



## PROCESSING OF SECONDARY RAW MATERIALS AND WASTE

In the spirit of the Circular Economy, the return of constituents and structural materials in industrial and residential waste and products that have become waste to the economy is of paramount importance. We use mechanical, chemical, physico-chemical, biological and thermal process operations in the processing of increasingly complex (eg composite materials, surface layers) and variable structure wastes with decreasing valuable material content, or even biodegradable materials, wastewater (material streams).

### COMPETENCIES

- Mining waste (inert, primary raw materials)
- Slag and fly ash
- Municipal solid waste and its various fractions
- Electronic waste (conventional appliances and high-tech devices)
- Vehicle recycling of passenger cars and commercial vehicles
- Additional metal-containing wastes
- Plastic waste
- Composite materials
- Water and sewage
- Various types of biomass



### TOOLS

- Shredders - 35 types (coarse shredders, grinders, fine grinders, in the size range of 300 mm to 100 mm)
- Screeners (sieves, air classifiers)
- Enrichers (magnetic and eddy current separators, air flow devices, additional separation equipment)
- Phase separators (filters, settlers, centrifuges)
- Mixers, agglomeration (pelletising, briquetting press)
- Reactors (bio-process technology, chemical and physico-chemical process technology)
- Laboratory analysis (including particle size distribution, particle shape, SEM, ICC, BET, rheology)



### REFERENCES

- CriticEl project <http://kritikuselemek.uni-miskolc.hu/>
- RING2017 project <https://ring2017.uni-miskolc.hu/>
- Thematic Program of Excellence
- Higher Education Institutional Excellence Program