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MULTICOMPONENT HYDROCRABONS SORET COEFFICIENTS MEASURED IN MICROGRAVITY

Abstract

Soret coefficient quantify the composition gradient appearing in mixtures as a consequence of the presence of a thermal gradient. Microgravity has been since a long time a priviledge tool to perform such measurements because on ground it is not always possible to avoid parasitic buoyant convection occuring both because of thermal gradient and the of the composition gradients due to the effect to be measured. Past experiments on alloys have been to this respect fully succesfull. A new problematic has risen in the field of multicomponent system, in particular in the perpective of prediction of extracting conditions of oil. Multicomponent systems present several specificities with respect to binary mixtures, and the state of the art is such that measurements in presence of convection are unusable. The first measurements of Soret coefficients in multicomponent systems obtained in microgravity are reported, and theoretical conclusions are emerging, so providing more than first inputs to a database. This is the result of a long and sustained multidisciplanary activity of microgravity.