

## Faculty Profile

**Name: Dr. Debadutta Das**

**Qualification: MSc, Ph. D**

**Designation: Assistant Professor**

**Email Id: [deba.chemistry@gmail.com](mailto:deba.chemistry@gmail.com)**



### **Area of interest:**

Physical Chemistry, Surface Chemistry and Chemical Engineering

### **Area of research:**

Slurry stabilization, Adsorption, Surface Modification of Silk, Green Chemistry Technology, and Materials Science

### **Teaching Area:**

- UG: Physical chemistry,
- Organic chemistry & Analytical chemistry
- PG: Physical chemistry

● **UG: 14 years**

● **PG: 2 years**

**Research Supervision:****• Completed (M.Phil/Ph.D):**

| <b>Name of the Student</b> | <b>Degree</b> | <b>University</b>                                               | <b>Title of the Thesis</b>                                                                                   | <b>Date of Registration</b> | <b>Date of Submission</b> | <b>Date of Award of Degree</b> |
|----------------------------|---------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|--------------------------------|
| Mandakini Bihari           | Ph. D         | Centurion university of technology and management, BBSR, Odisha | Development of surfactant for high concentration iron ore water slurry                                       | 19-03-2019                  | 07-08-2023                | November 25,2023               |
| Pritijyostna Mohapatra     | PhD           | BPUT, Rourkela, Odisha                                          | Development of natural and synthetic surfactant for stabilisation of high concentration fly ash water slurry | 10.07.2019                  | 07.07.2025                |                                |

**• Ongoing(M.Phil/Ph. D):**

| <b>Name of the Student</b> | <b>Degree</b> | <b>University</b>                | <b>Title of the Thesis</b>                                | <b>Date of Registration</b> |
|----------------------------|---------------|----------------------------------|-----------------------------------------------------------|-----------------------------|
| Bhagyashree Biswal         | Ph. D         | GIET University, Gunupur, Odisha | Surface modification of Muga silkcocoon using natural and | 31.08.2021                  |

|                  |     |                                     |                                                         |            |
|------------------|-----|-------------------------------------|---------------------------------------------------------|------------|
|                  |     |                                     | natural-synthetic mixed<br>surfactant                   |            |
| Jharana<br>Sahoo | PhD | GIET University,<br>Gunupur, Odisha | Biosynthesis of<br>ZnO nanoparticle and its application | 15.03.2022 |

#### Research Articles Published: (Total No. 46)

| S.No. | Author(s)                                                                                    | Title                                                                                                                     | Name of Journal(Publisher) and DOI                                                                                                                                                      | Volume | Page   | Year |
|-------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|------|
| 1     | Pritijyotsna Mohapatra, Umakanta Behera, Manas Ranjan Senapati, And <b>Debadutta Das</b>     | Synergistic impact of a natural extract and bottom ash on the rheology of high-concentration fly ash water slurry         | International journal of coal preparation and utilization (Taylor & Francis), <a href="https://doi.org/10.1080/19392699.2025.2489541">https://doi.org/10.1080/19392699.2025.2489541</a> | 45     | 1-16   | 2025 |
| 2     | Jharana Sahoo, Mandakini Behari, Purabi Kar, Somanath Sahoo & <b>Debadutta Das</b>           | Eco-Friendly Degumming of Tussar Silk Cocoons Using a Natural, nonionic Surfactant                                        | Journal of Macromolecular Science, Part B – Physics                                                                                                                                     | -      | 1–16   | 2025 |
| 3     | Bhagyashree Biswal, Manoja Das, <b>Debadutta Das</b> ,* Deeptimayee Prusty, Aritra Kumar Dan | Deciphering biosurfactant-salt interaction and its influence on biosurfactant activity in muga silk fibroin extraction    | Materials Chemistry and Physics                                                                                                                                                         | 344    | 131164 | 2025 |
| 4     | Swetashree Pattanaik, Umakanta Behera, <b>Debadutta Das</b> *, Pramila Kumari Misra          | Enhancing the Flowability of Crude Oil-Water Emulsions in Pipeline Transportation using Trigonella foenum-graecum Extract | Journal of Macromolecular Science, Part B                                                                                                                                               | 64     | 1–19   | 2024 |

|   |                                                                                          |                                                                                                                                                                     |                                       |     |           |      |
|---|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----|-----------|------|
| 5 | Soumik De, Mona SunaydihAlsaeeedi,<br><b>DebaduttaDas*</b>                               | Mechanistic insight into the synergistic role of the dual-surfactant system as a green solvent for deoximation reaction: An experimental and computational analysis | Journal of Molecular Liquids          | 400 | 124559    | 2024 |
| 6 | Pritijyotsna Mohapatra, Umakanta Behera· Manas Ranjan Senapati<br><b>Debadutta Das *</b> | Improving the rheological characteristics of fly ash water slurry using aqueous extract of <i>Dioscorea hispida</i> .                                               | Energy sources                        | 46  | 336-346   | 2023 |
| 7 | B.M. Murmu, S.S. Behera, A. Ray, D. Ghosh, <b>D. Das</b> , B.K. Bindhani, P.K. Parhi     | A review on adsorptive removal study of organic pollutant (s) using activated sorbents from waste contaminated water                                                | Indian Journal of Chemical Technology | 30  | 589-605   | 2023 |
| 8 | Biswal, B., Dan, A.K., Aamna, B., Behari, M., Das, M., <b>Debadutta Das*</b>             | Self-Assembled Micellar Saponin from <i>Sapindus laurifolia</i> Vahl.: Investigations on the Surfactant Activity on the Extraction of Fibroin from Silk Cocoons.    | J. Polym. Environ                     | 31  | 3803–3813 | 2023 |

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|----|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----|------------|------|
| 9  | Mandakini Behari , Ardhe<br>ndu Mouli<br>Mohanty, <b>Debadutta Das</b>                               | <b>Insights into the<br/>transport phenomena of<br/>iron ore particles by<br/>utilizing extracted Bio-<br/>surfactant from <i>Acacia<br/>concinna</i> (Willd.) Dc.</b>                    | Journal of Molecular Liquids             | 382 | 121974     | 2023 |
| 10 | Soumik De, Aritra Kumar<br>Dan, Dr. Raghaba<br>Sahu, Dr. Sagarika<br>Parida, <b>Debadutta Das*</b> . | Total Synthesis of Natural<br>Products using Gold<br>Catalysis                                                                                                                            | Chemistry an Asian journal               | 17  | 896(1-20)  | 2022 |
| 11 | Soumik De, Aritra Kumar<br>Dan, Raghaba Sahu,<br><b>Debadutta Das*</b> .                             | Asymmetric Synthesis of<br>Halocyclized Products by<br>Using Various Catalysts:<br>A State-of-the-Art<br>Review.                                                                          | European Journal of Organic<br>Chemistry | 32  | e202200817 | 2022 |
| 12 | <b>Kumar Dan, A., Biswal,<br/>B., Das, M., Parida, S.,<br/>Kumar Parhi, P., Das,<br/>Debadutta.*</b> | Aqueous and chemical<br>extraction of saponin of<br><i>Acacia concinna</i> (Willd.)<br>Dc.: An effective Bio-<br>surfactant solution to<br>extract silk fibroin from<br>muga silk cocoons | J. Mol. Liq.                             | 360 | 119547     | 2022 |

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| 13 | Mandakini Behari,<br><b>Debadutta Das*</b> , and<br>Ardhendu Mouli Mohanty<br>.                                                                            | Influence of Surfactant for<br>Stabilization and Pipeline<br>Transportation of Iron Ore<br>Water Slurry: A Review.                                                                 | ACS Omega                                                            | 7   | 28708–2872<br>2 | 2022 |
| 14 | Bhagyashree Biswal,<br>Aritra Kumar Dan, Atanu<br>Sengupta, Manoja Das,<br>Birendra Kumar<br>Bindhani, <b>Debadutta<br/>Das*</b> & Pankaj Kumar<br>Parhi,  | Extraction of Silk<br>Fibroin with Several<br>Sericin Removal Processes<br>and its Importance in<br>Tissue Engineering: A<br>Review .                                              | Journal of Polymers and the<br>Environment                           | 30  | 2222–2253       | 2022 |
| 15 | Mandakini Behari , A.M.<br>Mohanty , <b>Debadutta<br/>Das*</b> .                                                                                           | Influence of a plant-based<br>surfactant on improving<br>the stability of iron ore<br>particles for dispersion and<br>pipeline transportation                                      | Powder Technology                                                    | 407 | 117620          | 2022 |
| 16 | Shaswat Kumar Das,<br>Aritra Kumar Dan,<br>Umakanta Behera, Ankit<br>Kumar Tripathi,<br>Mandakini<br>Behari, <b>Debadutta Das*</b> ,<br>Pankaj Kumar Parhi | A novel approach on<br>leaching study for removal<br>of toxic elements from<br>thermal power plant-based<br>fly ash using natural bio-<br>surfactant                               | Case Studies in Chemical and<br>Environmental Engineering,<br>Volume | 4   | 100156          | 2021 |
| 17 | <b>Debadutta Das*</b> , Shaswat<br>Kumar Das, Pankaj<br>Kumar Parhi, Aritra<br>Kumar Dan, Snehasish<br>Mishra, Pramila K. Misra,                           | Green strategies in<br>formulating, stabilizing<br>and pipeline transportation<br>of coal water slurry in the<br>framework of WATER-<br>ENERGY NEXUS: A<br>state of the art review | Energy Nexus                                                         | 4   | 100025          | 2021 |

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| 18 | Umakanta Behera, Shaswat Kumar Das, Devi Prasad Mishra, Pankaj Kumar Parhi & <b>Debadutta Das*</b>                                                                                               | Enhancing the rheology and leachability of fly ash slurry using natural – synthetic mixed surfactant system for hydraulic stowing in underground mines | International Journal of Coal Preparation and Utilization | 42 | 3724-3744   | 2021 |
| 19 | Umakanta Behera, Shaswat Kumar Das, Devi Prasad Mishra, Pankaj Kumar Parhi, and <b>Debadutta Das*</b>                                                                                            | Sustainable Transportation, Leaching, Stabilization, and Disposal of Fly Ash Using a Mixture of Natural Surfactant and Sodium Silicate                 | ACS Omega                                                 | 6  | 22820–22830 | 2021 |
| 20 | Ahmed Mahal, Meitao Duan, Dhafer S. Zinad, Ranjan K. Mohapatra, Ahmad J. Obaidullah, Xiaoyi Wei, Manoj K. Pradhan, <b>Debadutta Das</b> , Venkataramana Kandi, Hany S. Zinadjk and Quanhong Zhu. | Recent progress in chemical approaches for the development of novel neuraminidase inhibitors                                                           | RSC Advances                                              | 3  | 1-37        | 2021 |

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| 21 | Shaswat Kumar Das, Jyotirmoy Mishra, Syed Mohammed Mustakim, Adeyemi Adesina, Cyriaque Rodrigue Kaze & <b>Debadutta Das</b>                                                 | Sustainable utilization of ultrafine rice husk ash in alkali activated concrete: Characterization and performance evaluation                                                | Journal of Sustainable Cement-Based Materials | 11  | 100-112   | 2021 |
| 22 | Raghava Sahu, Ranjan K. Mohapatra, Saud I. Al-Resayes, <b>Debadutta Das</b> , Pankaj K. Parhi, Shakilur Rahman, Lucia Pintilie, Manjeet Kumar, Mohammad Azam, Azaj Ansari., | An efficient synthesis towards the core of Crinipellin: TD-DFT and docking studies                                                                                          | Journal of Saudi Chemical Society             | 25  | 101193    | 2021 |
| 23 | Ranjan K. Mohapatra, Lucia Pintilie, Venkataramana Kandi, Ashish K. Sarangi, <b>Debadutta Das</b> , Raghava Sahu, Lina Perekhoda.                                           | The recent challenges of highly contagious COVID-19, causing respiratory infections: Symptoms, diagnosis, transmission, possible vaccines, animal models, and immunotherapy | Chemical Biology and Drug design              | 6   | 1187-1208 | 2020 |
| 24 | S.S. Behera, Subhendu K. Panda, <b>D. Das</b> , R.K. Mohapatra, H.I. Kim, J.Y. Lee, R.K. Jyothi, P.K. Parh.                                                                 | Microwave assisted leaching investigation for the extraction of copper(II) and chromium(III) from spent catalyst                                                            | Separation and Purification Technology        | 244 | 116842    | 2020 |

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| 25 | Najla M. El-Barasi,<br>Miloud M. Miloud, Marei<br>M. El-ajaily, Ranjan K.<br>Mohapatra, Ashish K.<br>Sarangi, <b>Debadutta Das*</b> ,<br>Ahmed Mahal, Pankaj K.<br>Parhi, Lucia Pintilie,<br>Soumya R. Barik, Md.<br>Nur Amin Bitu, Md.<br>Kudrat-E-Zahan, Zishan<br>Tabassum, Saud I. | Al-Resayes, Mohammad<br>Azam, Synthesis,<br>structural investigations<br>and antimicrobial studies<br>of hydrazone based ternary<br>complexes with Cr(III),<br>Fe(III) and La(III) ions | Journal of Saudi Chemical<br>Society | 24  | 492-503 | 2020 |
| 26 | <b>Debadutta Das*</b> , Ashish<br>K. Sarangi, Ranjan K.<br>Mohapatra, Pankaj K.<br>Parhi, Ahmed Mahal,<br>Raghava Sahu, Md.<br>Kudrat-E-Zahan                                                                                                                                          | Aqueous extract of<br>Shikakai; a green solvent<br>for deoximation reaction:<br>Mechanistic approach<br>from experimental to<br>theoretical                                             | Journal of Molecular Liquids         | 309 | 113133  | 2020 |
| 27 | <b>Debadutta Das*</b> , Ranjan<br>K. Mohapatra, Hamza<br>Belbsir, Anupama<br>Routray, Pankaj K. Parhi,<br>Khalil El-Hami                                                                                                                                                               | Combined effect of natural<br>dispersant and a stabilizer<br>in formulation of high<br>concentration coal water<br>slurry: Experimental and<br>rheological modeling                     | Journal of Molecular Liquids         | 320 | 114441  | 2020 |

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| 28 | <b>Debadutta Das*</b> , Ranjan K. Mohapatra, Pankaj K. Parhi, Ashish K. Sarangi, Raghaba Sahu, and Soumya R. Barik,                                                               | Sustainable and Efficient Route for the Regeneration of Carbonyl Compounds from Oximes Using Aqueous Extract of Sapindus laurifolia under Microwave Radiation | ACS Omega                        | 5  | 7716–7721 | 2020 |
| 29 | Ashish Kumar Sarangi, Bipin Bihari Mahapatra, Ranjan Kumar Mohapatra, Sisir Kumar Sethy, <b>Debadutta Das</b> , Lucia Pintilie, Md. Kudrat-E-Zahan, Mohammad Azam, Hemanta Meher, | Synthesis and characterization of some binuclear metal complexes with a pentadentate azodyeligan: An experimental and theoretical study                       | Applied organometallic chemistry | 34 | e5693     | 2020 |
| 30 | Ranjan Kumar Bhuyan, Ranjan Kumar Mohapatra, Ganeswar Nath, Basanta Kumar Sahoo, <b>Debadutta Das*</b> , D. Pamu .                                                                | Influence of high-energy ball milling on structural, microstructural, and optical properties of Mg <sub>2</sub> TiO <sub>4</sub> nanoparticles                | J Mater Sci: Mater Electron      | 31 | 628–636   | 2020 |
| 31 | <b>Debadutta Das*</b> , Anupama Routray, Swetashree Pattanaik, Pankaj Kumar Parhi, Bijnyan Ranjan Das.                                                                            | , Effect of particle size distribution and selective alcohol additives for preparation of high concentration coal-water slurry                                | Micro and Nanosystem             | 12 | 102-111   | 2020 |

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| 32 | Ranjan K. Mohapatra,<br>Pradeep K. Das, Manoj K.<br>Pradhan, Marei M. El-<br>Ajaily, <b>Debadutta Das*</b> ,<br>Halima F. Salem,<br>Umakanta Mahanta,<br>Gouranga Badhei, Pankaj<br>K. Parhi, Abdussalam A.<br>Maihub& Md. Kudrat -E-<br>Zahan. , | Recent Advances in Urea-<br>and Thiourea-Based Metal<br>Complexes: Biological,<br>Sensor, Optical, and<br>Corrosion Inhibition<br>Studies | Comments on Inorganic<br>Chemistry                          | 39 | 127-187 | 2019 |
| 33 | Swetashree Pattanaik,<br>Pankaj Kumar Parhi,<br><b>Debadutta Das*</b> ,<br>Akshaya Kumar Samal,                                                                                                                                                   | Acacia concinna: A<br>natural dispersant for<br>stabilization and<br>transportation of fly ash-<br>water slurry                           | Journal of the Taiwan<br>Institute of Chemical<br>Engineers | 99 | 193-200 | 2019 |
| 34 | Jibardhan Meher,<br><b>Debadutta Das*</b> ,<br>Akshaya K. Samal,<br>Pramila K. Misra,                                                                                                                                                             | Role of Maceral<br>Composition on the<br>Formulation of<br>Concentrated Coal-Water<br>Slurry Using a Natural<br>Surfactant                | Materials Today: Proceedings                                | 3  | 542-550 | 2019 |

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| 35 | <b>Debadutta Das*</b> ,<br>SwetashreePattanaik ,<br>Pankaj Kumar Parhi,<br>Ranjan Kumar<br>Mohapatra, Rajesh Kumar<br>Jyothi, Jin-Young Lee,<br>and Hong In Kim,,                                                                            | Stabilization and<br>Rheological Behavior of<br>Fly Ash–Water Slurry<br>Using a Natural Dispersant<br>in Pipeline Transportation                                                       | ACS Omega                                                    | 4  | 21604–<br>21611   | 2019 |
| 36 | Anupama Routray,<br>Pradipta K. Senapati,<br>Mamata Padhy,<br><b>Debadutta Das*</b> , Ranjan<br>K. Mohapatra                                                                                                                                 | Effect of mixture of a non-<br>ionic and a cationic<br>surfactant for preparation<br>of stabilized high<br>concentration coal water<br>slurry                                          | International Journal of Coal<br>Preparation and Utilization | 42 | Pages 925-<br>940 | 2019 |
| 37 | Marei M. El-ajaily,<br>Ashish K. Sarangi, Ranjan<br>K. Mohapatra, Saffa S.<br>Hassan, Rehab N.<br>Eldaghare, Pranab K.<br>Mohapatra, Mukesh K.<br>Raval, <b>Debadutta Das</b> ,<br>Ahmed Mahal, Amira<br>Cipurkovic, Taghreed H.<br>Al-Noor. | Transition Metal<br>Complexes of (E)-2((2-<br>hydroxybenzylidene)<br>amino-3-<br>mercaptopropanoic acid:<br>XRD, Anticancer,<br>Molecular modeling and<br>Molecular Docking<br>Studies | Chemistry Select                                             | 4  | 9999-10005        | 2019 |

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|----|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----|-----------|------|
| 38 | Anupama Routray,<br>Pradipta Kumar Senapati,<br>Mamata Padhy,<br><b>Debadutta Das*</b> .                                                        | Effect of mixture of<br>natural and synthetic<br>surfactant and particle size<br>distribution for stabilized<br>high-concentrated coal<br>water slurry                                                    | International Journal of Coal<br>Preparation and Utilization,<br>International journal of coal<br>preparation and utilization | 42 | 238-253   | 2019 |
| 39 | Pankaj Kumar Parhi,<br>Saroj Sekhar Behera,<br>Ranjan Kumar<br>Mohapatra, Tapas Ranjan<br>Sahoo, <b>Debadutta Das</b> ,<br>Pramila Kumari Misra | Separation and recovery of<br>Sc(III) from Mg–Sc alloy<br>scrap solution through<br>hollow fiber supported<br>liquid membrane (HFLM)<br>process supported by Bi-<br>functional ionic liquid as<br>carrier | Separation Science and<br>Technology                                                                                          | 54 | 1478-1488 | 2019 |
| 40 | Anupama Routray,<br><b>Debadutta Das*</b> , Pankaj<br>Kumar Parhi& Mamata<br>Kumari Padhy.                                                      | Characterization,<br>stabilization, and study of<br>mechanism of coal-water<br>slurry using<br>SapindousMukorossi as an<br>additive                                                                       | Energy Sources, Part A:<br>Recovery, Utilization, and<br>Environmental Effects                                                | 40 | 2502-2509 | 2018 |

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|----|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------|------|
| 41 | <b>Debadutta Das</b> , Uma Dash, Jibardhan Meher, Pramila K. Misra.                  | Improving stability of concentrated coal–water slurry using mixture of a natural and synthetic surfactants                   | Fuel Processing Technology                                                                                                               | 113 | 41-51     | 2013 |
| 42 | <b>Debadutta Das</b> , Uma Dash, Amalendu Nayak, Pramila K. Misra,                   | Surface engineering of low rank Indian coals by starch-based Additives for the formulation of concentrated coal-water slurry | Energy and Fuels                                                                                                                         | 24  | 1260–1268 | 2010 |
| 43 | <b>Debadutta Das</b> , Sagarika Panigrahi, Pradipta K. Senapati and Pramila K. Misra | Effect of organized assemblies. Part-5                                                                                       | Study on the Rheology and stabilization of a concentrated coal-water slurry using saponin of the Acacia Concinna plant, Energy and Fuels | 23  | 3217–3226 | 2009 |
| 44 | Pradipta K. Senapati, <b>Debadutta Das</b> , Amalendu Nayak & Pramila K. Mishra.     | Studies on Preparation of Coal Water Slurry Using a Natural Additive                                                         | Energy Sources, Part A: Recovery, Utilization, and Environmental Effects                                                                 | 30  | 1788-1796 | 2008 |
| 45 | <b>Debadutta Das</b> , Sagarika Panigrahi, Amalendu Nayak and Pramila K. Misra       | Formulation of highly concentrated coal-water slurry using a natural surfactant, Energy and Fuels                            | Effect of organized assemblies. Part-4                                                                                                   | 22  | 1865–1872 | 2008 |

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|----|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------|------|---------|------|
| 46 | <b>Debadutta Das,</b><br>Amalendu Nayak,<br>Bhagabata Nanda and<br>Nalini B. Das | Microwave-assisted<br>transformation of $\alpha$ , $\beta$<br>unsaturated nitroalkene<br>into carbonyl compounds | Journal of chemical research | 2006 | 481-482 | 2006 |
|----|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------|------|---------|------|

#### BooksChaptersPublished(Total9)

| S.No | Title                                                                                  | Author's Name                                                                                                                                   | Publisher | Year of Publication |
|------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------|
| 1    | Characterization and Utilization of Coal Ash for Synthesis of Building Materials.      | ShaswatKumarDas,SubhabrataMishra,<br><b>DebaduttaDas</b> ,SyedMohammedMustakim                                                                  | Springer  | 2021                |
| 2    | Studies on Extraction of Heavy Metal (s) from Fly Ash through HydroprocessingApproach. | Saroj Sekhar Behera, Surendra Hansdah,<br><b>Debadutta Das</b> , Pankaj Kumar Parhi, Rajesh Kumar Jyothi                                        | Springer  | 2021                |
| 3    | Generation, Transportation and Utilization of Indian Coal Ash                          | Ranjan KumarMohapatra, Pradeep KumarDas, Dulal C. Kabiraz, <b>Debadutta Das</b> ,Ajit Behera, Md. Kudrat-E-Zahan                                | Springer  | 2021                |
| 4    | Prospective Utilization of Coal FlyAsh for MakingAdvanced Materials.                   | Aritra Kumar Dan, Dipanjan Bhattacharjee, Saikat Ghosh, Saroj Sekhar Behera, Birendra Kumar Bindhani, <b>Debadutta Das</b> , Pankaj Kumar Parhi | Springer  | 2021                |

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|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------|
| 5 | Investigation on Extraction and Recovery of Rare Earth Elements from Secondary Solid Wastes.                                                                    | SarojSekharBehera,RanjanKumarMohapatra, <b>Debadutta Das</b> ,PankajKumarParhi                          | Springer                                                                                  | 2020 |
| 6 | Fundamental Principle and Practices of Solvent Extraction (SX) and Supported Liquid Membrane (SLM) Process for Extraction and Separation of Rare Earth Metal(s) | Pankaj Kumar Parhi, Saroj Sekhar Behera, Dindayal Mandal, <b>Debadutta Das</b> , Ranjan Kumar Mohapatra | Springer                                                                                  | 2020 |
| 7 | Processing Technology for Extraction of Scandium(III) from Secondary Sources–A Comprehensive Approach, Abhilash, , &Akcil, A. (Eds.).                           | Pankaj Kumar Parhi, Saroj Sekhar Behera, <b>Debadutta Das</b> , Pramila Kumari Misra,                   | Critical and Rare Earth Elements: Recovery from Secondary Resources (1st ed.). CRC Press. | 2019 |

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| 8 | Processing Technology For Treatment of Primary and Secondary Bearing Base Metal: Comprehensive Hydro metallurgical Approach Of Recovery Of Copper And Zinc In “Mineral processing ,Method, Application and Technology | Pankaj Kumar Parhi, Saroj Sekhar Behera, Ranjan Kumar Mohapatra and <b>Debadutta Das</b> | Nova Science Publisher | 2018 |
| 9 | Fundamental and Applied Aspects of Developing Green Additives for the Stabilization of Coal-Water Slurry, In “Innovative Approach of Integrated Resource Management”                                                  | Pramila Kumari Misra and <b>Debadutta Das</b>                                            | New Delhi Publisher,   | 2018 |

### Books Published:

1. Chemical Modification of Solid Surfaces by the Use of Additive, published on October 2021 :1st Edition: Publisher: Bentham Science Publishers Pte. Ltd. Singapore. ISBN: 978-981-5036-81-7

**Patents:**

| S.No | Patent Title                                                                                                                                                                                                                                      | Name of Applicant(s)                                                                                                              | Patent No.      | Award Date | Agency/ Country | Status  |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|-----------------|---------|
| 1    | A system for preparing fly ash water slurry(FAWS) using bio-additive solution from Dioscorea Hispida                                                                                                                                              | Umakanta Behera, Swetashree Pattnaik, Barada Prasana Das, Niva Nayak ,Tapan Panda , <b>Debadutta Das</b> , Pramila Kumari Misra   | 2024/02003      | 11.03.2024 | South Africa    | Granted |
| 2    | System zur Gewinnung eines Biotensids aus der Pflanze Sapindus laurifolia vahl. für die Anwendung zur Entschleimung von Rohseide”( Asystem for obtaining a biosurfactant from sapindus laurifolia vahl. Plant for raw silk degumming application) | <b>Debadutta Das</b> , Aritra Kumar Dan, Aamna Bari, Swetashree Pattnaik, Jharana Sahoo, Bijnyan Ranjan Das, Pramila Kumari Misra | 20 2023 106 991 | 11.01.2024 | Germany         | Granted |

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| 3 | System zur Isolierung eines Biotensids aus den Früchten der Pflanze <i>Acacia concinna</i> (willd.) dc. für den Transport von Eisenerz-Schlamm”( A system for isolating a biosurfactant from fruits of <i>Acacia concinna</i> (Willd.) Dc. plant for iron ore-slurry transportation) | Umakanta Behera, Manadakini Behari, Swetashree Pattnaik, Anupama Routray, <b>Debadutta Das</b> , Pramila Kumari Misra, | 20 2023 106 107 | 19.01.2024 | Germany | Granted   |
| 4 | Degumming of Muga silk by natural surfactant                                                                                                                                                                                                                                         | <b>D. Das</b> , P. K. Parhi, R. K. Mohapatra, S. N. Das, S. K. Mahanta and S. R. Barik                                 | 201931049356    | 04.06.2021 | India   | published |
| 5 | Reduction of viscosity of crude oil-water emulsion using a natural dispersant                                                                                                                                                                                                        | Pramila K. Misra, <b>Debadutta Das</b> , Bijnyan Ranjan Das Swetashree Pattnaik                                        | 353623          | 14.12.2020 | India   | Granted   |
| 6 | A stabilised coal – water slurry with an additive from <i>Acacia auriculiformis</i> and a process there for                                                                                                                                                                          | Pramila kumari Misra, <b>Debadutta Das</b> , Uma Dash Jibardhan Meher                                                  | 355631          | 11.01.2021 | India   | Granted   |

|   |                                                                    |                                                                             |                |            |                                                           |           |
|---|--------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------|------------|-----------------------------------------------------------|-----------|
| 7 | A natural additive for the stabilization of the coal-water slurry: | Pramila kumari Misra,<br><b>Debadutta Das</b> , Uma<br>Dash Jibardhan Meher | WO 2016/178241 | 10.11.2016 | World<br>Intellectual<br>Property<br>Organizatio<br>n PCT | Published |
|---|--------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------|------------|-----------------------------------------------------------|-----------|

#### Invited/Special Lectures/Resource Persons or Presentations at Conferences/ Workshops:

1. Attended the Bangladesh Chemical Society conference, BCSC-2019, as Invited Speaker, which is organized at Rajshahi University, Bangladesh, during 9th to 10th November, 2019.
2. National Conference on Recent Advances in Material Science and Technology (RAMSAT-2019) jointly organised by Government of college of Engineering, Keonjhar and Institute of Chemical Technology, Mumbai, India. March, 30-31, 2019.
3. National seminar on coal and mineral processing technology (CMPT-2019) jointly organised by Department of mineral engineering, Government of college of Engineering, and Indian Institute of Minerals Engineers, Keonjhar, Odisha, India. January, 12-13, 2019.
4. 27th Regional conference of Odisha Chemical Society, Organized by. Dept. of Chemistry, Paradeep College, Paradeep, Odisha, India. 23rd Septmber, 2018.
5. International Conference on Industrial Impact on Environment and Sustainable Development organised by Government of college of Engineering, Keonjhar and Odisha, India. April, 15-31, 2018.
6. International Conference of Recent Advances in Material Chemistry, organized by P.G Department of Chemistry, Utkal University, Vani Bhubaneswar, Odisha, India. Feb. 24-26, 2017.
7. 30th annual conference of Odisha Chemical Society, Organized by. Dept of Chemistry, KIIT University, Bhubaneswar, Odisha, India. Dec. 24-25, 2016.
8. UGC Sponsored National Seminar On Environmental Impact Assement And Human Health, Perspective, Approach And Future Direction During 28-29 Septmber, 2016 organized by Mohan Subudhi College, Badamba, Cuttack, Odisha, India.
9. International conference on innovative application of chemistry in pharmacology and technology (IACPT) during 6th -8th Feb, 2015 organized by department of chemistry, Berhampur university, Odisha, India.
10. 28th annual conference of Odisha chemical society Dec 13-14, 2014. Organized by U.N College, Adaspur, Cuttack, Odisha, India. 27th

annual conference of Orissa chemical society and national conference on “chemistry in the 21st century” 14-15 december, 2013 organized by MEMT, Balasore, Odisha, India.

11. International seminars on Minerals Processing Technology MPT- 2013. Institution of Minerals and Material Technology, CSIR, Bhubaneswar, India. Dec. 10-12, 2013.
12. Recent Trends in Chemical Science, organized by School of Chemistry, Sambalpur University, Jyoti Vihar, Burla, Odisha, India. Feb. 16-17, 2013.
13. 26th annual conference of Odisha chemical society and national seminar on Recent Trends in chemical science and technology. Nov 15-16, 2012. Organized by Ravenshaw University, Cuttack, Odisha.
14. India 26th annual conference of Odisha chemical society and national seminar on Recent Trends in chemical science and technology. Feb 8-9, 2012. Organized by Ravenshaw University, Cuttack, Odisha, India.
15. National seminar on E-waste management. Department of chemistry, Aul college, Aul, Kendrapara, Odisha, India. October, 2012.
16. Recent Trends in Chemical Science, organized by School of Chemistry, Sambalpur University, Jyoti Vihar, Burla, Odisha, India. Feb. 19-21, 2011.
17. International seminars on Minerals Processing Technology MPT- 2009. Institution of Minerals and Material Technology, CSIR, Bhubaneswar, India. Oct. 28-30, 2009.
18. 23rd annual conference of Odisha chemical society and national seminar on Recent Trends in chemical science and technology. Dec. 19-20, 2009. Organized by National Institute of Technology, Rourkela, Odisha, India.
19. 19th annual conference of Odisha chemical society, Organized by. School of Chemistry, Sambalpur University, Jyoti Vihar, Burla, Odisha, India. Dec. 23-24, 2005.

#### Awards and Distinctions:

- Qualified Joint CSIR-UGC NET (Lectureship), June 2002
- Qualified GATE with 91.69 percentile (All India Rank 239), 2003

#### Association with Professional Bodies:

- Odisha chemical society