquid mixtures with a confined geometry has been studied. To analyze the specific features of barodiffusion phenomena, the scaling hypothesis for spatially confined systems and the hypothesis of “complete scaling” have been applied. The influence of the lower crossover dimension and spatial dispersion effects on the characteristics of barodiffusion processes in nanoscale liquid mixtures in their critical region has been studied.