



MONASH University



AUSTRALIA-INDIA
CRITICAL MINERALS
RESEARCH HUB
(AICMRH)
A Australia-India Consortium



Presentation of AICMRH to the Hon'ble Kevin Hogan Shadow Federal Minister for Trade & Tourism, Australia



Date: Tuesday, 13 December 2022

Venue: Candela Nuevo, Melbourne

Presentation of AICMRH to the Hon'ble Dharmendra Pradhan Minister for Education and Skill Development, Government of India



Date: Wednesday, 24 August 2022

Venue: University of Melbourne
Australia

Date: Monday, September 5, 2022

Venue: Minister's Office, New Delhi.

Presentation of AICMRH to the Hon'ble Pralhad Joshi Minister for Parliamentary Affairs, Coal & Mines, Govt of India, India



Date: Thursday, July 7, 2022

Venue: Four Seasons Hotel, Sydney.

Date: Monday, September 5, 2022

Venue: Minister's Office, New Delhi.

Presentation of AICMRH to the Hon'ble R K Singh Minister for Power, New and Renewable Industry, Government of India, India



Date: Thursday, 14 July 2022.

Location: MinterEllison, Melbourne

Presentation of AICMRH to the Hon'ble Dan Tehan, Minister for Trade, Tourism and Investment Hon'ble Piyush Goyal, Minister for Commerce and Industry, India



Date: Wednesday, 6 April 2022

Venue: Melbourne Cricket Ground
Melbourne

Motivation 1

Supply Chain Workshop Series Critical Minerals

Report and Recommendation



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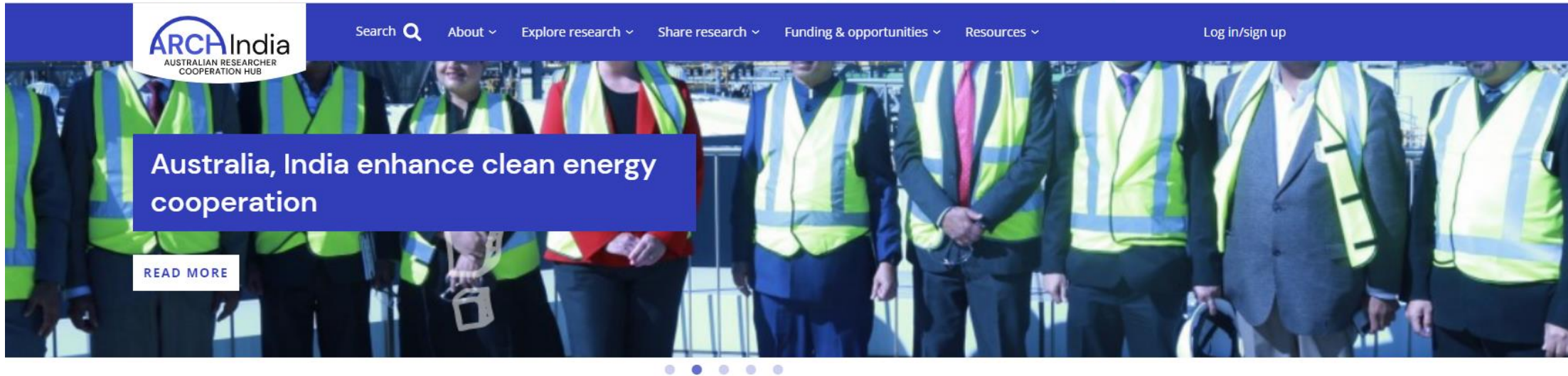
Australia
India
Chamber of
Commerce

MinterEllison

Key Takeaways/Recommendations:

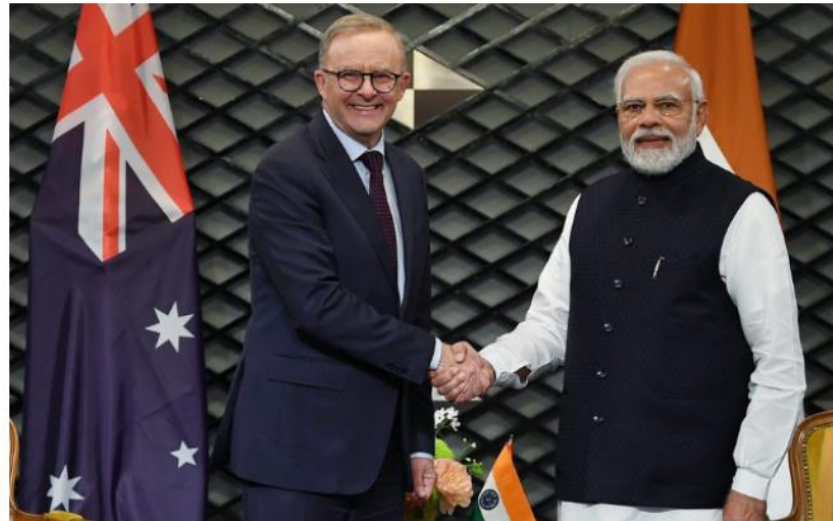
- Establishment of Critical Minerals International Alliance
- Establishment of the 'Australia-India Critical Minerals Research Hub' with Indo-Pacific participation
- Formation of National Industry Working Group (Critical Minerals)
- Critical Minerals Round Tables and Workshops

Motivation 2



The Australian Researcher Cooperation Hub India (ARCH-India), established in 2021, supports researcher engagement between India and Australia. Its primary aim is to strengthen and increase bilateral research collaboration and showcase the research excellence of both countries.

[LEARN MORE](#)



<https://arch-india.org/>

Motivation 3



\$43.2m for CSIRO and India partnerships

CSIRO, Australia's national science agency, will partner with India to tackle shared COVID-19 economic recovery opportunities including critical metals, green steel, waste reduction, water security and food system resilience.

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Media liaison

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Contact Media liaison

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11 JULY 2022

[Psylo_psychedelics_research](#)

11 JULY 2022

[Renewables remain cheapest, but cost reductions on hold](#)

7 JULY 2022

[Covid-19 variants](#)

6 JULY 2022

[Low temperature nanoparticle ink](#)

6 JULY 2022

[RNA platelet discovery](#)

22 MARCH 2022 · STATEMENT

3 Photos

1 Video

CSIRO [will receive \\$43.2 million in funding](#) to support the research.

CSIRO Chief Executive, Dr Larry Marshall said: "Global challenges require global solutions. Both Australia and India have strong advanced technology, science and innovation sectors. This partnership is an immense opportunity to combine our diverse perspectives to build an innovation-led future, and work together to deliver a strong post COVID-19 recovery."

"CSIRO has already had tremendous success in facilitating and collaborating with industry to fast-track cutting-edge research and technology into real world outcomes, and we want to replicate this success with India."

The partnerships will run over five years and include:

- The **India-Australia Innovation and Technology Challenge** will tackle environmental and economic [challenges](#) (such as waste reduction, water security and food system resilience) by supporting small businesses and entrepreneurs to launch innovative technology solutions. Modelled on CSIRO's innovation program, this partnership will help scale around 20 cutting edge Australian and Indian innovations each year. This program will help develop the skills needed to fast-track their technology and ideas into the market at pace. This Partnership has been built off the success of the [recent India-Australia Circular Economy \(I-ACE\) hackathon](#).

- The **India-Australia Critical Minerals Research Partnership** will strengthen supply chains, add value to Australian exports, and work with India to commercialise critical minerals technology. It will contribute to diversified, resilient, and responsible supply chains, creating new jobs and industries for Australia and India. It will integrate Indian scientific, industry and government partners with CSIRO's developing [Critical Energy Metals Mission](#) on the challenge of resourcing the renewable energy transition. This partnership will help to unlock the commercial benefits of integrating Indian and Australian critical minerals value chains, by proving the commerciality of CSIRO-owned critical mineral processing Intellectual Property in the Indian and Australian contexts.

- The **India-Australia Green Steel Partnership** will support innovative technologies and export diversification pathways to deliver jobs of the future to the resources sector in the transition to a low emissions economy. The partnership will leverage CSIRO's relationships with Australian industry and the Indian Government and Indian industry to support commercialisation of innovative Australian and Indian technology to improve efficiencies and environmental outcomes in steel production. This partnership will help India meet its growing steel requirements, deliver on our shared vision for lowering emissions, and help diversify Australian exports. The Partnership will integrate Indian partners with CSIRO's [Towards Net Zero Mission](#) on the pathway of lower carbon economy.

Motivation 4

“**The Chinese Society of Rare Earths (CSRE)** founded in 1980:

“The CSRE is a **scientific and technological researchers’ organization** There are more than 100,000 registered experts in CSRE, which is the biggest **academic community on rare earth in the world**.

Besides serving for the government and researchers on the science and technology of rare earths, CSRE provide a stage for rare earth scientists to exchange their research ideas, propose scientific and technical plans on fundamental and applied fields on rare earths, as well as rare earth R&D plans for the industry. CSRE is, therefore, the most important social force in developing the rare earth science and technology in China. It organizes the International Conference on Rare Earth Development and Application once every four years, and Annual Meeting once every two years periodically. There are 15 subcommittees in CSRE, which cover almost every R&D field on rare earth.”

Source: http://metalpedia.asianmetal.com/metal/rare_earth/organization.shtml

“When you think that **between 2015 and 2019**, China filed more than **11,000 patents in critical minerals extraction and processing**, five times more than the second largest filer, 10 times more than Australia” - [The Hon Dr Jim Chalmers MP](#)

<https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/speeches/address-australian-critical-minerals-summit-sydney>



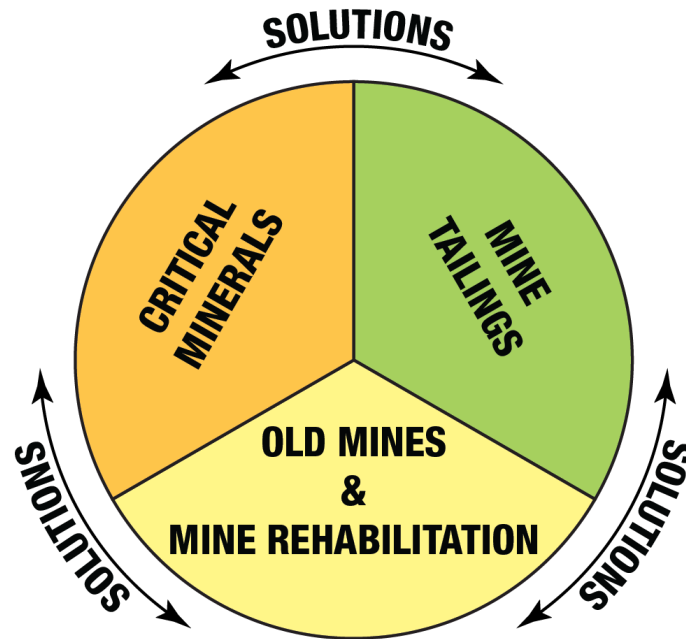
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[A/Prof A K Verma](#)
IIT (BHU) Varanasi



MINING

- How to get ore in a safe, stable & sustainable way
- How to get ore cheaper and purer
- Valorising the mineral wastes

MATERIAL SCIENCE

- New alloys and materials for optimum performance
- Metal substitutes

GEOCHEMISTRY

- Understanding mineralogic signatures
- Delineation of refractory and non-refractory mineral phases

MODELING & MINERAL ECONOMICS

- Scenario models
- Forecast future material requirements
- Mineral criticality

GEOLOGY

- Reserves estimates
- Providing better understanding of grades and gangue minerals

EXTRACTIVE METALLURGY

- Recovery of critical metals from wastes and tailings
- Value adding and coproduct recovery

POLICY / GOVERNANCE

- Environmental, Social and Governance Standards
- Securing supplies
- Prices, Taxation and royalties
- How and where to secure from

ADVANCED MANUFACTURING

- Value-addition Analysis innovation
- Substitutions, metal alloys and performance

Critical Minerals Research

Helping the Green Energy Transition ~ Achieving Environmental Sustainability
~ Valorising the Mineral Wastes ~ Creating New Job Avenues

Vision, Mission and Scope

Vision

Empowering mineral security for the acceleration of a low carbon economy.

Mission

- Establish research partnerships with leading entities within our quad network focused on addressing mineral security.
- Establish a future talent development program on resources trinity to enable the renewable energy transition.
- Progress advocacy and thought leadership initiatives to elevate our partnerships and research recognitions.



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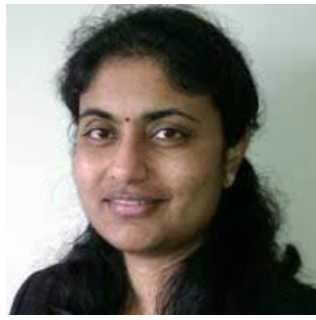
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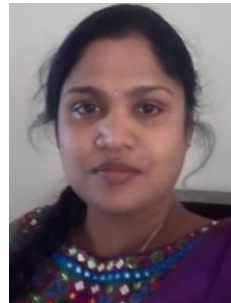
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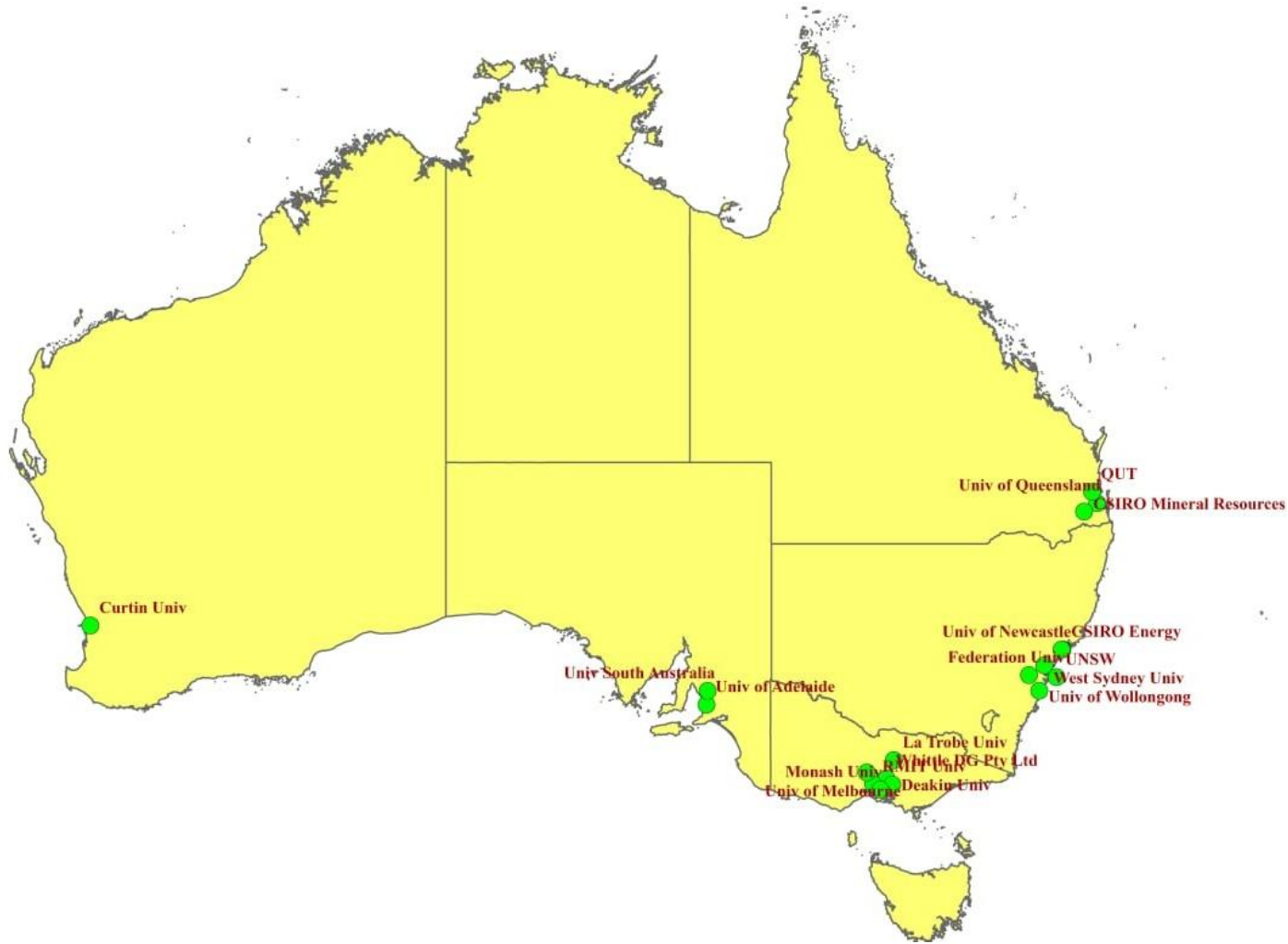


[Dr Anand Kumar](#)
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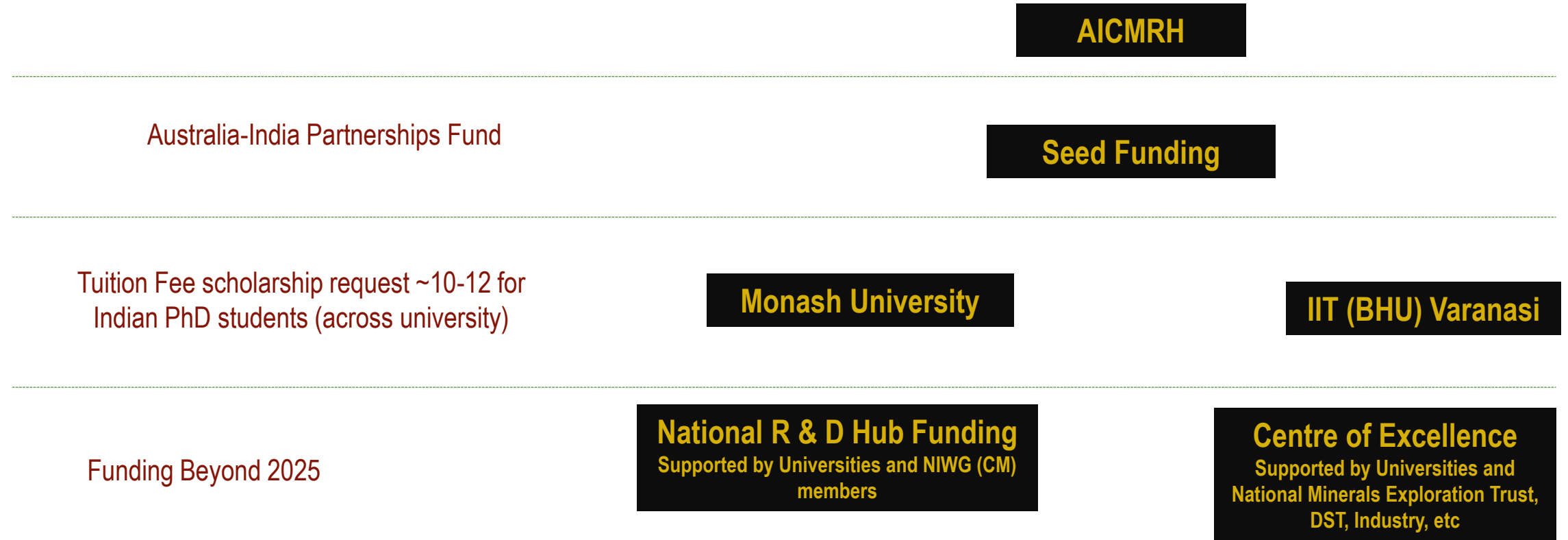


[A/Prof K Ram Chandar](#)
NIT Surathkal

Geographical Spread of the Participating Institutes



Funding and Sustainability Plan

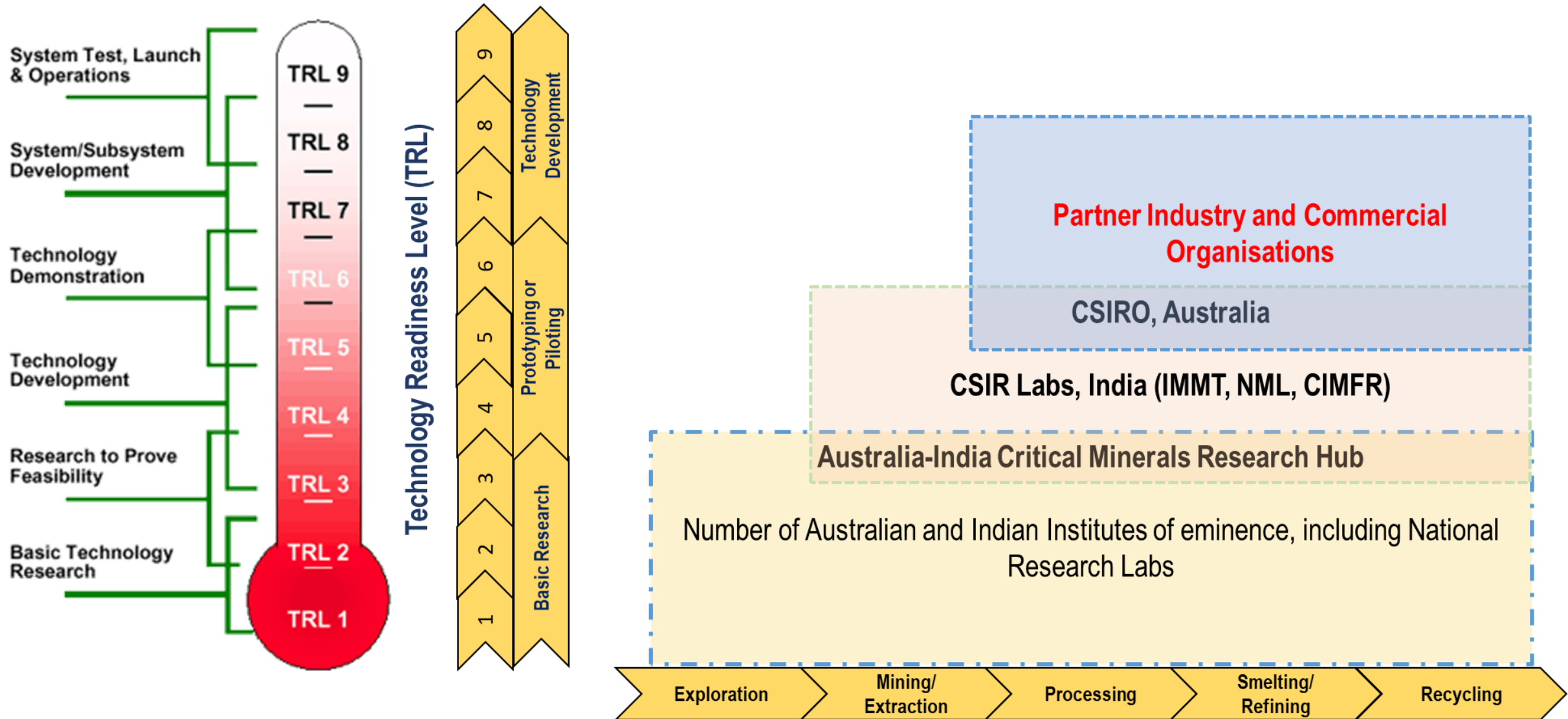


Potential Industry Partners

Rio Tinto, Hindalco Industries, Tata Steel, Vedanta, Cobalt Blue Holdings, Fomento Resources, V M Salgaokar, Australian Vanadium Limited, Critical Minerals Group Ltd, Group 6 Metals Limited, Tablelands Mining Group, Australian Strategic Materials

Hutti Gold Mines, Coal India Limited, NTPC Limited, NMDC, Hindustan Copper, NLC India Limited, Gujrat Mineral Development Corporation, Odisha Mining Corporation, Singareni Collieries Company Limited

Concept to Technology Roadmap



Indo-Australian research hub to be opened at IIT(BHU)

PIONEER NEWS SERVICE ■ VARANASI

IIT (BHU) is leading an Indo-Australian research hub to carry out research activities in the field of strategic critical mineral research important for manufacturing, low carbon economy and digital India. Indian side is led by IIT(BHU) Varanasi with IIT Bombay, IIT Kharagpur, IIT Roorkee, IIT Madras, IIT Kanpur, IIT Guwahati, IIT Indore, IIT(ISM) Dhanbad, NIT Rourkela, NIT Surathkal, IIIT Hyderabad, CSIR Labs as partners. The Australian side is led by Monash University with partners from RMIT University, University of Melbourne, CSIRO, Deakin University, University of Queensland, UNSW, Latrobe University, Queensland University of Technology and Federation University with support from industry partner organisations and leading international researchers.

In due course, the hub will be expanded to the Indo-Pacific region by including researchers from other countries (Japan, Korea etc.) in the region. The hub is able to secure international funding under the Study Melbourne Research Partnerships Programme and is seeking funding from several other sources including the Australia India Strategic Research Fund. Department of Science & Technology and Ministry of Mines. The hub is planning to organise an international symposium on 'Opportunities in critical minerals for Indo-Pacific region' with the involvement of Indian and Australian High Commissioner and Indian Prime Minister Office which will ultimately lead to establishment of an Indo-Pacific Centre of Excellence for Critical Mineral Research Hub at IIT (BHU) Varanasi in due course. Giving this information, IIT (BHU) Director Prof

Pramod Kumar Jain said that over the next 5-7 year period, the hub will develop transformational technologies for a competitive and environmentally sustainable future for Indian mineral industries through high resources recovery, reduced environmental footprint, reductions in energy and water use, as well as preparing highly skilled future leaders for the sector. The hub will transform the minerals industry of India, establishing a new generation of research leaders to support the innovation needed in creating a green economy for the future. This hub will provide advice, ideas and expertise to assist policy makers and help secure the vital supplies of resources needed to drive the new energy economy and support the resources jobs of the future. It will ultimately lead to several academic exchange programmes, MoUs on 'Education, Research and Skills' and on

'Cooperation in the field of Mining and Processing of Critical and Strategic Minerals expanding which will later be expanded to Indo-Pacific region involving IIT(BHU) as the nodal agency,' he said.

He further informed that India has an ambitious industrial reforms agenda to expand manufacturing capability and to transition to a low-carbon and digital economy. 'Indian government has set ambitious targets for several sectors, for example, it has set a very ambitious renewable energy generation target of 175GW by 2022 and 450GW renewable energy by 2030. It also aims to have 30 per cent of vehicles powered by electricity by 2030, which require availability of critical minerals. Maintaining the constant supply chain of critical minerals is important for India to make successful many government programmes such as Atma Nirbhar Bharat and Make in India,' said Prof Jain.

Source: https://twitter.com/IITBHU_Varanasi/status/1450709801944551432

Indo-Australian re X +
https://timesofindia.indiatimes.com/city/varanasi/iit-bhu-leads-indo-australian-research-hub-to-carry-out-intensive-activities-in-field-of

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THIS STORY IS FROM OCTOBER 20, 2021


IIT-BHU leads Indo-Australian research hub to carry out intensive activities in field of strategic critical minerals

Binay Singh / TNN / Oct 20, 2021, 04:16 IST

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