List of Publications

Included in thesis:

1. **R. Baishya**, D. Sarmah, D. Mahanta, S. K. Das. "Aqueous electrolyte-mediated reversible K^+ ion insertion into graphite. ***Physical Chemistry Chemical Physics,*** vol. 25, no. 36, 24298–24302, 2023. https://doi.org/10.1039/D3CP02162A
2. **R. Baishya** and S. K. Das, "Enhanced K^+ ion storage in bismuth niobate ($Bi_5Nb_3O_{15}$) for energy storage and a study on interface." ***ChemNanoMat, 2025*** (Revision submitted)**.**
3. **R. Baishya**, H. Phukon, D. Kalita, S. R. Barman, and S. K. Das, "Investigation on Al^{3+} ion storage in Bi_2MoO_6 and Bi_2WO_6 for rechargeable aqueous aluminum-ion battery" ***Journal of Energy Storage,*** vol. 94, 112 541, 2024. https://doi.org/10.1016/j.est. 2024.112541.
4. **R. Baishya** and S. K. Das, "High-rate performance of H_xMoO_3 for aqueous aluminium-ion battery, ***Chemical Communications,*** vol. 61, no. 44, 8031–8034, 2025**.** https://doi.org/10.1039/D5CC00784D.

Not included in thesis:

1. **R. Baishya**, An electrochemical study on manganese tungstate ($MnWO_4$) for energy storage. **Published in Journal of Physics: Conference series**, Volume=2957, DOI-10.1088/1742-6596/2957/1/012010, 2025. 10.1088/1742-6596/2957/1/012010
2. K. Roy, **R. Baishya**, and S. K. Das, Ammonium ion storage in hydrated vanadium oxide for energy storage. ***Journal of Alloys and Compounds,*** vol. 1010, 177 915, 2025. https://doi.org/10.1016/j.jallcom.2024.177915

Book Chapters

1. **R. Baishya**, *2d materials for aluminium-ion batteries*, published in Emerging Trends in Basic and Applied Sciences, ISBN: 978-93-5860-107-7, 2024.
2. **R. Baishya**, *Swift heavy ion irradiated materials for electrochemical energy storage*, published in Eco Revolution: Exploring Sustainable Solutions, ISBN: 978-81-940498-9-0, 2024.

3. **R. Baishya**, *Molybdenum Disulfide: An emerging Material for Energy Storag*e, Published in Frontiers in natural Sciences, ISBN: 978-81-965954-7-0, 2025.

International and National Conferences Attended:

1. SPARK 2023 (Symposium on Physics: Advances in Research and Knowledge). Paper title: Promising materials for beyond lithium ion based electrochemical energy storage devices: Exploring the next energy frontier. Organized by North Lakhimpur College, Assam, India
2. International conference on recent trends in Material Science and devices. Paper title: Transition metal-based materials for aluminum batteries. Organized by Research Plateau Publishers, G.A.V. Degree College, Pataudi, Jhajjar, Haryana, India.
3. International Conference on Material Science 2024 (ICMS- 2024). Paper title: Charging ahead with potassium: advancing sustainability with aqueous potassium ion batteries. Organized by Tripura University.
4. Frontiers in Material Sciences: Challenges and opportunities. (SERB sponsored national workshop). Organized by Department of Chemical Sciences, Tezpur University.
5. The Academic Research Connect and Immersion (ARCI) Program. Paper title: Advancing Aqueous Aluminum-Ion Batteries with Bismuth Based Transition Metal Oxides. Organized by NECTAR and Jio Institute, Mumbai.
6. Frontiers in pure and applied physics (ICFPAP-2024). Paper title: Unleashing the potential of aluminum and potassium batteries: innovations, challenges, and future directions. organized by USTM University.
7. XIV Biennial National Conference of Physics Academy of North East, 12-14 December, 2024