

Curriculum Vitae

Dr. Barsha Dash

Scientist

Hydro & Electrometallurgy Department

CSIR-Institute of Minerals and Materials Technology, Bhubaneswar, India

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Qualifications

2012 PhD, Sambalpur University, India

Thesis title: “Precipitation of hydrated oxides of aluminium from different sources and their dehydrated products”

2001 MSc, Sambalpur University, India

1999 BSc, Sambalpur University, India

Achievements

1. Qualified CSIR-National Eligibility Test (**NET-LS**) - Twice in June and December 2004
2. Qualified Graduation Aptitude Test of Engineering (**GATE**)-2005 with 93.55 percentile
3. Qualified CSIR-Senior Research Fellowship (**CSIR-SRF**)-2007

Awards

1. Prof. Dayanidhi Pattnaik award-2010 for best research paper from Orissa Chemical Society
2. Prof. G.B.Behera award for best PhD thesis-2012, from Orissa Chemical Society

Patents

1. A Process for Production of Crystalline Boehmite by Precipitating from Supersaturated Sodium aluminate Liquor under Atmospheric conditions at a Temperature as low as 50°C.

I.N. Bhattacharya, **B. Dash**, B.C. Tripathy, K. Sanjay, S.C. Das, V.N. Misra, C.R. Mishra and S.P. Mohapatra.

Indian patent No. 0907DEL2006

Granted in India -267384 Date-16/07/2015

2. A novel hydrometallurgical process for the production of tellurium from high lead bearing copper refinery anode slime
Tondepu Subbaiah, Barada Kanta Mishra, Malay Kumar Ghosh, Kali Sanjay, Indra Narayan Bhattacharya, Chinmaya Kumar Sarangi, **Barsha Dash**, Abdul Rauf Sheik

CSIR patent number- 2459DEL2013, Dt. 20.08.2013

3. Hydrometallurgical Process For The Recovery Of Tellurium From High Lead Bearing Copper Refinery Anode Slime.

Tondepu Subbaiah, Barada Kanta Mishra, Malay Kumar Ghosh, Kali Sanjay, Indra Narayan Bhattacharya, Chinmaya Kumar Sarangi, **Barsha Dash**, Abdul Rauf Sheik.

Patent No.US 2015/0053572 A1, Dt.26.02.2015

4. A process for the preparation of thermally treated composite of Zn-Al layered double hydroxide having antibacterial activity

Barsha Dash, Sony pandey, Geetanjali Mishra

CSIR patent number- 2893 DEL 2013, Dt.30.09.2013

Book

Precipitation and Dehydration of Hydrated Alumina

Authors: **Barsha Dash**, Indra Narayan Bhattacharya, Bijay Kumar Mishra

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Book Chapter

Series Environmental Science and Engineering

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Publications

1. Meenakshi Rath, Laxmi Priya Behera, Barsha Dash, Abdul Rauf Sheik, Kali Sanjay, Recovery of dimethylglyoxime (DMG) from Ni-DMG complexes, **Hydrometallurgy**, 176, 2018, 229-234
[*Corresponding author](#)
2. Geetanjali Mishra, **Barsha Dash**, Sony Pandey, Layered double hydroxides: A brief review from fundamentals to application as evolving biomaterials, **Applied Clay Science**, 153, 2018, 172-186.
[*Corresponding author](#)
3. R.R.Samal, **Barsha Dash**, C.K.Sarangi, K.Sanjay, T.Subbaiah, G.Senanayake, M.Minakshi, Influence of Synthesis Temperature on the Growth and Surface Morphology of Co₃O₄ Nanocubes Supercapacitor Applications, **Nanomaterials**, 7, 2017, 356, doi:10.3390/nano7110356
[*Corresponding author](#)
4. Geetanjali Mishra, **Barsha Dash**, Sony Pandey, Diptipriya Sethi, C. Ganesh Kumar, Comparative Evaluation of Synthetic Routes and Antibacterial/Antifungal Properties of Zn–Al Layered Double Hydroxides Containing Benzoate Anion, **Environmental Engineering Science**, DOI: 10.1089/ees.2017.0062
[*Corresponding author](#)
5. Geetanjali Mishra, **Barsha Dash**, Diptipriya Sethi, Sony Pandey, B.K.Mishra, Orientation of organic anions in Zn-Al layered double hydroxides with enhances antibacterial property, **Environmental Engineering Science**, 34, 2017, 516-527, DOI: 10.1089/ees.2016.0531
[*Corresponding author](#)

6. Geetanjali Mishra, **Barsha Dash**, Ajit Dash, I.N.Bhattacharya, Surfactant directed synthesis of mesoporous alumina and α -alumina single crystal, **Crystal Research and Technology**, 2016, 1-8.
**Corresponding author*
7. A.Biswal, S.Mahakud, Sandhyarani Bhuyan, **B.Dash**, C.K.Sarangi, Kali Sanjay, B.C.Tripathy, T.Subbaiah, I.N.Bhattacharya, Sung-HoJoo, Shun Myung Shin, K.H.Park, Recovery of Co metal and Electrolytic Manganese Dioxide (EMD) from Co–Mn sludge, **Hydrometallurgy**, 152, 2015, 159-168.
8. Ayon Bala Baral, **Barsha Dash**, Malay K.Ghosh, Tondepu Subbaiah, Manickam Minakshi, Pathway of Sucrose Oxidation in Manganese (Pyrolusite) Nodule, **Industrial Engineering and Chemistry Research**, 54, 2015, 12233-12241.
9. N.K.Sahu, C.Sarangi, **B.Dash**, B.C.Tripathy, B.K.Satpathy, D.Meyrick, I.N.Bhattacharya, “Role of hydrazine and hydrogen peroxide in aluminium hydroxide precipitation from sodium aluminate solution, *Trans. Nonferrous Met. Soc. China*, 25, 2015,615-521.
10. G. Barik, E. Pradhan, **B.Dash**, K.Sarangi, T.Subbaiah, “Preparation of layered nickel aluminium double hydroxide from waste solution of nickel”, **Minerals Engineering**, 69, 2014, 107-112.
11. A. Biswal, S. Mahakud, **B.Dash**, K.Sanjay, T. Subbaiah, “Influence of alternative alkali reagents on Fe removal during recovery of Mn as Electrolytic Manganese Dioxide (EMD) from Mn sludge”, **Hydrometallurgy**, 140, 2013, 151-162.
12. Geetanjali Mishra, **Barsha Dash**, Sony Pandey, Prangya Paramita Mohanty, “Antibacterial actions of silver nanoparticles incorporated Zn-Al layered double hydroxide and its spinel” **Journal of Environmental and Chemical Engineering**, 1, 2013, 1124-1130.
**Corresponding author*
13. Pinak Patnaik, Swagatika Mohanty, Sangitarani Pradhan, B. Dash, Ajit Dash, R. Sakthivel, T. Subbaiah, "Synthesis and characterization of fibrous nickel hydroxide obtained from nickel spent catalyst" **Transactions of Nonferrous Metals Society of China**, 23, 2013, 2977-2983.
14. Sangeeta R Pradhan, **Barsha Dash**, Kali Sanjay, T. Subbaiah, “Extraction of Ni (II) from spent hydrodesulfurization HDS catalyst through leaching and electroless precipitation of Ni(OH)₂”, **Metallurgical and Materials Transactions B**, 44 (2), 2013, 469-476.

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15. A comparative study on the precipitation of hydrated alumina from different sources, **Barsha Dash**, B.C.Tripathy, I.N.Bhattacharya, T.Subbaiah, *International Journal of Metallurgical Engineering*, 1(5), 2012, 78-82.

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16. N. K. Sahu, **Barsha Dash**, Suchismita Sahu, I. N. Bhattacharya, T. Subbaiah, "Extraction of copper by leaching of electrostatic precipitator dust and two step removal of arsenic from leach liquor", *Korean Journal of Chemical Engineering*, 29 (11), 2012, 1638-1642.

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17. Pravas Ranjan Behera, **Barsha Dash**, Prodip Kumar Sen, Tondepu Subbaiah and Raj Kishore Paramguru, "Studies on characterization and leaching of malachite ore", *The IUP Journal of Chemical Engineering*, Vol. III, No. 3, 2011, 51-61

18. ***Barsha Dash**, I.N.Bhattacharya, B.V.R.Murthy, R.K.Paramguru, "Preparation and characterization of molybdenum trioxide from spent HDS catalyst", *Korean Journal of Chemical Engineering*, 28(7), 1546-1549 (2011).

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19. ***Barsha Dash**, B.C.Tripathy, I.N.Bhattacharya, B.K.Mishra, "Additive action on boehmite precipitation in sodium aluminate solution", *Dalton Transaction*, 39 (2010), 9108-9111.

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20. ***Barsha Dash**, B.Das, "Adsorption of Pb (II) ions from Aqueous Solutions using a Low-Grade Iron Ore as an Effective Adsorbent", *Adsorption Science and Technology*, 27(5) 2009, 479-491.

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21. Manganese recovery from medium grade ore using a waste cellulosic reductant, D. Hariprasad, **B. Dash**, M.K.Ghosh, S.Anand, *Indian Journal of Chemical Technology*, 16(4), (2009) 322-327.

22. **B. Dash**, B.C.Tripathy, I.N.Bhattacharya, S.C.Das, C.R.Mishra and B.K.Mishra; Precipitation of boehmite in sodium aluminate liquor", *Hydrometallurgy*, Volume 95, Issues 3-4, February 2009, Pages 297-301.

23. **B. Dash**, B.R. Das, B.C. Tripathy, I.N. Bhattacharya and S.C. Das; Acid dissolution of alumina from waste aluminium dross", *Hydrometallurgy*, Volume 92, Issues 1-2, May 2008, Pages 48-53. (*Top 20th article of Hydrometallurgy 2008*).

24. D.Hariprasad, **B. Dash**, M.K.Ghosh and S.Anand; “Leaching of manganese ores using saw dust as a reductant”, *Minerals Engineering*, Volume 20, Issue 14, November 2007, Pages 1293-1295.
25. **B. Dash**, B.C.Tripathy, I.N.Bhattacharya, S.C.Das, C.R. Mishra and B.S.Pani; “Effect of temperature and alumina/caustic ratio on precipitation of boehmite in synthetic sodium aluminate liquor”, *Hydrometallurgy*, Volume 88, Issues 1-4, August 2007, Pages 121-126.
26. B.R. Das, **B. Dash**, B.C. Tripathy, I.N. Bhattacharya and S.C. Das; “ Production of η -alumina from waste aluminium dross”, *Minerals Engineering*, Volume 20, Issue 3, March 2007, Pages 252-258
27. ***B. Dash**, B.C.Tripathy and I.N.Bhattacharya; “Adsorption of Copper and Cadmium on Calcined Aluminium Hydroxide Prepared from Waste Aluminium Dross”, *Mines and Minerals Reporter*, Volume 3, No.8, December 2006, pages 28-31.

Projects involved in

1. Extraction of Tungsten concentrate from Hutti goldmine tailings and scrap.
2. Recovery of Tellurium powder from anode slime, Hindalco Industries Ltd., Gujrat.
3. Recovery of copper and tellurium from secondary raw materials, Grishma Special Materials, Mumbai.
4. Preparation of antimicrobial ceramic from Zn-Al LDH, CSIR-EMPOWER Project.
5. Nickel recovery from refinery electrolyte (Phase-I, Phase-II), Hindalco Industries Ltd., Gujrat.
6. Recovery of lead from anode slime, Hindalco Industries Ltd., Gujrat.
7. Preparation and characterization of electrolytic manganese dioxide suitable for batteries from slurry containing manganese and cobalt, KIGAM, South Korea.
8. Recycling of lithium ion batteries, Renault Nissan Technology and Business Centre, India
9. Metal recovery from polymetallic nodules: Technology Development–Extractive Metallurgy, MoES, New Delhi.
10. Potasic fertilizer technology to empower the nation, CSIR network project.
11. Multifunctional electrodes and electrolytes for future technologies, CSIR network.
12. Design and development of electrochemical mixer settler for recovery of Pd from HLLW using ionic liquid, IGCAR, Kalpakkam.