



Bahram Behnajady

Assistant Professor

College: Faculty of Material Engineering

Objective

- Application of green solvents in metals extraction and recovery from variety of primary and secondary sources
- Working on new, cutting-edge topics in Extractive Metallurgy & Hydrometallurgy
- Recycling E-waste and using end-life waste in a variety of applications
- Continuing my graduate studies & research plans (toward new aspects of Extractive Metallurgy)
- Transformation of the new Ideas into operations

Interests

- Metals recycling and resource recovery
- Primary metals extraction and metals refining
- Hydrometallurgical processing of resource materials
- Development of new technologies for metals recovery
- Immobilization of toxic species (e.g. arsenic and mercury)
- Solvent extraction
- Ion exchange
- Electrowinning
- Electrochemical dissolution of complex minerals (fundamental studies)
- Research and Development (R&D)

Research and Development & Pilot Plant & Industrial Projects

- Hydrometallurgical production of lead from zinc plant residue
- Gold and silver extraction via chloride media from refractory jarosite residue
- Atmospheric leaching of Sphalerite in acidic ferric media
- Metals separation from scrap Li-ions batteries

- Recovery of Zinc, nickel and cadmium from cold purification filter cake (Ni-Cd purification)
- Electrowinning of Cadmium from cadmium sulfate solution
- Precipitation of high concentration iron ions by Jarosite process in zinc ingot production
- Investigation of the impurities interaction in electrowinning of zinc sulfate solution
- Recycling of zinc and copper from brass slag
- Preparation of nano strontium carbonate powder from celestine
- Diagnosis of Zinc Production Route in different sections
- Decreasing of Zinc content in hot purification residue by adjusting pH
- Celestine replacement instead of carbonate strontium in removing lead from zinc electrolyte solution
- Parameter optimization of zinc-ferrite leaching in sulfuric acid media

Education

| Degree | Graduated in | Major | University |
|----------|--------------|--|---------------------------------|
| BSc | 2008 | Materials Engineering, Extractive Metallurgy | Sahand University of Technology |
| MSc | 2011 | Materials Engineering | Sahand University of Technology |
| Doctoral | 2017 | Materials Engineering | Sahand University of Technology |

Papers in Journals

1. B. Behnajady, J. Y. Seyf, S. Karimi, M. Moradi, M. Sohrabi, Molecular dynamic (MD) simulation and density function theory (DFT) calculation relevant to green leaching of metals from spent lithium-ion battery cathode materials using glucose-based deep eutectic solvent (DES), Hydrometallurgy, 2024 01 01.