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PUBLICATIONS:

1. Akhter, S. Sk.; Srivastava, D.; Mishra, A.; Patra, N.; Kumar, P.; **Padhi, S. K.***, Cover Feature: Physicochemical Analysis of Cu(II)-Driven Electrochemical CO_2 Reduction and its Competition with Proton Reduction. *Chem. Eur. J.* **2024**, *30*, e202487004.
2. Akhter, S. Sk.; Srivastava, D.; Mishra, A.; Patra, N.; Kumar, P.; **Padhi, S. K.***, Physicochemical Analysis of Cu(II)-Driven Electrochemical CO_2 Reduction and its Competition with Proton Reduction. *Chem. Eur. J.* **2024**, *30*, e202403321.
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4. Raj. M., and **Padhi, S. K.*** Decoding the Catalytic Potential of Dinuclear 1st-Row Transition Metal Complexes for Proton Reduction and Water Oxidation, *Chem. Rec.* **2025**, 25, e202400170. **(Invited Article for the special issue on "Catalytic Transformation of Small Molecules")**
5. Mishra, A.; Srivastav, D; Raj, D.; Patra, N. and **Padhi, S. K.***, Formate Dehydrogenase Activity by a Cu(II)-based Molecular Catalyst and Deciphering the Mechanism by DFT studies, *Dalton. Trans.*, **2024**, *53*, 1209-1220.
6. Maity, N.; Mishra, A.; Mishra, A.; Barman, S.; **Padhi, S. K.**, Panda, B. B., Jaseer, E. A.; and Javid, M., Tuning Pd to Ag ratio to enhance synergistic activity of fly ash supported PdxAgy bimetallic nanoparticles, *ACS Omega.*, **2024**, *9*, 1020-1028.
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8. Raj, M.; Makhal, K; Mishra, A.; Mallik, B. S. and **Padhi, S. K.*** Ligand-mediated Hydrogen Evolution by Co(II) Complexes and Assessment of the Mechanism by Computational Studies, ***Inorg. Chem., 2023,*** *62, 10993-11008.*
9. Vatsa, A.; Mishra, A. and Padhi, S. K.* Monitoring of Catalytic Dehydrogenation of Formic acid by a Ruthenium (II) complex through Manometry, **Inorg. Chem. Commun.**, **2022**, *144*, 109898.
10. Vatsa, A. and **Padhi, S. K.*** Formic Acid Dehydrogenation by [Ru(η^6-benzene)(L)Cl] catalysts: L = 2-methylquinolin-8-olate and quinolin-8-olate, ***New J. Chem., 2022,*** *46, 15723 - 15731.*
11. Raj, M. and **Padhi, S. K.***, Water Oxidation by a Neoteric Dinuclear Mn(II) Electrocatalyst in Aqueous Medium, ***Eur. J. Inorg. Chem., 2022,*** *2022(21),* e202200238.
12. Akhter, S. Sk.; and **Padhi, S. K.***, Electro-catalytic CO_2 reduction to Syngas and HCOOH by Homogeneous $FcNAP_2$, ***Eur. J. Inorg. Chem., 2022,*** *2022(20),* e202200206.

13. Raj, M. and **Padhi, S. K.***, Electrocatalytic proton reduction by dinuclear cobalt complexes in nonaqueous electrolyte, ***New J. Chem***., **2022**, *46*, 6027- 6038.
14. Raj, D. and **Padhi, S. K.*** The sporadic μ-pyridine bridge in transition metal complexes: A real bond or an interaction?, ***Coord. Chem. Rev.*** , **2022**, 450, 214238.
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16. Vatsa, A. and **Padhi, S. K.*** Dehydrogenation of Formic Acid by a Ru^{II} Half Sandwich Catalyst , ***ChemistrySelect*** **2021,** 6 (35), 9447-9452**.**
17. Vatsa, A. and **Padhi, S. K.*** Catalytic Water Oxidation by a Ru^{II} Half Sandwich Complex, ***Eur. J. Inorg. Chem.*, 2021,** 2021(34), 3499-3505. (**Highlighted in ChemViews Magazine**)
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20. **Padhi, S. K.*;** Ahmad, E.; Rai, S.; Panda, B. Kinetics and Mechanistic study of Electrocatalytic Hydrogen Evolution by $[Co(Fc\text{-}tpy)_2]^{2+}$, ***Polyhedron***, **2020**, *187*, 114677. (**Selected for Cover page**)
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22. **Padhi, S. K.***, Ahmad, E.; Rai, S., Kinetics and the Potential Well in Electrochemical Hydrogen Evolution by $[Co(4\text{-}tolyl\text{-}tpy)_2]^{2+}$, ***Electrochim. Acta***, **2020**, *340*, 136000.
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27. Rai, S.; Majee, K.; Raj, M.; Pahari, A.; Patel, J.; and **Padhi, S. K.*** Electrocatalytic Proton and Water Reduction by a Co(III) Polypyridyl Complex , ***Polyhedron***, **2019**, *159*, 127-134. (**Selected for Cover page**)

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53. **Padhi, S. K.**; Manivannan, V. $Cu(NO_3)_2.3H_2O$-mediated synthesis of 4'-(2-pyridyl)-2,2':6',2''-terpyridine (L2) from N-(2-pyridylmethyl)pyridine-2-methylketimine (L1). A C-

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PATENT:

1. Natarajan, T.; and **Padhi, S. K.***, A catalyst for green hydrogen generation, a process for the Preparation thereof and the use thereof for green hydrogen generation from ammonia. Indian Patent Application no. 202431070872, Filed on 19th Sept. 2024. (**Status: Published**)
2. Mishra, A.; and **Padhi, S. K.***, A process for the preparation of methanol by the hydrogenation of bicarbonate and carbon dioxide (CO_2) captured from air. Indian Patent Application no. 202431048509, Filed on 25th June 2024. (**Status: Published**)
3. Mishra, A.; and **Padhi, S. K.***, A process for the hydrogenation of carbon dioxide (CO_2) to methanol.Indian Patent Application no. 202431048508, Filed on 25th June 2024.(**Status: Published**)
4. Tanaka, K.; **Padhi, S. K**. Ruthenium complexes, and their use for preparation of reduced compounds of organic compounds.Jpn. Kokai Tokkyo Koho (2011), JP 2011246412 A, 08 Dec 2011. (**Status: Granted**)