Dr. Tapas Kumar Mandal
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Employment & Research Experience

Associate Professor (2019 onwards), Dept. of Chemistry, IIT Roorkee, INDIA
Assistant Professor (2011-2019), Dept. of Chemistry, IIT Roorkee, INDIA
Assistant Professor (2010-2011), Dept. of Chemical Sciences, Sikkim University, Sikkim, INDIA
Post-Doctoral Research Associate (2008-2010), University of Glasgow, Scotland, UK
Post-Doctoral Associate (2006-2008), Rutgers University, New Jersey, USA
Post-Doctoral Researcher (2005-2006), University of New Orleans, Louisiana, USA
Ph. D. (2005), Indian Institute of Science, Bangalore, INDIA

Research Interests

Solid State and Materials Chemistry: Photo- and Electrocatalysis, Energy Storage, Magnetic and Catalytic Materials; Nanomaterials; Hydrogen Energy.

List of Publications

From IIT Roorkee (2011 onwards)

82. Sujan Sen and **Tapas Kumar Mandal***, Recent Advances in the Understanding of Lattice Oxygen Participation in Oxygen Evolution Reaction Involving Perovskite Oxide Electrocatalysts, ***ChemCatChem***, DOI: 10.1002/cctc.202500535 (**2025**).

81. Sujan Sen, Anil Kumar, Sounak Roy and **Tapas Kumar Mandal***, Inducing Bifunctionality by Mechanical Blending of Oxygen Evolution Reaction and Oxygen Reduction Reaction Active 3D Perovskite Electrocatalysts for Zinc-Air Batteries, ***ChemPlusChem***, DOI: 10.1002/cplu.202500171 (**2025**).

80. Parul Yadav and **Tapas Kumar Mandal*,** The mixed–halogen layer approach of band engineering and anisotropic charge migration in X1X2 Sillén nanosheets boost cocatalyst-free photocatalytic hydrogen evolution, ***J. Mater. Chem. A,*** *13*, xxxxx (**2025**).

79. Sujan Sen, Anil Kumar, Ashwini Kumar Sharma and **Tapas Kumar Mandal*,** Unraveling e_g-band modulation as an alternative strategy to enhance lattice oxygen participation and oxygen electrocatalytic bifunctionality via switching the active site, ***J. Mater. Chem. A,*** *13*, xxxxx (**2025**).

78. P. C. Meenu, N. P. S. Kothoori, P. Dahiya, **T. K. Mandal**, S. Roy*, Engineering Lattice Strain in Co-Doped $NiMoO_4$ for boosting Methanol Oxidation Reaction, ***Chem. Asian J.,*** 20 (8), e202401520 (**2025**).

77. Sujan Sen and **Tapas Kumar Mandal*,** Ultrahigh peak power density of rechargeable Zn-Air batteries using quadruple perovskite as air-cathode electrocatalyst, ***J. Mater. Chem. A,*** *13*, 11666 (**2025**).

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75. Sujan Sen and **Tapas Kumar Mandal***, Harnessing lattice oxygens in a high-entropy perovskite oxide for enhanced oxygen evolution reaction, ***Sustain Energy Fuels,*** *9*, 129 (**2025**).

74. Radhamadhab Das, Sujan Sen, Shreyashi Chowdhury, Sudipa Bhattacharya, Sudisha Mondal, **Tapas Kumar Mandal**, Arup Gayen, Vasundhara Mutta, Md Motin Seikh*, Dominating Role of Carrier Localization over Griffiths Inhomogeneity and Phase Separation on Magnetoresistance in High Entropy Manganites, ***J. Phys. Chem. C,*** *129 (1)*, 940 (**2025**).

73. Sudip Dandapat, Phanikumar Pentyala, L. R. Pravallika Ganamani, Parthasarathi Bera, Sujan Sen, Aathira Bhaskaran, Sounak Roy, Pravin R. Likhar, **Tapas Kumar Mandal**, Parag A. Deshpande, Tinku Baidya*, Exploring the Intrinsic Catalytic Reactivity of Various Transition-Metal Ions Substituted in CeO_2 for Cyclohexane Oxidation: A Correlation between Catalytic Activities and Electronic States of the Substituent Ions, ***J. Phys. Chem. C,*** *129 (1)*, 415 (**2025**).

72. Lalit Kumar, Sujan Sen and **Tapas Kumar Mandal***, Smaller rare-earth cation and mixed valent Mn incorporation as a dual strategy to enhance ferrimagnetic ordering temperatures in A-site ordered quadruple perovskites, $LnCu_3Mn_{1+x}Ti_{3-x}O_{12}$ (Ln = La, Nd; x = 0, 0.3), ***Dalton Trans.,*** *53*, 16661 (**2024**).

71. Shubham Kumar, Jaideep Malik, Anil Kumar, Parul Yadav and **Tapas Kumar Mandal***, Synthetically Enforced Cation Migration in Sillen-Aurivillius Hybrid Perovskites Boosts Photocatalytic Hydrogen Evolution, ***ACS Appl. Energy Mater.,*** *7*, 8054 (**2024**).

70. Preeti Dahiya and **Tapas Kumar Mandal***, Enhanced photocatalytic hydrogen evolution from cation modified single perovskite niobates in the absence of noble metal cocatalysts, ***New J. Chem.,*** *48*, 16269 (**2024**).

69. Lalit Kumar, Sujan Sen and **Tapas Kumar Mandal***, Ambient pressure synthesis and structure and magnetic properties of a new A- and B-site ordered multinary quadruple perovskite, ***Dalton Trans.,*** *53*, 11060 (**2024**).

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67. Nishant Gautam, Megha Goyal, Bharat Verma, Hari Raj, Anjan Sil and **Tapas Kumar Mandal***, Lithium-rich NCM-based ordered rock salt oxy-fluoride as high voltage cathode material for LIBs, ***J. Electroanal. Chem.,*** *961*, 118250 (**2024**).

66. Preeti Dahiya and **Tapas Kumar Mandal***, Simple to Quadruple Perovskite Transformation by Coordination Switching upon Solid-State Ion Exchange of $NaNbO_3$, ***Inorg. Chem.*** (*Communication*), *63*, 6111 (**2024**).

65. Sujan Sen, Megha Goyal, Lalit Kumar and **Tapas Kumar Mandal***, Excellent Electrocatalytic Oxygen Evolution Reaction by Non-Noble Metal-Based 3D Perovskite Oxides $Ba_{3-x}Sr_x$ $MTiSbO_9$ (x = 1, 1.5 for M= Co and x = 2 for Mn/Co), ***ACS Appl. Energy Mater.,*** *7,* 1495 (**2024**).

64. Preeti Dahiya, Megha Goyal, Shubham Kumar and **Tapas Kumar Mandal***, Unleashing the Potential of Coupled Substituted 3D Niobate Perovskite Oxides in Cocatalyst-free Photocatalytic Hydrogen Evolution, ***ACS Appl. Energy Mater.,*** *7,* 1192 (**2024**).

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62. Megha Goyal, Preeti Dahiya, Shubham Kumar and **Tapas Kumar Mandal***, Different metal precursor based rapid synthesis of α-$Ni(OH)_2$-type Ni-Co-Mn layered double hydroxides and its use as electrodes for high performance energy storage devices, ***J. Energy Storage,*** *72,* 108622 (**2023**).

61. Shubham Kumar, Jaideep Malik, Megha Goyal, Preeti Dahiya and **Tapas Kumar Mandal***, Aurivillius Perovskite-Rhodamine B as Generic Type-II Heterojunction for Collective Photocatalytic Degradation of Multiple POPs, ***ACS Appl. Eng. Mater.,*** *1,* 2994 (**2023**).

60. Radhamadhab Das, Sudipa Bhattacharya, Shreyashi Chowdhury, Sujan Sen, **Tapas Kumar Mandal**, Trilochan Bhunia, Arup Gayen, M. Vasundhara and Md Motin Seikh*, High entropy effect on double exchange interaction and charge ordering in half-doped $Nd_{0.5}Sr_{0.5}MnO_3$ manganite, ***J. Alloys Compd.,*** *951,* 169950 (**2023**).

59. N. Kumar, T. Rom, M. Kumar, Tharamani C. N., E. Lee, H. Chul Ham, S. H. Choi, S. Rayaprol, V. Siruguri, **T. K. Mandal**, B. J. Kennedy and A. K. Paul*, Unraveling the Effect of A-Site Sr-Doping in Double Perovskites $Ca_{2-x}Sr_xScRuO_6$ (x = 0 and 1): Structural Interpretation and Mechanistic Investigations of Trifunctional Electrocatalytic Effects, ***ACS Appl. Energy Mater.,*** *5,* 11632 (**2022**).

58. P. K. Yadav, P. Dahiya, **T. K. Mandal** and T. Das*, The bulk and supported perovskite-type catalysts for the CO_2 reforming of methane: The effect of ceria and magnesia, ***J. Taiwan Inst. Chem. Eng.*** *140*, 104509 (**2022**).

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53. Kalyan Ghorai, Monotosh Bhattacharjee, Debasish Mandal, Akbar Hossain, Trilochan Bhunia, Mrinmay Das, Partha Pratim Ray, Bibhutibhushan Show, Parthasarathi Bera, **Tapas Kumar Mandal**, Motin Seikh* and Arup Gayen*, Facile synthesis of $CuCr_2O_4$/BiOBr composite and its photocatalytic activity towards RhB and tetracycline hydrochloride degradation under household visible LED light irradiation, ***J. Alloys Compd.***, *867*, 157947 (**2021**).

52. R. V. Lakshmi*, Parthasarathi Bera*, Kamalesh Pal, Vijay Alwera, Arup Gayen, **Tapas Kumar Mandal** and S. T. Aruna, Effect of cerium oxide nanostructures on CO oxidation, ***J. Nanosci. Nanotechnol.***, *21*, 1641 (**2021**).

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50. Kumari Naveen, Nikhil Kumar, Sonia Rani, **Tapas Kumar Mandal**, Anurag Gaur, P. D. Babu, Vasudeva Siruguri, Pradip K. Maji, Sudipta Kanungo and Avijit Kumar Paul*, Investigation of multiferroic behaviour at room temperature in Bi-induced orthoferrite: combined experimental and first principles studies, ***Bull. Mater. Sci.***, *43*, 196, (**2020**).

49. Vijay Alwera, Seema Singh, Vimal C. Srivastava* and **Tapas K. Mandal***, Manganese Trioxide with Various Morphologies: Applications in Catalytic Dye Degradation, ***ChemistrySelect***, 5, 4674 (**2020**).

48. Kamalesh Pal, Arka Dey, Rajkumar Jana, Partha P. Ray, Parthasarathi Bera, Lalit Kumar, **Tapas Kumar Mandal**, Paritosh Mohanty, Md. Motin Seikh* and Arup Gayen*, Citrate combustion synthesized Al-doped $CaCu_3Ti_4O_{12}$ quadruple perovskite: Synthesis, characterization and multifunctional properties, ***Phys. Chem. Chem. Phys.***, *22*, 3499 (**2020**).

47. Divya Gupta, Rohit Chauhan, Navneet Kumar, Vikash Singh, Vimal Chandra Srivastava*, Paritosh Mohanty and **Tapas Kumar Mandal**, Enhancing photocatalytic degradation of quinoline by ZnO:TiO_2 mixed oxide: optimization of operating parameters and mechanistic study, ***J. Environ.***

Mgmt., *258*, 110032 (**2020**).

46. Sonia Rani, Gollapally Naresh and **Tapas Kumar Mandal***, Coupled-substituted double-layer Aurivillius niobates: Structures, magnetism and solar photocatalysis, ***Dalton Trans.***, *49*, 1433 (**2020**).

45. Lalit Kumar, Joydeep Datta, Partha Pratim Ray and **Tapas Kumar Mandal***, Composition dependent 3C and 6H perovskites, $A_3MTiSbO_9$ (A = Sr, Ba; M = Mn, Co): Structural, magnetic and dielectric properties, ***J. Solid State Chem.***, *282,* 121116 (**2020**).

44. Ravikumar K. V. G., H. Kubendiran, K. Ramesh, Sonia Rani, **Tapas Kumar Mandal**, Mrudula Pulimi, C. Natarajan and Amitava Mukherjee*, Batch and column study on tetracycline removal using green synthesized NiFe nanoparticles immobilized alginate beads, ***Environ. Technol. & Inno.***, *17*, 100520 (**2020**).

43. Sudiksha Aggrawal, **Tapas Kumar Mandal** and Paritosh Mohanty*, Ag^+ driven antimicrobial activity of Ag^+:ZnO nanowires immobilized on paper matrices, ***Materialia***, *8*, 100490 (**2019**).

42. Nishant Gautam, Raeesh Muhammad, Hari Raj, Anjan Sil, Paritosh Mohanty and **Tapas Kumar Mandal***, Multimodal mesopore hierarchy in Li_3VO_4 boosts electrochemical anode performance of lithium-ion batteries, ***Microporous Mesoporous Mater.***, 290, 109669 (**2019**).

41. R. V. Lakshmi, Kamalesh Pal, **Tapas Kumar Mandal** and S. T. Aruna*, Multifunctional properties of ceria nanocubes synthesized by a hydrothermal method, ***Bull. Mater. Sci.***, *42*, 210 (**2019**).

40. Uma Dutta, Debamalya Ghosh, Ariful Haque, Lalit Kumar, **Tapas Kumar Mandal**, Pravin S. Walke, Kamalesh Pal, Arup Gayen, Asish K. Kundu and Md. Motin Seikh*, A revisit to the effect of annealing temperature on magnetic properties of $LaFe_{0.5}Mn_{0.5}O_3$, ***J. Phys.: Condens. Matter***, *31*, 225801 (**2019**).

39. Vandana Meena and **Tapas Kumar Mandal***, Topotactic Ion Exchange in a Three-Dimensional Close-Packed Trirutile Structure with an Octahedral Network, ***Inorg. Chem.***, *58*, 2921 (**2019**).

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37. Kumari Naveen, Manfred Reehuis, Peter Adler*, Philip Pattison, Andreas Hoser, **Tapas Kumar Mandal**, U. Arjun, Prashanta K. Mukherjee, Ramesh Nath, Claudia Felser and Avijit Kumar Paul, Reentrant magnetism at the borderline between long-range antiferromagnetic order and spin-glass behavior in the *B*-site disordered perovskite system $Ca_{2-x}Sr_xFeRuO_6$, ***Phys. Rev. B,*** *98,* 224423 (**2018**).

36. Gollapally Naresh, Jaideep Malik, Vandana Meena and **Tapas Kumar Mandal***, pH-Mediated Collective and Selective Solar Photocatalysis by a series of Layered Aurivillius Perovskites, ***ACS Omega***, 3, 11104 (**2018**).

35. Kamalesh Pal, Kalyan Ghorai, Sudiksha Aggrawal, **Tapas Kumar Mandal**, Paritosh Mohanty, Md Motin Seikh and Arup Gayen*, Remarkable Ti-promotion in vanadium doped anatase titania for methylene blue adsorption in aqueous medium, ***J. Env. Chem. Engg.***, 6, 5212 (**2018**).

34. Kamalesh Pal, Arka Dey, Partha P. Ray, Natalia E. Mordvinova, Oleg I. Lebedev, **Tapas K. Mandal**, Md Motin Seikh* and Arup Gayen*, Synthesis, Characterization and Catalytic Activity of Quadruple Perovskite: $CaCu_{3-x}Mn_xTi_{4-x}Mn_xO_{12}$ (x = 0, 0.5 and 1.0), ***ChemistrySelect***, *3*, 1076 (**2018**).

33. Ambikeshwar Pandey, Gollapally Naresh and **Tapas Kumar Mandal***, Sunlight responsive new Sillén-Aurivillius A1X1 hybrid layered oxyhalides with enhanced photocatalytic activity, ***Sol. Energy Mater. Sol. Cells***, 161, 197 (**2017**).

32. Seema Singh, Vimal Chandra Srivastava*, Shang Lien Lo, **Tapas Kumar Mandal** and Gollapally Naresh, Morphology-controlled green approach for synthesizing the hierarchical self-assembled 3D porous ZnO superstructure with excellent catalytic activity, ***Microporous Mesoporous Mater.***, 239, 296 (**2017**).

31. Seema Singh, Vimal Chandra Srivastava*, **Tapas Kumar Mandal**, Indra Deo Mall and Shang Lien Lo, Synthesis and application of green mixed-metal oxide nanocomposites materials from solid waste for dye degradation, ***J. Environ. Mgmt.***, 181, 146 (**2016**).

30. Tinku Baidya*, Parthasarathi Bera*, Oliver Krocher, Olga Safonova, Paula M. Abdala, Birgit Gerke, Rainer Pöttgen, Kaustubh R. Priolkar and **Tapas Kumar Mandal**, Understanding the anomalous behavior of the Vegard's law in $Ce_{1-x}M_xO_2$ (M = Sn and Ti; $0 < x \leq 0.5$) solid solutions, ***Phys. Chem. Chem. Phys.***, 18, 13974 (**2016**).

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27. Seema Singh, Vimal Chandra Srivastava* and **Tapas Kumar Mandal**, Treatment of Fertilizer Industry Wastewater by Catalytic Per-Oxidation Process using Copper loaded SBA-15, ***J. Environ. Sci. Health: Part A***, *50*, 1468 (**2015**).

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23. Rajiv Mistri, Sayantani maiti, Jordi Llorca, Montserrat Dominguez, **Tapas Kumar Mandal**, Paritosh Mohanty, Bidhan Chandra Ray and Arup Gayen*, Copper ion substituted hercynite ($Cu_{0.03}Fe_{0.97}Al_2O_4$): A highly active catalyst for liquid phase oxidation of cyclohexane, ***Appl. Cat. A: General***, *485*, 40 (**2014**).

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From Rutgers University, USA & University of Glasgow, UK (2006 -2010)

21. **Tapas K. Mandal** and Duncan H. Gregory*, Hydrogen: Future energy vector for sustainable development, ***Proceedings of the Institution of Mechanical Engineers, Part C, J. Mech. Engg. Sci.***, *224(C3)*, 539 (**2010**).

20. **Tapas Kumar Mandal**, Mark Croft, Joke Hadermann, Gustaaf Van Tendeloo, Peter W. Stephens and Martha Greenblatt*, La_2MnVO_6 Double Perovskite: A Structural, Magnetic and X-Ray Absorption Investigation, ***J. Mater. Chem.***, *19*, 4382 (**2009**).

19. **Tapas K. Mandal** and Duncan H. Gregory*, Hydrogen storage materials: present scenarios and future directions, ***Ann. Rep. Sec. A (Inorg. Chem.)***, *105*, 21 (**2009**).

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16. **Tapas Kumar Mandal**, Viktor V. Poltavets, Mark Croft and Martha Greenblatt*, Synthesis, Structure and Magnetic Properties of $A_2MnB'O_6$ (A = Ca, Sr; B' = Sb, Ta) Double Perovskites, ***J. Solid State Chem.***, *181*, 2325 (**2008**).

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14. **Tapas Kumar Mandal**, Artem M. Abakumov, Joke Hadermann, Gustaaf Van Tendeloo, Mark Croft and Martha Greenblatt*, Synthesis, Crystal Structure and Magnetic Properties of $Sr_{1.31}Co_{0.63}Mn_{0.37}O_3$: A Derivative of the Incommensurate Composite Hexagonal Perovskite Structure, ***Chem. Mater.***, *19*, 6158 (**2007**).

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From Indian Institute of Science, Bangalore (during PhD, 2000-2005)

12. **Tapas Kumar Mandal** and J. Gopalakrishnan*, New route to ordered double perovskites: Synthesis of rock salt oxides, Li_4MWO_6, and their transformation to Sr_2MWO_6 (M = Mg, Mn, Fe, Ni) via metathesis, ***Chem. Mater.***, *17*, 2310 (**2005**).
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10. **Tapas Kumar Mandal**, Saji Augustine, J. Gopalakrishnan* and Ph. Boullay, $Bi_4LnNb_3O_{15}$ and (Ln = La, Pr, Nd) and $Bi_4LaTa_3O_{15}$: New intergrowth Aurivillius related phases, ***Mater. Res. Bull.***, *40*, 920 (**2005**).

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4. J. Gopalakrishnan, Z. Serpil Gönen, K. -S. Chang, Ichiro Takeuchi, **T. K. Mandal**, Bryan W. Eichhorn*, James C. Fettinger and Richard L. Greene, Synthesis and structure of $La_{14}V_6CuO_{36.5}$: A transparent Cu(I) vanadate containing $[OCuO]^{3-}$ sticks, ***J. Mater. Chem.***, *12*, 3839 (**2002**).

3. **Tapas Kumar Mandal**, N. Y. Vasanthacharya and J. Gopalakrishnan*, A novel metathesis route for the synthesis of La_2CuO_4 and its superconducting analogues: Synthesis of a new lithium-substituted derivative of La_2CuO_4, ***J. Mater. Chem.***, *12*, 635 (**2002**).

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Patents

1. Rapid Hydrothermal Synthesis of Hierarchically Mesoporous Li_3VO_4 and its Application as Anode Material in Lithium Ion Batteries, (**Inventors**: Nishnat Gautam, Paritosh Mohanty, Anjan Sil and **Tapas Kumar Mandal**), Indian Patent, Application No. **201711038135**; Filing Date 27.10.2017; Patent Grant No. **382774,** Granted on 26.11.**2021**.

2. A Method of Synthesis of Lithium Vanadate on Graphene Oxide, (**Inventors**: Nishant Gautam and **Tapas Kumar Mandal**), Indian Patent, PPA No. **201811022066**; Filing Date 13.06.2018; Patent Grant No. **437948,** Granted on 10.07.**2023**.

3. Hydrogen Production by Aurivillius Perovskite Semiconductors from Dye-Polluted Water, (**Inventors**: Shubham Kumar and **Tapas Kumar Mandal)**, Indian Patent (Provisional) Application No. **202311053718**; Initial Filing Date 10.08.**2023**.

4. Aurivillius Perovskite Photocatalysts, Their Preparation Method and Process of Persistent Organic Pollutants Removal from Contaminated Water, (**Inventors**: Shubham Kumar and **Tapas Kumar Mandal**), Indian Patent Application No. **202311065213**; Initial Filing Date 28.09.**2023**.

5. An Electrocatalyst for Air Cathode Electrode of a Metal-Air Battery and a Process of Preparation Thereof, (**Inventors**: Sujan Sen and Tapas Kumar Mandal), Indian Patent Application No. **202411059717**; Initial Filing Date 07.08.**2024**.

6. An Electrocatalyst for Hydrogen Gas Production and Sulfur Recovery and its Method of Preparation, (**Inventors**: Tapas Kumar Mandal, Rahul, Ritik Payak, and Kunakl Shaw), Indian Patent (Provisional) Application No. **202411066843**; Initial Filing Date 04.09.**2024**.

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Books / Book-Chapters

1. **Tapas Kumar Mandal** and Martha Greenblatt, *Transition Metal Oxides: Magnetoresistance and Half-metallicity*, in Contemporary Inorganic Materials, (eds. D. W. Bruce, D. O'Hare and R. I. Walton), Volume 2: Functional Oxides, John Wiley & Sons, 2010.

Conference/Symposium/Meeting/Workshop

46. International Conference on Emerging Trends in Photodynamics and Photochemistry (ETPP-2024), IISER Mohali, Mohali, March 26-28 (2024), Shubham Kumar and **Tapas Kumar Mandal**, Invited Talk: "*Structural Insights of Inorganic Hybrid Perovskites in Photocatalytic Hydrogen Evolution*"

45. IMESD-2023, IIT Roorkee, Roorkee (India), December 7-10 (**2023**), Megha Goyal and **Tapas Kumar Mandal**, Poster Title: *Solid State Synthesis of New Li and Ni rich oxyfluorides and their electrochemical performance*.

44. IWAM-2023, Dubai, UAE, (**2023**), Megha Goyal and **Tapas Kumar Mandal**, Poster Title: *Effect of different surfactants on the electrochemical performance of NiMn layered double hydroxides*.

43. EMEE-2023, IIT Roorkee, March 3-4, (**2023**), Preeti and **Tapas Kumar Mandal**, Poster Title: *Solid state synthesis of* $Na_{0.5}Sr_{0.5}M_{0.25}Nb_{0.75}O_3$ *(M= Cr, Mn, Fe and Co) compounds and their photocatalytic activity*.

42. International Conference on Energy Conversion & Storage (IECS-2023), IIT Madras, January 18-20 (**2023**), Megha Goyal, Nishant Gautam and Tapas Kumar Mandal, Invited Talk: *Effect of pore hierarchy and microstructure in boosting the electrochemical energy storage in batteries and supercapacitors.*

41. International Conference on Advances in Materials Processing: Challenges and Opportunities, October (**2022**), Megha Goyal and **Tapas Kumar Mandal**, *Influence of Different Precipitating Agents on the Synthesis of NiMn-LDHs Based Cathode Materials for High Performance Hybrid Devices.* (**Singapore: Springer Nature Singapore)**.

40. AMPCO' 22, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India, October 17-19 (**2022**), Megha Goyal and **Tapas Kumar Mandal**, Poster Title: *Hydrothermal synthesis of NiMn layered double hydroxide for high performance hybrid devices.*

39. AMPCO'22, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India, October 17-19 (**2022**), Shubham Kumar and **Tapas Kumar Mandal**, Poster Title: "*Study of Cation Distribution in Sillen-Aurivillius Intergrowth Phase* $Bi_4BaSrTi_2NbO_{14}Cl$*, synthesized by Two Different Approaches and its Effect on*

Photocatalytic Water Splitting." (**Best Poster Award**)

38. Modern Trends in Inorganic Chemistry-XIX, Department of Chemistry, Institute of Science, BHU, December 15-17 (**2022**), Shubham Kumar, Jaideep Malik, Gollapally Naresh, and **Tapas Kumar Mandal**, Invited Talk: "*Structural and mechanistic insights into the photocatalytic activity of layered and all-inorganic hybrid perovskites*."

37. 29th CRSI-NSC, IISER Mohali, July 7-9, (**2022**), Preeti and **Tapas Kumar Mandal**, Poster Title: *Unleashing the Potential of Coupled Substituted 3D Niobate Perovskite Oxides in Cocatalyst-Free Photocatalytic Hydrogen Evolution*.

36. IUMRS-ICA 2022, IIT-Jodhpur, December 19-23 (**2022**), Preeti and **Tapas Kumar Mandal**, Poster Title: *Simple to Quadruple Perovskite Transformation by Coordination Switching on Solid-State Ion-Exchange*.

35. Chem-Day 2022, Department of Chemistry, IIT Roorkee (**2022**), Preeti and **Tapas Kumar Mandal**, Poster Title: *Coupled substituted perovskite niobates for photocatalytic hydrogen evolution*. (**Selected for Best Poster Award**).

34. Proceedings of the eight DAE-BRNS interdisciplinary symposium on materials chemistry, Mumbai (India), June 17-19, (**2021**) Megha Goyal and **Tapas Kumar Mandal**, *Alpha-Nickel Cobalt Manganese based ternary layered double hydroxide: as a cathode material for high performance energy storage devices*.

33. International Conference on Recent Developments in Organic and Applied Chemistry-2020 (RDOAC-2020, A virtual meeting), organized by Department of Chemistry, SAS, KIIT, Deemed to be University, Bhubaneswar, India, July 6-7 (**2020**) **Tapas Kumar Mandal**, Invited Lecture: *Perspectives on Layered Perovskites in Solar Photocatalysis.*

32. 2nd Indian Materials Conclave (MRSI), organized by CSIR-CGCRI (Central Glass and Ceramic Research Institute), Kolkata, India, February 11 - 14 (**2020**), Shubham Kumar, Jaideep Malik and **Tapas Kumar Mandal**, Poster Title: *Rhodamine B Dye-Sensitized Photocatalytic Degradation of BPA by Alkaline Earth Metal and Iron Co-substituted Niobates.*

31. 2nd Indian Materials Conclave (MRSI), organized by CSIR-CGCRI (Central Glass and Ceramic Research Institute), Kolkata, India, February 11 - 14 (**2020**), Jaideep Malik and **Tapas Kumar Mandal**, Poster Title: *Collective Degradation of Rhodamine B and Tetracycline by New Transition Metal Incorporated Aurivillius Perovskites,* $Bi_{2.5}Sr_{1.5}Nb_2Ti_{0.5}M_{0.5}O_{12}$ *(M = Cr, Mn and Fe).*

30. 47th IUPAC World Chemistry Congress, Le Palais des Congrés de Paris, France, July 5 – 12, (**2019**), Vandana Meena and **Tapas Kumar Mandal**, Poster Title: $Li_{0.08}Fe_{0.46}SbWO_6$*: A New tri-α-*PbO_2 *Type Fe-Sb-Tungstate by Topotactic Ion Exchange of* $LiSbWO_6$*.*

29. International Conference on Structural and Inorganic Chemistry-II (ICSIC-II), IISER Pune, March

18-19 (**2019**). G. Naresh, J. Malik and **T. K. Mandal**, Invited Talk: *Layered Perovskites in Solar Photocatalysis: A Structural Perspective.*

28. First Indian Materials Conclave & 30th AGM of MRSI, Indian Institute of Science, Bangalore, February 12-15 (**2019**). Lalit Kumar and **Tapas Kumar Mandal**, Talk: *Crystal Structure and Magnetic Properties of $LnCu_3MnTi_3O_{12}$ (Ln = La, Nd) Quadruple Perovskites*.

27. 23rd CRSI National Symposium in Chemistry, Indian Institute of Science Education & Research Bhopal, Bhopal, July 13-15 (**2018**). Vandana Meena and **Tapas Kumar Mandal**; Poster: *Topotactic Transformation of Non-Magnetic Layered Titanates into Magnetic Titanates through Soft-Chemistry*.

26. 23rd CRSI National Symposium in Chemistry, Indian Institute of Science Education & Research Bhopal, Bhopal, July 13-15 (**2018**). Jaideep Malik, Gollapally Naresh, Vandana Meena and **Tapas Kumar Mandal**; Poster: *Collective and Selective Solar Photocatalysis by $Bi_5ATi_4FeO_{18}$ (A = Ca, Sr and Pb) Aurivillius Perovskites*.

25. 2nd Shaping the Energy Future: Challenges and Opportunities (SEFCO-2018), Indian Institute of Petroleum, Dehradun, May 11-12 (**2018**). Sonia Rani and **Tapas Kumar Mandal**; Poster: *Transition Metal Incorporated New Sillén-Aurivillius A1X1 Layered Tungstates: Magnetism and Solar Photocatalysis.*

24. Multifunctional Materials: Analytical Techniques and Diverse Applications (MMAD18), NIT Kurukshetra, January 20 (**2018**). Expert talk: *New Oxides for Solar Photocatalysis and Energy Storage.*

23. Multifunctional Materials: Analytical Techniques and Diverse Applications (MMAD18), NIT Kurukshetra, January 20 (**2018**). Nishant Gautam, Prashanth Sandineni, Amitava Choudhury and **Tapas Kumar Mandal**; Poster: *A new synthetic route for $Na_3Fe(PO_4)_2$ layered phosphate: A potential cathode material for sodium and lithium ion batteries.*

22. Modern Trends in Inorganic Chemistry-XVII, National Chemical Laboratory (NCL) & Indian Institute of Science Education and Research (IISER), Pune, December 11-14 (**2017**). Jaideep Malik and **Tapas Kumar Mandal**; Poster: *Effect of Iron Substitution on Photocatalytic Activity of New Five Layered Aurivillius Perovskites.*

21. Modern Trends in Inorganic Chemistry-XVII, National Chemical Laboratory (NCL) & Indian Institute of Science Education and Research (IISER), Pune, December 11-14 (**2017**). Vandana Meena and **Tapas Kumar Mandal**; Poster: *$Li_{1-x}Fe_xNbWO_6$: A Novel Layered Trirutile Oxide obtained by Topotactic Ion-Exchange and its Magnetic Properties.*

20. 21st CRSI National Symposium in Chemistry, Indian Institute of Chemical Technology, Hyderabad, July 14-16, (**2017**). Vijay Alwera and **Tapas Kumar Mandal**; Poster: *Manganese Oxides with various Morphologies: Applications in Catalytic Dye Removal*.

19. 21st CRSI National Symposium in Chemistry, Indian Institute of Chemical Technology, Hyderabad, July 14-16, (**2017**). Lalit Kumar and **Tapas Kumar Mandal**; Poster: *$A_3MTiSbO_9$ (A = Sr, Ba; M = Mn, Co): Composition Dependent New 3C and 6H Perovskite Phases and Their Magnetic Properties*.

18. 10th National Conference on Solid State Chemistry and Allied Areas (ISCAS-2017), Delhi Technological University, Delhi, July 1-3, (**2017**). Sonia Rani and **Tapas Kumar Mandal**; Oral presentation: *Transition Metal Incorporated Two Layer Aurivillius Niobates: Magnetism and Solar Photocatalysis*.

17. Discussion Meeting on 'NMR Meets Materials', TCIS-TIFR, Hyderabad, May 5-6 (**2017**). Title of Talk: *Layered Titanates, Vanadates and Phosphates: Applications in Photocatalysis and Energy Storage*.

16. International Symposium on Solid State Chemistry, JNCASR, Bangalore, December 1-3 (**2016**).

15. 18th CRSI National Symposium in Chemistry, Punjab University & INST, Mohali February 5-7, (**2016**). Nishant Gautam, Hariraj, Anjan Sil and **Tapas Kumar Mandal**; Poster: *Novel Olivine type $LiMnPO_4$: Potential cathode materials for high voltage Li-ion battery.*

14. Modern Trends in Inorganic Chemistry-XVI, Jadavpur University, December 3-5 (**2015**). Gollapally Naresh and **Tapas Kumar Mandal**; Poster: *Sunlight-driven Selective Dye Degradation over New Sillen-Aurivillius Layered Perovskites.*

13. International Conference on Emerging Materials and Applications (ICEMA'14), IIT Roorkee, Saharanpur Campus, April 5-6 (**2014**). Kamini Gupta, Gollapally Naresh and **Tapas Kumar Mandal**; Poster: *Novel perovskites in the Pb-La-Ti-Fe-O system: Synthesis, characterization and visible-light photocatalysis.*

12. Modern Trends in Inorganic Chemistry-XV, IIT Roorkee, December 13-16 (**2013**). Gollapally Naresh and **Tapas Kumar Mandal**; Poster: *Novel transition metal incorporated Aurivillius phases $Bi_{5-x}La_xTi_3FeO_{15}$ (x = 0 - 2) as visible light photocatalysts.*

11. National Magnetic Resonance Society Symposium 2013 (NMRS 2013), IIT Bombay, February 3-6 (**2013**). Nishant Gautam, **Tapas Kumar Mandal**, Elumalai Viswanathan and Subramanian Ganapathy; Title of talk: *Synthesis, characterization and solid state NMR studies of two and three-dimensional lithium lanthanum/calcium titanates.*

10. 49th Annual Convention of Chemists 2012 (organized by Indian Chemical Society), Dept. of Applied Sciences, NITTTR, Bhopal, December 12-15 (**2012**). Rajiv Mistri, Sayantani Maiti, Jordi Llorca, **Tapas Kumar Mandal**, Bidhan Chandra Ray and Arup Gayen; Poster: *Selective oxidation of cyclohexane with hydrogen peroxide in presence of copper ion substituted spinel oxide substituted catalysts $Cu_xM_{1-x}Al_2O_4$ (x =0-0.07; M = Mg, Mn, Fe, Ni, Zn)*.

9. Modern Trends in Inorganic Chemistry-XIV, University of Hyderabad, December 10-13 (**2011**). **Tapas Kumar Mandal**, Mark Croft and Martha Greenblatt; Poster: *Double Perovskites as Exotic Magnetic Materials: Synthesis of La_2MnVO_6 and Future Challenges.*

8. Scottish Hydrogen and Fuel Cell Association Membership Meeting, University of St. Andrews, St. Andrews, UK, February 17 (**2010**). **Tapas Kumar Mandal**; Title of talk: *Solid-state hydrogen storage: the state of the art and potential solutions*.

7. ISIS Crystallography User Group Meeting, Abingdon, UK, November 5-6 (**2009**). **Tapas K. Mandal** and Duncan H. Gregory; Poster: *Hydrogen storage in the 1:1 $LiNH_2$-MgH_2 system: An X-ray diffraction investigation*.

6. 42nd IUPAC World Chemistry Congress, SECC, Glasgow, UK, August 2-7 (**2009**).

5. Universities of Scotland Inorganic Conference (USIC), University of Strathclyde, Glasgow, UK, September 11-12 (**2008**).

4. 22nd Annual Symposium of the Laboratory for Surface Modification, Rutgers University, Piscataway, New Jersey, USA, February 15 (**2008**). **Tapas K. Mandal**, Viktor V. Poltavets, Mark Croft and Martha Greenblatt; Poster: *Synthesis and manipulation of low-dimensional transition metal oxides towards realization of novel electronic properties.*

3. Materials Research Society Symposium Proceedings Series, Volume 988E, November 28-30 (**2006**). Elisha Josepha, **Tapas Mandal** and John B. Wiley; Poster QQ9.19: *The Synthesis and Characterization of $CsAeBiO_2Cl_2$ (Ae = Ca, Sr, Ba).*

2. *SSCU Silver Jubilee International Symposium on Solid State and Materials Chemistry*, Indian Institute of Science, Bangalore, India, December 4–7 (**2001**).

1. *Winter School in Solid State and Materials Chemistry*, Jawaharlal Nehru Center for Advanced Scientific Research, Bangalore, India, 29 November 29 – December 4 (**1999**).