Ion transfer across oil-water interface is of scientific and commercial interest. In solvent extraction of metals, metallic ions partition between the aqueous feed and the extracting oil (“organic”) phase with the help of an extractant molecule. After extraction the organic phase is a complex fluid with nanoscale heterogeneity. We study the relationship between the extraction performance (or, equivalently, the composition of the complex fluid) with the nanoscale structure of the organic phase. Using two metallic complexes with same charge but different shape and bulk hydration structure we show that water content of the complex fluid significantly affects the organic phase structure. We find that water extraction is correlated with the interfacial hydration of the extracted ions.

**REFERENCES**


