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### **List of Patent/Publications**

- 1) High-performance aqueous asymmetric supercapacitor device using ABO<sub>2</sub>-type pseudocapacitor electrodes. **Abhay Narayan Singh**, Chandana Rath, Preetam Singh, Patent file no. 202311015019 dated March 06, 2023 (Indian Patent).
- 2) **Abhay Narayan Singh**, Rakesh Mondal, Chandana Rath, Preetam Singh, Electrochemical Performance of Delafossite, AgFeO<sub>2</sub>: A Pseudo-capacitive Electrode in Neutral Aqueous Na<sub>2</sub>SO<sub>4</sub> Electrolyte., 2021 J. Electrochem. Soc. 168 120512.
- 3) **Abhay Narayan Singh**, Krishna Gopal Nigam, Rakesh Mondal, Vishal Kushwaha, Asha Gupta, Chandana Rath, Preetam Singh, Effect of strontium doping on the electrochemical pseudocapacitance of Y<sub>1-x</sub>Sr<sub>x</sub>MnO<sub>3-δ</sub> perovskites, RSC, Phys. Chem. Chem. Phys., 2023 24, 11066-11078.
- 4) **Abhay Narayan Singh**, Akhilesh Kumar Yadav, Asha Gupta, Chandana Rath, Preetam Singh, Fabrication and Electrochemical Performance of Pseudocapacitive ABO<sub>2</sub>-type AgFeO<sub>2</sub>@C||K<sub>0.4</sub>MnO<sub>2</sub>. xH<sub>2</sub>O Battery-type Asymmetric supercapacitor cell for Large-scale Energy Storage Applications Journal of Energy Storage 74 (2023) 109276.
- 5) **Abhay Narayan Singh**, Chandana Rath, Preetam Singh, Stabilization of metastable LiMnO<sub>2</sub> (Mn<sup>3+</sup> ions) by Li-rich Li<sub>2</sub>MnO<sub>3</sub> (Mn<sup>4+</sup> ions): A highly efficient bifunctional OER/ORR catalyst in alkaline media..... Submitted in ACS Appl. Energy Mater.
- 6) Asha Gupta, Vishal Kushwaha, Rakesh Mondal, **Abhay Narayan Singh**, Rajiv Prakash, KD Mandal, Preetam Singh, SrFeO<sub>3-δ</sub>: a novel Fe<sup>4+</sup> ↔ Fe<sup>2+</sup> redox-mediated pseudocapacitive electrode in aqueous electrolyte, RSC, Phys. Chem. Chem. Phys., 2022, 24, 11066-11078.
- 7) Vaishali Soni, **Abhay Narayan Singh**, Preetam Singh, Asha Gupta, Photocatalytic dye-degradation activity of nano-crystalline Ti<sub>1-x</sub>M<sub>x</sub>O<sub>2-δ</sub> (M = Ag, Pd, Fe, Ni and x = 0, 0.01) for water pollution abatement, RSC Adv., 2022, 12, 18794.



- 8) Vaishali Soni, Rakesh Mondal, **Abhay Narayan Singh**, Preetam Singh, Asha Gupta, Dumbbell Defect Containing Chromium-Rich Lithium-Vacant layered  $\text{Li}_y\text{Cr}_{1-x}\text{Fe}_x\text{O}_2$  ( $y \leq 1, 0 \leq x \leq 0.2$ ): An Unexplored and Highly Efficient Electrocatalyst for the Oxygen Evolution Reaction, ACS Appl. Energy Mater., 2023,
- 9) Priyanka Maurya, Ved Vyas, **Abhay Narayan Singh**, Arindam Indra, Iron (III) ion-assisted transformation of ZIF-67 to self-supported  $\text{Fe}_x\text{Co}$ -layered double hydroxide for improved water oxidation, Chem. Commun., 2023,

### **International/National Conferences:**

- 1) 3<sup>rd</sup> National Conference on Materials for Energy Conversion and Storage (MECS 2018) by IIT (BHU) Varanasi, India during 18- 20, October 2018
- 2) International Conference on Beyond Fossil Fuels: The Future of Alternative Energy Technologies by IIT (BHU) Varanasi, India during 23- 25 July 2022 (Awarded as a Best poster presentation)