TOKORO LAB.

[Resource Circulation, Separation-Concentration, Powder Processing]

Endowed Research Unit for Non-ferrous Metal Resource Recovery Engineering (JX Metals Endowed Unit)

Environmental Resource Processing Engineering

http://www.metals-recycling.iis.u-tokyo.ac.jp/chiharutokoro.html
http://www.tokoro.env.waseda.ac.jp/

Technologies for resource circulation / environmental restoration

Valorization of urban mine resources and refractory ores by advanced technologies for solid separation and concentration

Special grinding technologies for separation of solids

Soil Remediation by surface grinding

- Increase of SiO₂ exposure by removal of surface Mn
- Concentration of Mn into a fine particle fraction

Solid analysis to investigate the mineral separation

Mineral Liberation Analyzer (MLA)

- Identification of mineral phases
- Quantification of liberation degree and weight ratio of each mineral

Pretreatment operations for improving the solid separation

Recovery of Co from Li-Ion batteries by slow heating

- Process analysis to improve the recovery of valuable metals from Li-ion batteries (LIB)

Advanced technologies for environment remediation

Removal enhancement by amorphization

- Calcination of MgCO₃ to MgO and quenching to suppress crystallization

Process optimization by combination of geochemical modeling and fluid

- Creation of ground model from terrain data and reproduction of the dynamic shape water bodies
- Prediction of concentration profiles by considering chemical equilibria