

## An Overview of Selected Phenomena in Multicomponent Diffusion

There exist several interesting phenomena and observations reported in literature for isothermal diffusion in multicomponent systems. Such phenomena include uphill diffusion, development of zero-flux planes and flux reversals for individual components, flux reversals at interfaces, and instability at interfaces and multiphase layer development. In addition, uncommon diffusion structures exhibiting unusual diffusion paths can develop in both single phase and multiphase diffusion assemblies. An overview of such phenomena is presented to highlight the role of interactions among diffusing components with the aid of selected diffusion studies carried out in multicomponent alloy systems, aluminides, silicides, and nuclear fuel/cladding assemblies.