TRAILBLAZER
RESOURCES TECHNOLOGY & CRITICAL MINERALS

JAMES COOK UNIVERSITY AUSTRALIA

Resources Technology and Critical Minerals Trailblazer

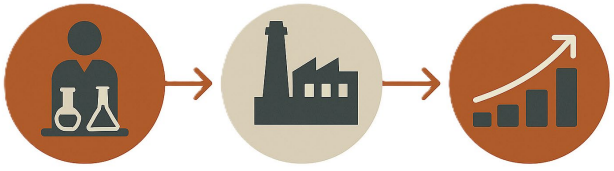
Transforming how industry, universities and research work together

Supporting optimization of resource operations by developing new technologies

Equipping innovators with the skills and knowledge to transform the sector

Project

Sustainable REE Extraction from Australian Ores using Environmentally Friendly Reagents, Advanced Characterisation Techniques and Geological Knowledge



RESEARCH → INDUSTRY COLLABORATION → IMPACT

Curtin University

IN COLLABORATION WITH

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

JAMES COOK UNIVERSITY AUSTRALIA

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Sustainable REE Extraction from Australian Ores using Environmentally Friendly Reagents, Advanced Characterisation Techniques and Geological Knowledge

Project Description

Problem

REE ore characterisation is only available for limited range of ore types.

Current extraction technologies are only applicable to a limited range of ore types and involve high chemical consumptions and production of hazardous waste.

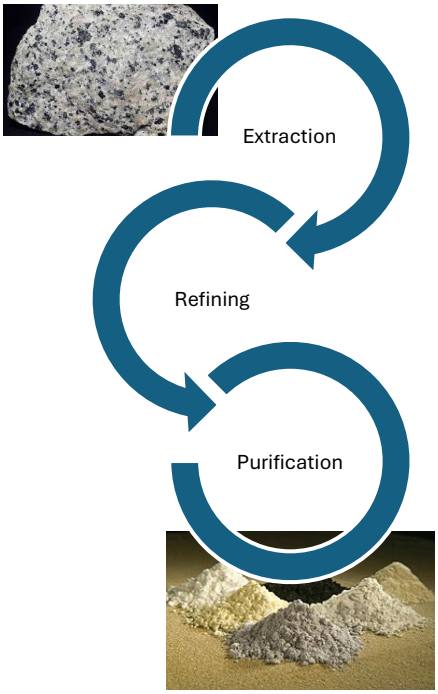
Aims

Develop new protocols for ore type characterisation.

Design environmentally friendly methods for REE extraction.

Translate laboratory characterisation and extraction results into scalable industry tools.

Position Queensland as a characterisation and processing hub for REEs.



Partnerships

Collaborators

James Cook University – Geoscience, Physical Sciences, Engineering

Industry – NorthX, Ark Mines, Basin Energy, Sunshine Metals, Critica Limited

Project Lead

Assoc. Prof. George Vamvounis, JCU

Contributions

Industry ~ $0.87m

Trailblazer ~ $0.77m

Total Project Value ~ $1.6m

June 2026
For further information on JCU Trailblazer projects please send enquiries to: EGRU@jcu.edu.au

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