



# Ore2Metal Partnership

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End to End Solutions  
Approach

# Ore2metal-Partnership

Mine to Metal Approach



## Dr. Barun Gorain

- Dr. Barun Gorain, Executive Director, holds over two decades' experience in the mining industry. He focuses on operational excellence, growth projects, innovative mining and processing technologies, along with digital transformation and automation.
- He obtained his PhD from JKMRRC, University of Queensland & B. Tech in Mineral Engineering from the Indian School of Mines.
- He has extensive experience in precious and base metals:
  - **Hindustan Zinc:** Chief Technology & Innovation Officer for Hindustan Zinc, Vedanta Resources, underground mine digital transformation, milling and smelting excellence.
  - **Barrick Gold:** Director of Strategic Technology Solutions focusing on operations optimisation, project development and implementation of breakthrough technologies in various copper and gold operations.
  - **Teck Corp:** Group leader based in Trail, British Columbia, to drive plant optimisation across their zinc, copper, and coal operations, along with designing the Red Dog zinc process plant as a part of the Value Improvement Project.

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Dr. Gorain's expertise lies in:

1

## **Optimum Grind**

(setting the right grind conditions)

- Grind media to suit ore types
- Defining grind target (size distribution x minerals x liberation)
- Grind control to maximise throughput

2

## **Optimum Chemistry**

(identifying the right chemistry)

- Surface and solution chemistry
- Right reagent types and conditions
- Chemical conditions (Eh, pH, DO)

3

## **Optimise Recovery**

(setting the right flotation and/or leach conditions)

- Cell hydrodynamics
- Grade-recovery optimisation
- Flotation and Leach modelling and control

# Vega Mineral Processing Center & Portable Mineral Processing Lab

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## Advantages

- Transportation of ore for testing is the major challenge due to different government restrictions, Remote locations, Oxidation of ore while transportation and various other factors associated with it.
- With portable lab in hand the challenges associated with ore transportation are not there and the floatation study could be done with the use of plant process water and chemicals to replicate the actual plant conditions in batch flotation cell.
- Pulp chemistry changes with water as the process water may contain certain elements which may not be present in the water used for lab testing at a different location. Even the dissolved oxygen level of fresh water vary from place to place so it is very important to carry out the lab tests with process water used at plant. This can be easily done if the a well equipped lab is present at site.
- With portable lab a good amount of time is saved with no ore transportation and in a very systematic way at mine site the problem diagnosis, testing and implementation can be done.