

ON THE THERMODYNAMICS AND STRUCTURE  
OF FRUSTRATED MESOSCOPICALLY  
HETEROPHASE LIQUID AND GLASSES

*O.C. Bakai*

National Scientific Center  
“Kharkiv Institute of Physics and Technology”  
(1, Akademichna Str., Kharkiv 61108, Ukraine)

S u m m a r y

A model of heterophase fluctuations is generalized taking into account the frustrations of solid-like fluctuations. The equation of equilibrium for fluctuations on a mesoscopic scale is deduced. The influence of frustrations on the phase equilibrium and on the mode of liquid solidification is investigated. It is pointed out that the frustrations have an essential influence on the formation of long-range correlated fractal heterogeneities (a Fischer cluster) in liquids and on polyamorphous transformations of glasses. The definition of isostructural and non-isostructural polyamorphisms is introduced, and the kinetic criterion for polyamorphous transformations is formulated.