

Barsha Marandi

Hydro & Electrometallurgy Department, CSIR-IMMT |
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Research Areas

Electrometallurgy, Electrowashing, Electrochemical Salt Splitting,
Purification studies using Ion Exchange Resins, Computational Fluid
Dynamics

Education

M.TECH | 2014 | IIT KANPUR

- Chemical Engineering

B.TECH | 2012 | NIT ROURKELA

- Chemical Engineering

Experience

SCIENTIST | CSIR-IMMT | FROM DECEMBER 2015 TO PRESENT

- Development of process flow sheets for recovering the metal values, critical non-ferrous metals and materials from low grade ores/ secondaries, industrial effluents
- Upscale studies including bench and pilot scale testing of various process flow-sheets
- Preparation of Basic Engineering Process Packages (BEP)

Membership in Professional Society

- Life Associate Member of the Indian Institute of Chemical Engineers

Address for communication

Barsha Marandi

Scientist

Hydro & Electrometallurgy Department

CSIR-Institute of Minerals & Materials Technology (Formerly known as Regional Research Laboratory)

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Recent Publications

Jaishree Jeyaraman, Anna Malecka, Poonam Billimoria, Akansha Shukla, Barsha Marandi, Poulam M. Patel, Andrew M. Jackson, Sri Sivakumar " Immuno-silent polymer capsules encapsulating nanoparticles for bioimaging applications " , Journal of Materials Chemistry B: Materials for Biology and Medicine . (2017), 5(26), 5251-5258.

Awards

- Received fourth prize (Rs One lakh prize) in the 'Grand fly ash utilization challenge' contest conducted by NTPC during 2018-19.
- Received prize for poster on Salt Splitting in the micro-symposium on 'Recent Developments in Mineral Processing and mechanical Activation of Solids' held in CSIR-NML Jamshedpur on 22nd February, 2019.

Research Projects Involved

Ongoing projects

1. 'Technology development (Extractive metallurgy) for Polymetallic nodules (PMN)'; Ministry of Earth Sciences, Govt. of India; Rs 3829 Lakhs.
2. 'Technology development (Extractive metallurgy) of Polymetallic Hydrothermal Sulphides (PMS) and Polymetallic Cobalt Crusts (PCC)'; Ministry of Earth Sciences, Govt. of India; Rs 599 Lakhs.
3. 'Recovery of Mn as EMD from low grade ores and secondaries for energy application' (Co-PI); CSIR-FBR project; Rs. 40 lakhs.
4. 'Recovery of Electrolytic Manganese Dioxide (EMD) from Manganese Ore: Process optimization for existing plant at MOIL, alternate process development and Basic Engineering Package preparation'; MOIL, Nagpur; Rs 177 Lakhs.
5. 'Technology transfer of cobalt manufacture'; Mishra Dhatu Nigam Limited (MIDHANI), Hyderabad; Rs 88.5 Lakhs.
6. 'Sedimentation studies, up-scale testing and basic engineering for thickener for treatment of Mn ore fines'; MOIL, Nagpur, Rs 22.42 Lakhs.
7. 'Evaluation of suitability of Nano iron/ iron oxide powders for energy and sensor applications'; NMDC, Hyderabad; Rs 59 Lakhs.
8. 'Cobalt technology from impure cobalt hydroxide: Process flow sheet development'; Mishra Dhatu Nigam Limited (MIDHANI), Hyderabad; Rs 24.78 Lakhs.
9. 'Recovery of alumina from Fly ash – modifications and validation of flow sheet'; National Aluminium Company Ltd. (NALCO), Bhubaneswar; Rs 98 Lakhs.
10. 'Development of process for production of pure and white Alumina Tri Hydrate (ATH) for solid surface application'; National Aluminium Company Ltd. (NALCO), Bhubaneswar; Rs 36.58 Lakhs.

Completed projects

1. 'Multifunctional electrodes and electrolytes for futuristic electrochemical technologies'; CSIR XII plan, New Delhi.
2. 'Feasibility Study for Preparation of Glasses using Quartz Extracted from Fly Ash', **(Project Leader)**, CSIR [OLP]
3. 'Evaluation of design parameters for dewatering of manganese nodules'; National Institute of Ocean Technology (NIOT), Chennai.
4. 'Recovery of alumina from Fly ash'; CSIR (FTT Project).
5. 'Process scale-up and feasibility study for improving Mn/Fe ratio of low grade manganese ore'; TATA Steel Ltd., Jamshedpur.
6. 'Feasibility studies to recover Mn metal from low grade Mn ore'; TATA Steel Ltd., Jamshedpur.
7. 'Technology development, demonstration and shifting of 1000 cm² EM cell for splitting of sodium sulphate solution to sodium hydroxide and sulphuric acid'; Heavy Water Board, Mumbai.
8. 'Processing of secondary resources for the production of battery materials'; CSIR [FTT Project].
9. 'Extraction of Tungsten values from Hutti gold mine tailings concentrate and scrap: process flow sheet development, bench scale studies and pilot scale testing'; Defense Metallurgical Research Laboratory (DMRL, (DRDO)), Hyderabad.
10. 'Recyclability strategy of value added utilization of iron/ manganese ore tailing /low grade ore: evaluation of energy storage capacities'; Ministry of Mines, Govt. of India.