

New and newly applied non traditional separation technologies for selectively extracting companion metals, such as the rare earths, from uranium process leach solutions.

The selectivity of chemical separation technologies applicable to uranium process leach solutions has dramatically improved in just the last decade. However their implementation has been impeded in existing operations by factors such as secrecy to maintain competitive advantage; lack of interest in changing existing operations; and the reluctance of institutional finance to underwrite new technologies for start-ups. Nonetheless the building of any new mine or of any new approach to selectively extracting valuable byproducts from either new operations, or tailings, or residues cannot be evaluated without looking carefully at the application of the new and newly applied separation technologies. Molecular recognition technology; continuous ion chromatography; and rapid solvent extraction will be described and their individual applicability to uranium processing described.