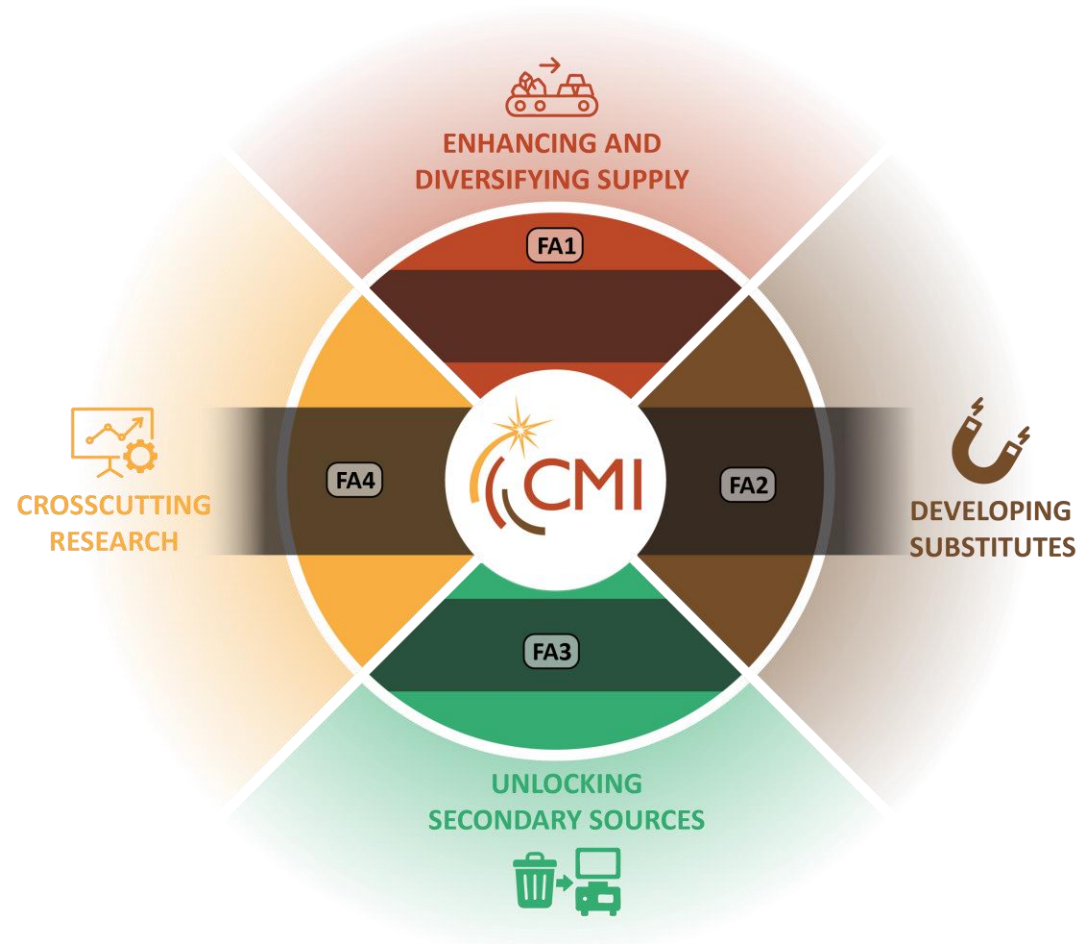




Critical Materials Innovation Hub Overview

METALLIC Workshop

July 27, 2026

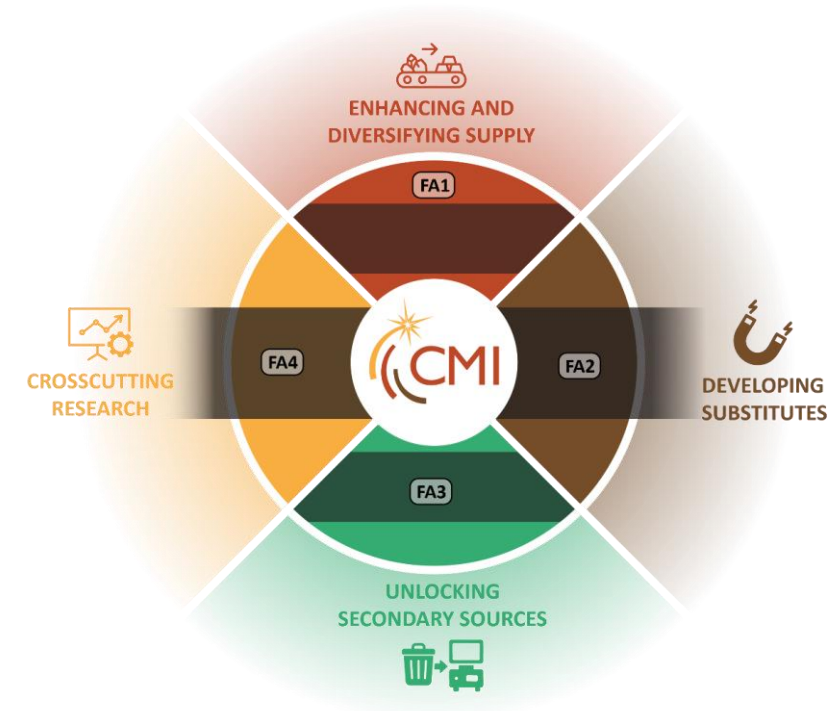
Critical Materials Innovation Hub



- **An Energy Innovation Hub:** led by Ames National Laboratory for U.S. DOE, founded in 2013.
- **Mission:** CMI develops technologies and enhances the innovation pipeline for U.S. critical material supply chains by accelerating research, educating a skilled workforce, and creating de-risked, technologies in partnership with American industry.

Innovation Ecosystem

-  **Fully Integrated Across Supply Chains**
-  **250+ Researchers Strong**
-  **20 Industry Partners**
-  **9 DOE National Laboratories**
-  **17 Leading Universities**



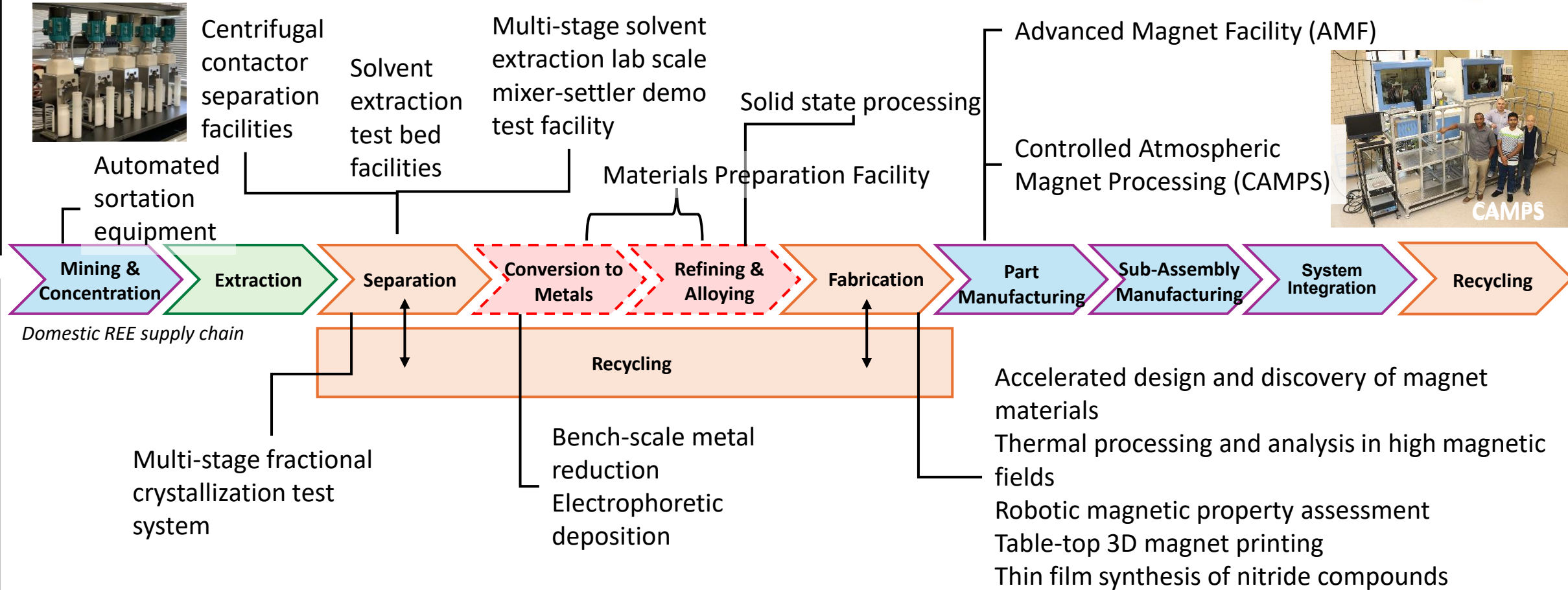
We perform early-stage (TRL 2-4) applied research and develop the next generation of the critical materials workforce.

CMI Hub Facilities & Capabilities

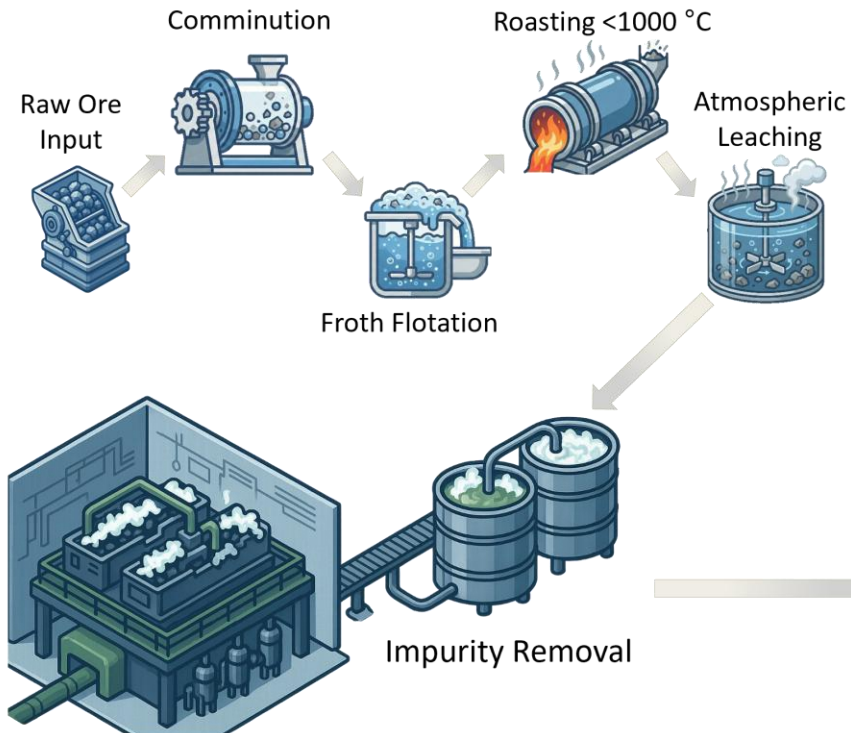


FACILITIES

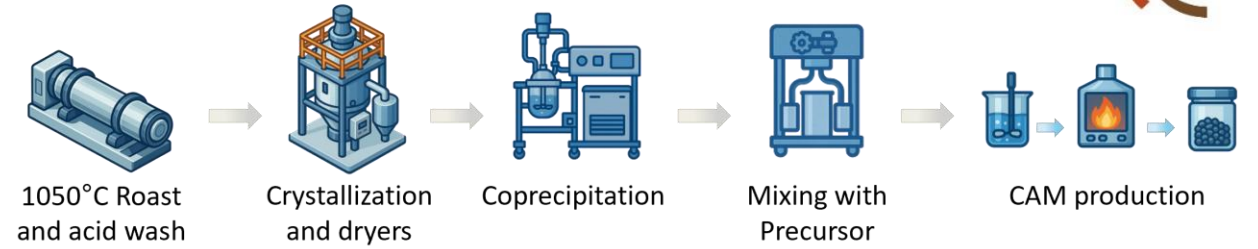
CAPABILITIES



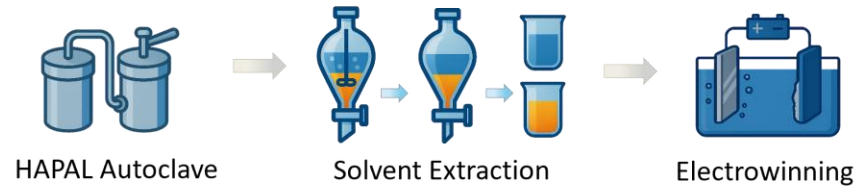
CMI R&D Scope



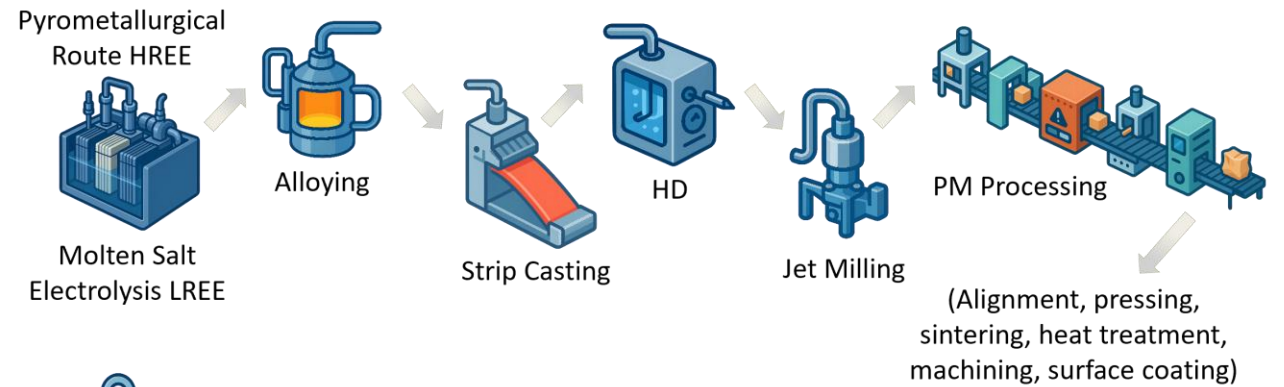
Li^+



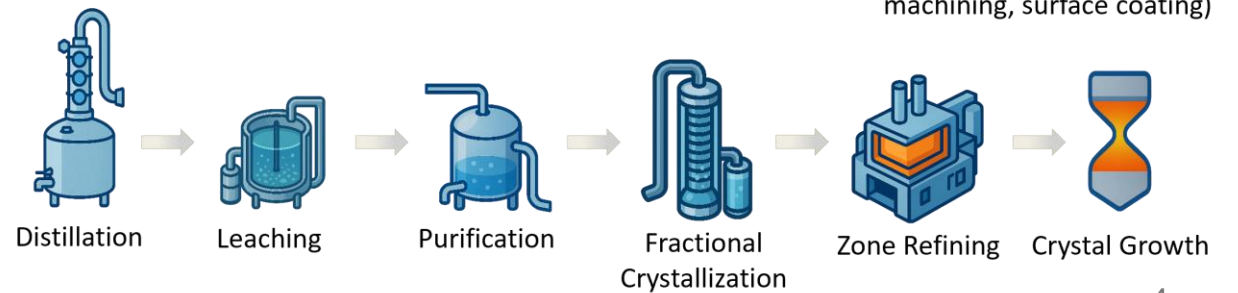
$\text{Ni}^{2+}/\text{Co}^{2+}$



RE^{3+}



Ga^{3+}



Ge^{4+}

Create Technologies

Captivate Industry

Catalyze Deployment

Cultivate Workforce

Questions?



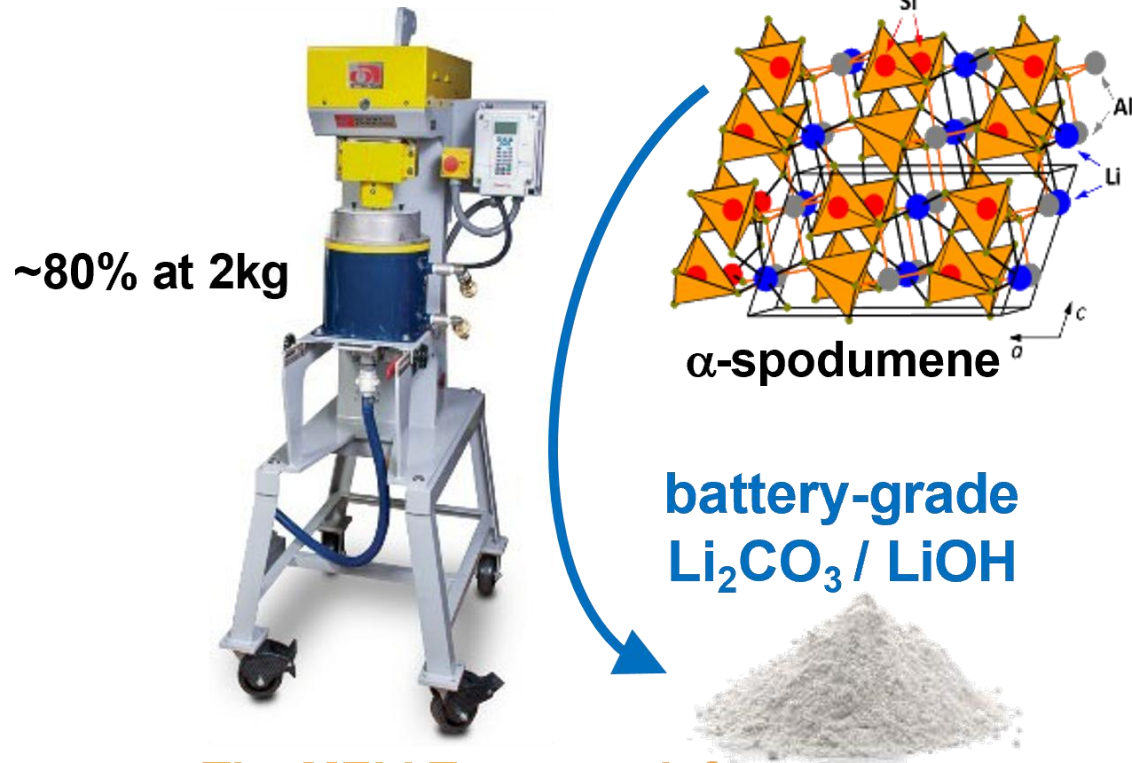
Critical Materials Innovation Hub

Creating Technologies



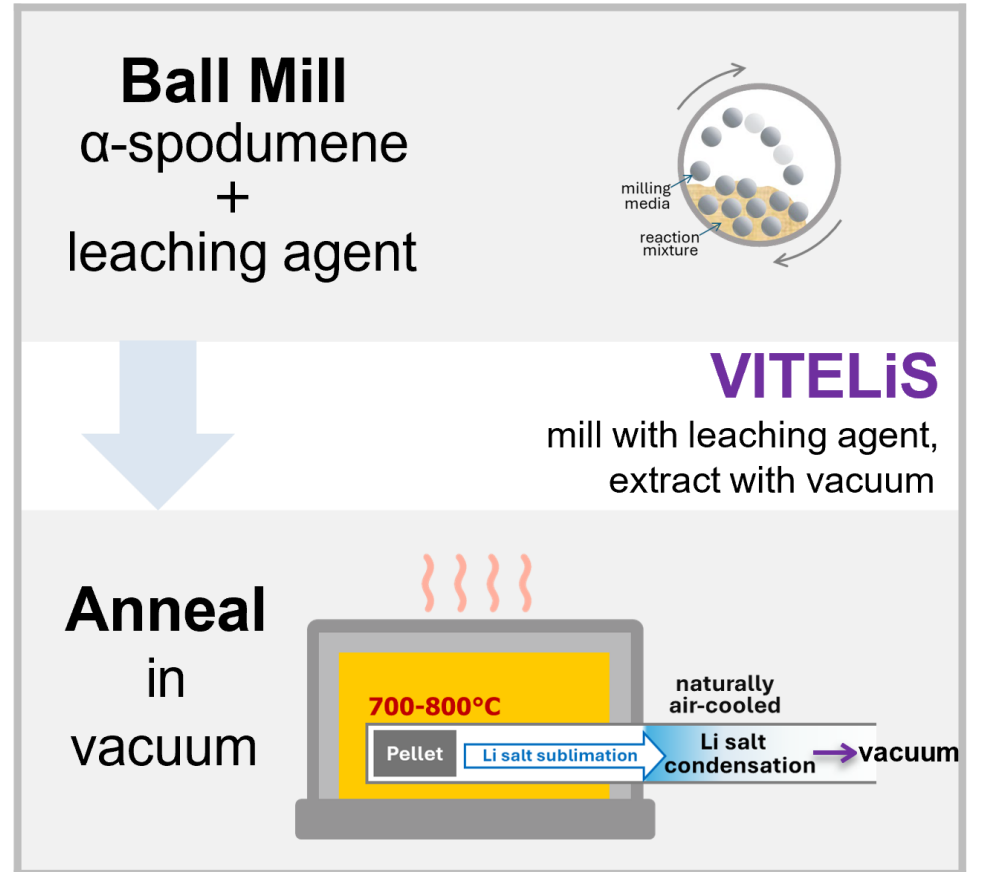
MELLT

Mill with solid leaching agent
room temp extraction dilute acid



The MELLT approach for
Li-extraction from α -spodumene

VITELiS: Vacuum-Induced Thermal Extraction of Lithium from α -Spodumene

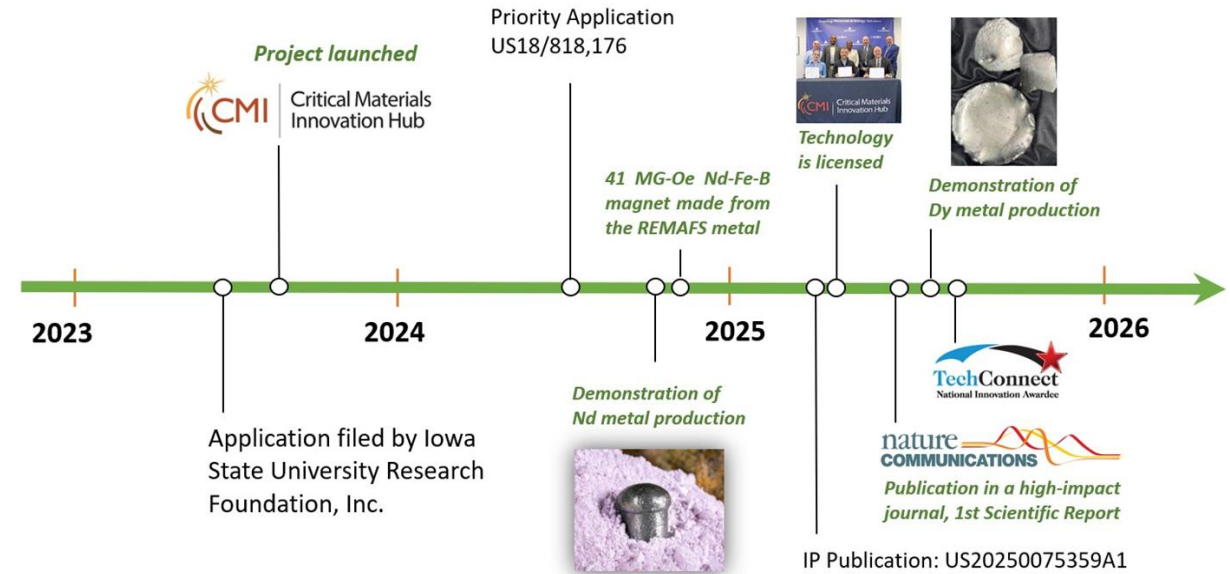


Infographic showing the VITELiS approach for
Li-extraction from α -spodumene

Captivating Industry



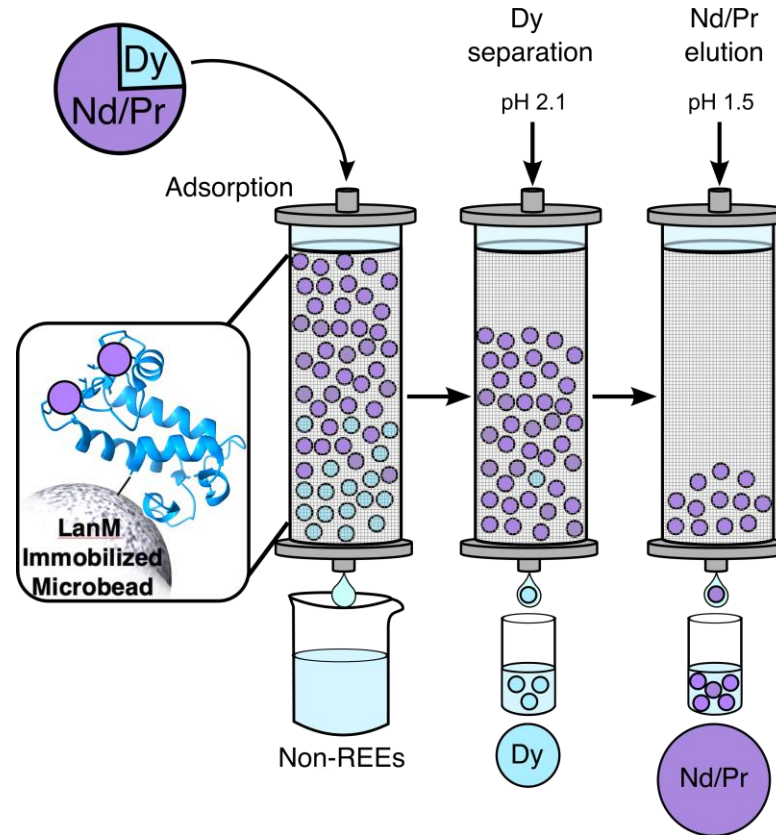
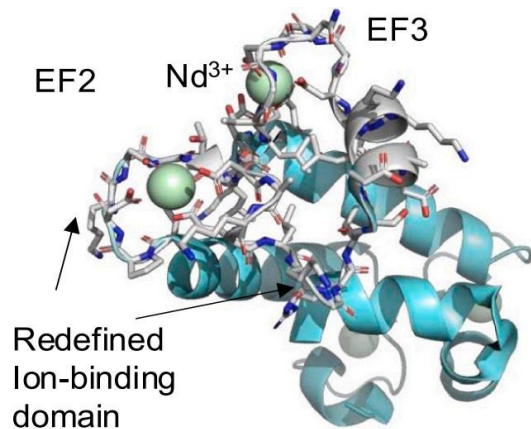
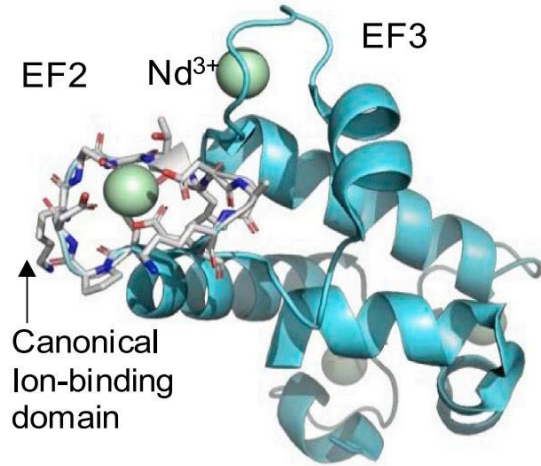
REMAFS (Rare Earth Metals via Alternative Fluoride Salts)



About 55 g of dysprosium metal obtained after calciothermic reduction of 100g of sodium dysprosium tetrafluoride (NaDyF_4) compound.

Catalyze Deployment

Bio-based Separations



Alta Resources
has licensed several
technologies
lanmodulin protein
extractants

Cultivate Workforce

6th Cohort CMI Leadership Academy



2025 CMI Interns



CMI Education
Toolkit and
Lesson Plans