Development of Advanced Mineral Processing Technology and Recycling Process

Our laboratory is investigating development of treatment process of unutilized resources which are impurity containing and/or low grade and valuable metals contain electronic waste. The typical research work introduce as follows.

Development of advanced mineral processing technology of unutilized mineral resources

- Treatment process of impurity bearing copper mineral.
- Metal recovery form low grade ore and mine tailing. etc

Development of precious metal extraction process from wasted materials

- Precious metal leaching process from printed circuit board by halogen leaching.
- Development of novel extractant for selective extraction of precious metal. etc.

Development of Advanced Mineral Processing Technology for Utilization of Mineral Resources

Development of arsenic and antimony removal process to produce clean copper concentrate

Removal of impurity (arsenic etc) or condense of copper by physico-chemical separation process

Roasting, Alkali leaching, Pressure leaching

Copper concentrate (Feed of copper smelting)
Arsenic concentrate (Keeping and stabilization)

Comparison of each method to find optimum process

Development of Precious Metal Extraction Process from Wasted Materials

Development of precious metal extraction process to recycle precious metal from wasted materials

E-waste (waste circuit board) (waste catalyst) etc

Physical and/or chemical separation

Physical separation
- Color sorting
- Table separation etc

Chemical separation
- Halide leaching
- Alkaline leaching
- High pressure leaching etc

Separation and condensation of precious metal and rare metal

Precious metal extraction

Creation of novel extractant for selective extraction of precious metal

For effective extraction of precious metal ad rare metal