

Rational Reagent Design for Mineral Processing Applications

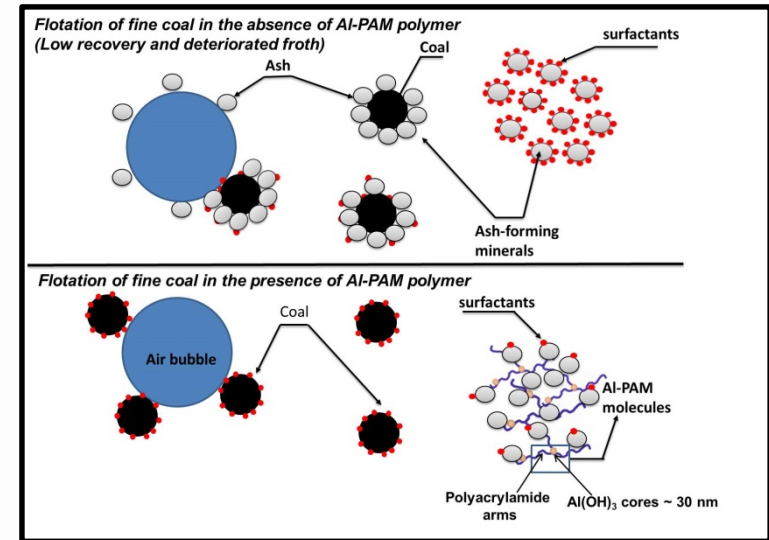
- **Ionic liquids Deal with Rare Earth Elements**
 - Enhance extraction of rare earth elements by tailoring the structure of ionic liquids. This can be applied to extract REEs from coal byproducts.
- **Hybrid nanoparticle systems for mine waste management**
 - Enhance consolidation of fine mineral tailings using hybrid polymeric nanoparticles.
- **Enhanced Fine Coal Flotation Using Novel Polymer Aids**
 - Improved combustible recovery and ash rejection
 - provide valuable insights into the mechanism governing the processibility of fine and ultrafine high-ash coal.
- **Recycling the Fluorapatite from Secondary Sources using Polymer-assisted Flotation**
 - Aluminum polyacrylamide is tested to distinguish its possible effective role in the flotation of fluorapatite and rejection of gangue minerals
- **Biodegradable Polymers application in Sulfide mineral flotation**
 - Develop a model to describe froth phase stability in response to operational variables of flotation.
 - Analyze the possibility of using nano particles to enhance froth stability in complex real ore flotation.

Keywords

- Froth flotation, Fine mineral tailing management, Hybrid polymers,, REEs, Ionic liquids

Funding

- Monsanto Ltd.



Proposed mechanism of depression of ash-forming minerals by specially designed polymer chains.

PoC:

Lana Alagha, PhD
Assistant Professor
Department of Mining and Nuclear Engineering
288 McNutt Hall
Tel #: 5733416287
alaghal@mst.edu

