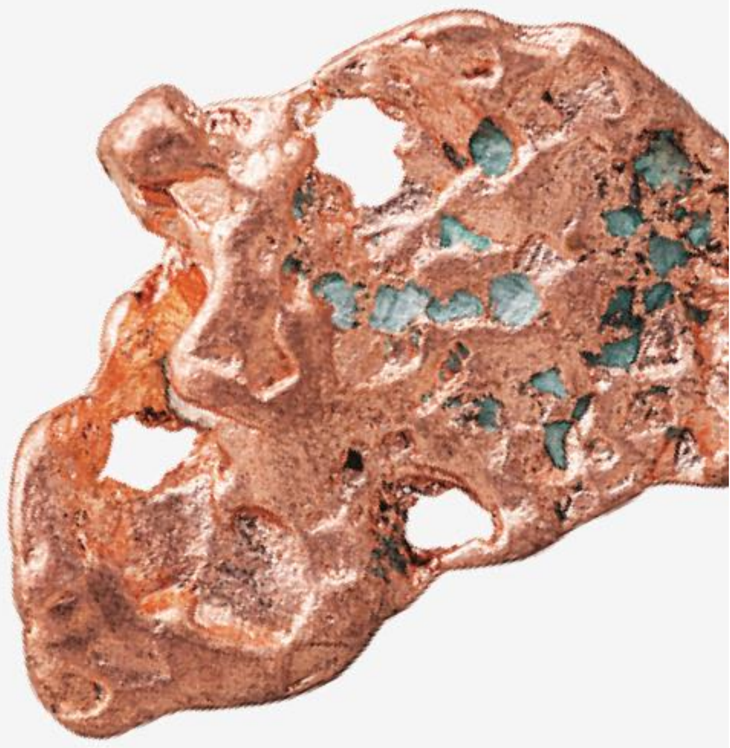
BLOOM

LiBeration anaLysis for Optimising extraction and prOcessing of CRMs



Media kit: Factsheet for policy makers & journalists

What Makes BLOOM a Strategic Game-Changer for Europe?

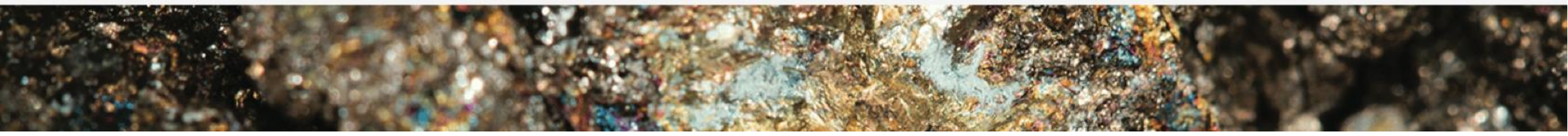
BLOOM, an EU-funded Horizon Europe project, is pioneering advanced digital technologies to modernise how Europe extracts and processes mineral raw materials—particularly those critical to the green and digital transitions.
At the heart of BLOOM is a **new integrated system** for real-time **online Mineral Liberation Analysis**, enhanced by **AI and machine learning**. This innovation will serve both **critical raw materials (CRM)** and **non-CRM** processing plants.

Why It Matters: BLOOM's Strategic Objectives

- **Boost efficiency**: Enable faster, smarter mineral extraction and processing.
- **Cut costs**: Reduce production expenses by streamlining operations.
- **Unlock new resources**: Make it economically viable to exploit low-grade and previously uneconomical deposits—opening new, local sources of raw materials.

Key Technological Innovations

- **Modular Analysis System (MAS)**
  A plug-and-play analyser using LIBS to assess ore composition and particle distribution—delivering results in under 15 minutes.
- **AI-Driven Process Optimisation**
  Real-time data and control algorithms optimise grinding, flotation, and other processing steps, boosting overall system performance.
- **Smart Mine Planning**
  Integrates live cost and yield data into mining strategies to redefine resource estimations and economic value (e.g., Net Present Value, IRR).
- **Pilot Demonstrations**
  Proven performance in real-world mining sites across **Spain, Ukraine, Canada**, and beyond, including copper, tantalum, niobium, and polymetallic ores.
- **Sustainability & Circularity**
  Life Cycle Assessment (LCA) in line with EU Environmental Footprint standards. Supports the reuse of mining waste and low-grade ores, aligning with circular economy goals.
- **Market Readiness**
  A full business case and techno-economic analysis will pave the way for industrial uptake and wider market adoption.



Strategic Impact for Europe

- **Secure EU supply chains**: Reduce import dependence by tapping domestic and partner-country resources (Canada, Ukraine, Brazil).
- **Accelerate green transition**: Support raw material needs for clean tech, batteries, and digital industries.
- **Enhance resilience**: Support EU Critical Raw Materials Act objectives through innovation and sustainable sourcing.
- **Drive economic growth**: Improve competitiveness of the EU raw materials sector via smarter, cleaner technologies.

International Demonstration Sites

BLOOM technologies are being piloted in active mines and development sites in:

- **Canada**: Blue River, Lalor–Copper Mountain
- **Ukraine**: Mostove Project
- **Spain**: Cobre Las Cruces, SandfireMatsa

The selection of these sites reflects the project's commitment to **scalability, replicability, and international cooperation**.

Who's Behind BLOOM?

The BLOOM consortium brings together **14 European partners**, with **additional participants from Ukraine, Canada, and Brazil**. Led by Universitat Politècnica de Catalunya (UPC), our project covers the full spectrum of mining innovation:

- Research & Technology Organisations
- Geological services
- Mining companies
- Large industry players and SMEs

BLOOM is not just a project—it's a strategic investment in Europe's raw material sovereignty, economic resilience, and green industrial future.

Follow our activities and stay tuned!

Funded by the European Union

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