

Enhanced Pyrometallurgical Process for Critical Metal Recovery from E-Scrap

Team: Mr. Shavinka Jayasekera (EGT), Dr. Terence Musho (EGT), Dr. Edward Sabolsky (WVU), Mr. Chuck Ludwig (CHZ), Dr. Henry Brandhorst (CHZ)

Objective:

To develop and commercialize a patented microwave-enhanced pyrometallurgical process that efficiently recovers critical metals from e-scrap, contributing to the U.S. clean energy economy through sustainable and cost-effective recycling solutions.

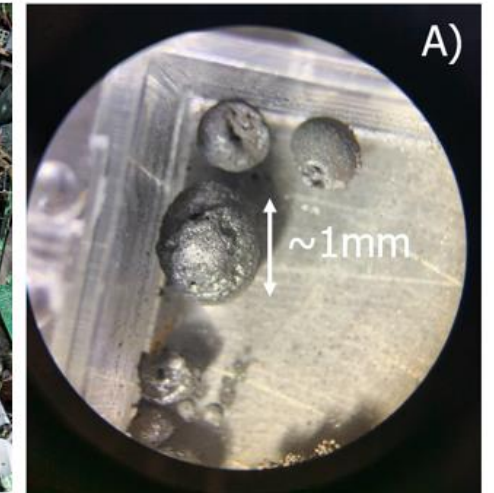
Technology Advantages: Our technological advantage lies in the use of microwave energy to selectively heat and reduce metal oxides from e-scrap, enabling high-purity metal recovery without the use of harsh chemicals, while significantly reducing energy consumption and environmental impact

Approach:

- **Microwave Processing:** Use microwave energy to selectively recover metals from black mass with 95-98% purity.
- **System Integration:** Partner with CHZ Technologies to process e-scrap and refine metal oxides in carbon-rich by-products.
- **Sustainable Recovery:** Achieve cost-effective metal recovery without harsh chemicals, relying on electricity and inert gases.



Start Product
Shredded E-waste



End Product
Metal Sponge Material

