Mineral intelligence for EU raw-materials autonomy

Project idea	**Mineralogy-led processing of complex ores, by-products and extractive waste to recover more critical raw materials in Europe** *Mineral intelligence for resilient raw materials supply to increase european processing capacity, circular sources and responsible international partnerships.
Organisation, town and country	University College Dublin (UCD), School of Earth Sciences and iCRAG, Dublin, Ireland
Addressed topics	**HORIZON-CL4-2027-01-MAT-PROD-16**: Technologies for innovative processing of raw materials (IA) **HORIZON-CL4-2027-01-MAT-PROD-17**: Expert network on Critical raw materials (CSA)

UCD School of Earth Sciences and iCRAG

€187M
research funding won by iCRAG since 2015

99
industry partners engaged by iCRAG

6
ERC awards to iCRAG researchers

Who we are

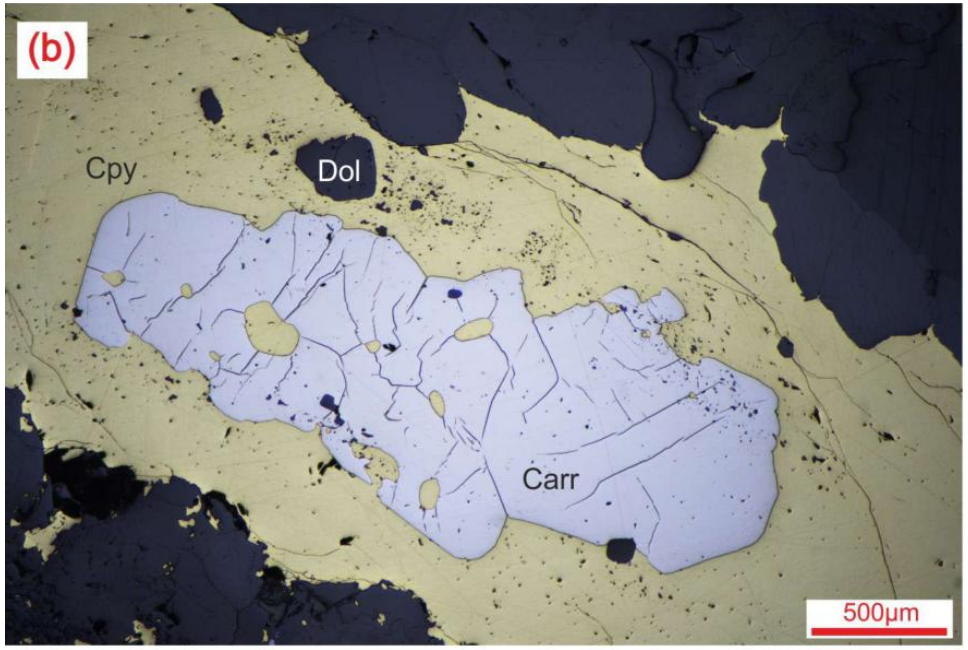
- iCRAG: Research Ireland Centre for Applied Geosciences, hosted by UCD since 2015
- Earth Resources group: sedimentary-basin ore deposits and energy-transition metals
- In-house National Centre for Isotope Geochemistry (NCIG)

EU-funded experience

- **GREENPEG** (H2020): exploration toolset for Li–Ta pegmatites; UCD led a work package
- **VECTOR** (Horizon Europe): social acceptance of raw materials; €1.3M to iCRAG
- **MODIO** (MSCA-IF): structural controls on Irish Zn–Pb deposits

Recovery from ores and extractive waste

- Map critical element hosts and textures in ores and extractive waste.
- Link mineral data to sensor sorting and pre-treatment tests.
- Validate recovery routes at an EU pilot with industrial partners.
- Benchmark recovery, water and energy use, impurity removal and waste against a baseline.



Cu–Co mineral intergrowths

MAT-PROD-16 consortium target: TRL 5 to 7

Proposed UCD role: mineral characterisation and data integration

Consortium partners sought

- EU industrial coordinator and pilot operator for processing and refining.
- Mine operators, extractive waste owners and geological surveys with samples and datasets.
- Sorting, pre-treatment and metallurgical technology providers.
- Sensor and AI/data teams, plus LCA, environmental and market assessment specialists.
- Users of recovered materials and experts in standards and deployment.

Complementary expert network offer: MAT-PROD-17

Geological surveys and supply risk experts. UCD offers resource case studies and expert data review.

Contact details

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