

LIST OF PUBLICATION

- 1) Spinel Chromite MCr_2O_4 ($\text{M} = \text{Cu}, \text{Mg}, \text{Zn}$) Nanoparticle-Based Sensors for Trace Acetone Detection and Non-Invasive Diabetes Diagnosis from Exhaled Breath"
Authors: Mojumder, Subhajit; Das, Tanushri; Das, Sagnik; Das, Subhajit; Biswas, Maitrayee ; Ghosh, Srabanti; **Pal, Mrinal*** *ACS Applied Nano Materials* **8** (2025) 6188
- 2) Synergistic effect of $\text{ZnO-ZnFe}_2\text{O}_4$ heterostructures for enhanced surface catalytic activity in Cr (vi) reduction, green H_2 generation and CO sensing: an experimental study ... Subhajit Mojumder, Tanushri Das, Sanchi Monga, Prantik Bhattacharya, Sourabh Pal, Srabanti Ghosh, Saswata Bhattacharya, **Mrinal Pal***. *Nanoscale*, **17** (2025) 5941
- 3) Improved ammonia sensing performance achieved through defect modulation by Li doping in cauliflower-like ZnO for exhaled breath analysis towards renal diseases detection: An experimental venture supported by DFT calculation ...S Mojumder, T Das, T Mondal, S Ghosh, D Saha, CK Ghosh, **M Pal*** *TrAC Trends in Analytical Chemistry*, **180** (2024) 117896
- 4) BiFeO_3 Nanoparticles Embedded on $\alpha\text{-MoO}_3$ Nanorods: A Heterostructure for Oxygen Vacancy-Driven Photocatalytic Activity and Gas Sensing. T Das, S Mojumder, D Sarkar, S Ghosh, **M Pal*** *ACS Applied Nano Materials* **7** (2024), 25675-25692
- 5) Highly sensitive and selective rGO-LaFeO₃ nanocomposite based formaldehyde sensors towards air quality monitoring. S Dash, S Mojumder, T Das, D Saha, **M Pal*** *Chemosphere* **367** (2024) 143499
- 6) Multifunctional $\text{NaEu}(\text{WO}_4)_2$: defect-tuned red emission and acetone sensing at room temperature. KR Sahoo, T Das, **M Pal**, MR Karim, AH Seikh, CK Ghosh *Materials Advances* **5** (2024) 8238
- 7) Enhanced triethylamine detection at room temperature using layered MoS_2 nanosheet coated PPy nanorod: A comprehensive study. Monalisa Adhikari, Debdulal Saha, Dipankar Chattopadhyay, **Mrinal Pal*** *Langmuir*, **40** (2024) 15767
- 8) Highly sensitive and selective chemiresistive temperature-dependent trace formalin sensor using hydrothermally grown hexagonal yttrium ferrite. S Mojumder, T Das, D Saha, **M Pal*** *Materials Chemistry and Physics* **319** (2024) 129329

- 9) A truncated octahedron NaCe (MoO₄)₂ nanostructure: a potential material for blue emission and acetone sensing. N Haldar, T Mondal, T Das, D Sarkar, **M Pal**, AH Seikh, CK Ghosh *Materials Advances* **5** (2024) 4480
- 10) Enhanced ammonia sensing performance of barium hexaferrite enabled through Zn doping: Mechanistic study considering modulation of Fe²⁺/Fe³⁺ ratio and oxygen vacancy. T Das, S Mojumder, D Saha, **M Pal***. *Sensors and Actuators B: Chemical* **406** (2024) 135358
- 11) Development of highly sensitive and selective trace acetone sensor using perovskite yttrium ferrite: Mechanism, kinetics and phase dependence study. S Mojumder, T Das, M Mukherjee, D Saha, A Datta, **M Pal***. *Chemical Engineering Journal* **477** (2023) 146855
- 12) Improved Ethanol Sensing Performance of α -MnO₂ Nanorods at Room Temperature Enabled through PPy Embedding, M Adhikari, D Saha, D Chattopadhyay, **M Pal*** *Langmuir* **39** (2023) 12248
13. Beneficial effect of Pd and MWCNT co-loading in SnO₂ nanoparticles towards the low temperature detection of n-butane gas: synergistic effect on sensing performance, P Rana, M Narjinary, A Sen, **M Pal***. *Sensors & Diagnostics* **2** (4), (2023) 909
- 14) Facile and Green Synthesis of Novel Fluorescent Carbon Quantum Dots and Their Silver Heterostructure: An In Vitro Anticancer Activity and Imaging on Colorectal, S Mishra, K Das, S Chatterjee, P Sahoo, S Kundu, **M Pal***, A Bhaumik, *ACS omega* **8** (2023) 4566
- 15) Room-Temperature High-Performance Trace Level Acetone Sensor Based on Polypyrrole Nanotubes, **M Pal***, Monalisa Adhikari, Sagnik Das, Dipankar Chattopadhyay, Debdulal Saha. *ChemNanoMat* **9** (2023) 00191
- 16) Hydrothermal synthesis of defect-induced pristine α -NaCe (WO₄)₂: a novel material for solid state lighting and gas sensing. N Haldar, T Mondal, T Das, D Sarkar, **M Pal***, CK Ghosh. *CrystEngComm* **25** (2023) 3514
- 17) Band gap engineered Sn-doped bismuth ferrite nanoparticles for visible light induced ultrafast methyl blue degradation. S Chakraborty, N Chakraborty, S Mondal, **M Pal*** *Ceramics International* **48** (24), (2022) 37253
- 18) Y and Al co-doped ZnO-nanopowder based ultrasensitive trace ethanol sensor: A potential breath analyzer for fatty liver disease and drunken driving detection. S Mojumder, T Das, S Das, N Chakraborty, D Saha, **M Pal*** *Sensors and Actuators B: Chemical* **372** (2022) 132611

- 19) Beneficial effect of Sn doping on bismuth ferrite nanoparticle-based sensor for enhanced and highly selective detection of trace formaldehyde, T Das, S Mojumder, S Chakraborty, D Saha, **M Pal*** *Applied Surface Science* **602** (2022) 154340
- 20) Influence of major parameters on the sensing mechanism of semiconductor metal oxide based chemiresistive gas sensors: A review focused on personalized healthcare. S Das, S Mojumder, D Saha, **M Pal*** *Sensors and Actuators B: Chemical* **352** (2022) 131066
- 21) White light phosphorescence from ZnO nanoparticles for white LED applications. S Das, UK Ghorai, R Dey, CK Ghosh, **M Pal*** *New Journal of Chemistry* **46** (2022) 17585
- 22) Enhanced blue photoluminescence of cobalt-reduced graphene oxide hybrid material and observation of rare plasmonic response by tailoring morphology. N Singh, JR Ansari, **M Pal**, A Das, D Sen, D Chattopadhyay, A Datta *Applied Physics A* **127** (2021) 568
- 23) Effect of annealing on the defect mediated blue phosphorescence in ZnO nanocrystals, Sagnik. Das, Uttam Kumar Ghorai, Rajib Dey, Chandan Kumar Ghosh and **Mrinal Pal***. *RSC. Adv.*, **11** (2021) 335
- 24) Microporous copper chromite thick film based novel and ultrasensitive capacitive humidity sensor., P.L. Mahapatra, S. Das, P.P. Mondal, T.Das, D. Saha, **M. Pal***. *J. Alloys and Comp.*, **859** (2021) 157778
- 25) A highly sensitive cobalt chromite thick film based trace acetone sensor with fast response and recovery time for the detection of diabetes from exhaled breath., Sagnik Das, Priti Lata Mahapatra, Partha Pratim Mondal, Tanushri Das, **Mrinal Pal** and Debdulal Saha. *Mat. Chem. Phys.*, **262** (2021) 124291
- 26) Sol-gel derived cobalt containing Ni-Zn ferrite nanoparticles: Dielectric relaxation and magnetic property study., S. Chakrabarty, S. Bandopadhyay, **M. Pal** and A. Dutta, *Mat. Chem. Phys.*, **259** (2021) 124193
- 27) Novel barium hexaferrite based highly selective and stable trace ammonia sensor for detection of renal disease by exhaled breath analysis., T. Das, S. Das, M. Karmakar, S. Chakraborty, D. Saha and **M. Pal***. *Sensor and Actuator B:* **325** (2020) 128765
- 28) Non-invasive monitoring of human health by exhaled breath analysis: A comprehensive review., S. Das and **M. Pal***, *J. Electrochemical Soc.*, **167** (2020) 037562

- 29) Synthesis and Magnetic properties of stable cobalt nanoparticles decorated reduced graphene oxide sheets in the aqueous medium., N. Singh, J.R. Ansari, **M. Pal**, N.T.K. Thanh, T. Le and A. Datta. *J. Mat. Sci: Mat. Elect.*, **31** (2020) 15108
- 30) Bismuth Doped Nickel Ferrite Nanoparticles for Room Temperature Memory Devices, Mahasweta Banerjee, A Mukherjee, S Chakrabarty, soumen basu, **M Pal*** *ACS Appl. Nano. Mater.*, **2** (2019) 7795
- 31) Ethanol Sensing Properties of Nanocrystalline α -MoO₃, Sucheta Sau, Sonam Chakraborty, Tanushri Das and **Mrinal Pal***, *Front. Mater.* **6** (2019) 6: 285. doi.org/10.3389/fmats.2019.00285
- 32) Non-invasive Monitoring of Human Health by Exhaled Breath Analysis: A Comprehensive Review", Sagnik Das, **Mrinal Pal*** *J. Elec. Chem. Soc.*, **167** (2020) 037562
- 33) Highly selective and stable acetone sensor based on chemically prepared bismuth ferrite nanoparticles, Sonam Chakraborty and **Mrinal Pal***, *J.Alloy. Comp.* **787** (2019) 1204
- 34) A Light Induced Tunable n-Doping of Ag Embedded GO/RGO Sheets in Polymer Matrix, N. Singh, D. Kothari, J. Ansari, **M. Pal**, S. Mandal, S. Dhara and A. Datta, *J. Phys. Chem. C.* **123** (2019) 10557.
- 35) Impact of morphology on the electrical and photocatalytic property of CdS nanostructures, Sonam Chakraborty, Sucheta Sau and **Mrinal Pal***, *Mater. Today: Proceedings*, **18** (2019) 5481
- 36) Microscopic length scale of charge transport and structural properties of cobalt doped Ni–Zn ferrite nanocrystals: A structure property correlation study, S.Chakrabarty, Swagata Bandyopadhyay, A.Dutta and **M.Pal***, *Mat.Chem.Phys.*, **233** (2019) 310
- 37) Tailoring of microstructure, magnetic properties and charge carrier dynamics of YIG nanoparticles by Gd doping, S.Chakrabarty, Ankurava Sinha, A.Dutta and **M.Pal***, *J. Mag. Mag. Mater.*, **468** (2018) 215
- 38) Effect of yttrium doping on structure, magnetic and electric properties of nanocrystalline cobalt ferrites, S. Chakraborty, A. Datta and **M. Pal***, *J. Mag. Mag. Mater.*, **461** (2018) 69
- 39) Yttrium Doped Cobalt Ferrite Nanoparticles: Study of Dielectric relaxation and Charge Carrier Dynamics, Sabyasachi Chakrabarty, **Mrinal Pal*** and Abhigyan Dutta, *Ceram. Int.* **44** (2018) 14652

- 40) Highly efficient novel carbon monooxide gas sensor based on bismuth ferrite nanoparticles for environmental monitoring. S. Chakraborty and **M. Pal***, *New. J. Chem.*, **42** (2018) 7188
- 41) Hedgehog ZnO/Ag heterostructure: an environment-friendly rare earth free potential material for cold-white light emission with high quantum yield, Puja Bhattacharyya, Swarupananda Bhattacharjee, Manoranjan Bar, Uttam Kumar Ghorai, **Mrinal Pal**, Sujoy Baitalik and Chandan Kr. Ghosh. *Applied Physics A* **124** (2018) 782
- 42) Novel multiple phosphorescence in nanostructured Zinc oxide and calculation of correlated colour temperature., Sagnik Das , Uttam Kumar Ghorai , Rajib Dey , Chandan Kumar Ghosh , **Mrinal Pal*** . *Phys. Chem. Chem. Phys.*, **19** (2017) 22995
- 43) Improved sensitivity of CdS nanoparticles by virtue of calcium doping: Promising candidate for monitoring alcohol in exhale human breath, S. Chakraborty and **M. Pal***, *Materials & Design*, **126** (2017) 18
- 44) Improved ethanol sensing behaviour of cadmium sulphide nanoflakes: Beneficial effect of morphology, S. Chakraborty and **M. Pal***, *Sensor Actuator B*, **242** (2017) 1155.
- 45) Enhanced and selective acetone sensing properties of SnO₂-MWCNT nanocomposites: Promising materials for diabetes sensor. M. Narjinary, P. Rana, A. Sen and **M. Pal***, *Materials & Design*, **115** (2017) 158
- 46) Nanoporous γ -alumina based novel sensor to detect trace moisture in high temperature and high pressure environment, D Saha, DK Ghara, **M Pal***, *Sensors and Actuators B: Chemical* **222**, (2016) 1043.
- 47) Enhanced magnetic properties of Mn-Ni codoped cobalt ferrite nanoparticles corroborated with microstructural analysis. Sabyasachi Chakrabarty · **Mrinal Pal** and Abhigyan Dutta, *Adv. Sc. Lett.*, **22** (2016) 89.
- 48) Novel green phosphoresence from pristine ZnO quantum dots: Tuning of correlated color temperature. S. Das, C.K. Ghosh*, R. Dey and **M. Pal***, *RSC Advances*, **6** (2016) 236
- 49) Multifunctionality in graphene decorated with cobalt nanorods. O. Mondal, **M. Pal**, D. Chakravorty and A. Dutta, *Materials & Design*, **101** (2016) 204
- 50) Effect of Mn and Ni codoping on ion dynamics of nanocrystalline cobalt ferrite: Astructure property correlation study. S. Chakraborty, A. Dutta and **M. Pal***, *Elctro. Chemica. Acta*, **184** (2015) 70

- 51) Effect of Y and Mn co-doping on multiferroic properties of nanocrystalline BFO. A.Mukherjee, S.Basu, Nguyen TK Thanh, Luke AW Green **M. Pal*** *J. Mat. Sc.*, **50** (2015) 1891.
- 52) Enhanced magnetic properties of doped cobalt ferrite nanoparticles by virtue of cation distribution. S. Chakrabarty, A. Dutta and **M. Pal***, *J. Alloys and Comp.*, **625** (2015) 216–223
- 53) Structural, optical and electrical properties of chemically derived nickel substituted zinc ferrite nanocrystals. S. Chakrabarty, **M. Pal** and A. Dutta, *Mater. Chem. Phys.*, **153** (2015) 221
- 54) Synthesis and characterization of redox non-innocentcobalt(III) complexes of a O,N,O donor ligand: Radical generation, semi-conductivity, antibacterial and anticancer activities. P.Ghosh, A.Roy Chowdhury, S. Kr. Saha, M. Ghosh, **M.Pal**, N.C.Murmu and P.Banerjee., *Inorg. Chimica Acta.*, **429** (2015) 99
- 55) Influence of doping on crystal growth, structure and optical properties of nanocrystalline CaTiO₃: a case study using small-angle neutron scattering. O. Mondal, M. Pal, R. Singh, D. Sen, S. Mazumder and **M. Pal***, *J. Appl. Cryst.* (2015) **48**, 836.
- 56) Reduced graphene oxide synthesis by high energy ball milling, O. Mondal, S. Mitra, **M. Pal**, A. Dutta, S. Dhara, D. Chakravorty, *Mater. Chem. Phys.*, **161** (2015) 123
- 57) Enhanced Magnetodielectric and Multiferroic Properties of Er-doped Bismuth Ferrite Nanoparticles Materials Chemistry and Physics. A. Mukherjee, M. Banerjee, S. Basu, M.D. Mukadam, S.M. Yusuf, **M. Pal***, *Mater. Chem. Phys.*, **162** (2015) 140.
- 58) Giant magnetodielectric and enhance multiferroic properties Sm-doped BiFeO₃ nanoparticles. A.Mukherjee, S.Basu, P.K. Manna, S.M. Yusuf and **M. Pal***, *J. Mater. Chem. C*, **2** (2014) 5885.
- 59) Ethanol and acetone sensing properties of Mg-Zn ferrite nanoparticulate chemiresistive sensor M. Karmakar, P. Das, B. Mondal, **M. Pal** and K. Mukherjee, *J. Mater. Sc.*, **49** (2014) 5766.
- 60) Enhanced magnetic and electric properties of Y and Mn co-doped BiFeO₃ nanoparticles. A.Mukherjee, M. Banerjee, S.Basu, N.TK Thanh, Luke AW Green and **M. Pal**, *Physica B*, **448** (2014) 199-203.
- 61) Enhancement of multiferroic properties of nanocrystalline BiFeO₃ powder by Gd doping. A.Mukherjee, S.Basu, P.K. Manna, S.M. Yusuf and **M. Pal***, *J. Alloys. Comp.*, **598** (2014) 142

- 62) Acetone and Ethanol sensing of barium hexaferrite particles: A case study considering the possibilities of non-conventional hexaferrite sensor. M. Karmakar, B. Mondal, **M. Pal** and K. Mukherjee, *Sensor and Actuator B*, **190** (2014) 627.
- 63) Gadolinium substitution induced defect restructuring in multiferroic BiFeO₃: Case study by positron annihilation spectroscopy. A. Mukherjee, M. Banerjee, S. Basu, PGM. Nambissan and **M. Pal***, *J. Phys.D.: Appl. Phys.*, **46** (2013) 495309
- 64) Ultrafine narrow dispersed copper nanoparticles synthesized by a facile chemical reduction method. O. Mondal, A. Datta, D. Chakravorty and **M. Pal***, *MRS Communication*, **3**, (2013) 91.
- 65) Improved and unusual magnetic properties of ZnO nanorings. Oindrila Mondal, Nguyen TK Thanh, Luke AW Green and **Mrinal Pal*** *Funct. Mater.Lett.* **6** (2013) 1350049.
- 66) Unusual and strong emission in visible region from Mn²⁺ and Y³⁺ doped ZnO nanocrystals, O. Mondal and **M. Pal***, *Optical Materials*, **35** (2013) 1520.
- 67) Effect of Mn doping on microstructure and optical properties of nanocrystalline ZnO. M. Karmakar, O. Mondal, B. Roy, P.K. Pal and **M. Pal***, *NANO*, **8** (2013) 1350058.
- 68) Effect of Ni-Co codoping on structure and electrical properties of multiferroic BiFeO₃ nanoparticles. SK. M. Hossain, A. Mukherjee, S. Basu and **M. Pal***, *Micro and Nano Letters*, **8** (2013) 374.
- 69) Enhanced multiferroic properties in nanocrystalline BiFeO₃ through La doping. SK. M. Hossain, A. Mukherjee, S. Chakraborty, S. Basu, **M. Pal***, *Mater. Focus*, **2** (2013) 92.
- 70) Preparation of Polystyrene-Clay nanocomposite by Solution Intercalation Technique, P. K. Paul, S. A. Hussain, D. Bhattejee and **M. Pal**, *Bul. Mater. Res.* **36** (2013) 361.
- 71) Ni-substitution induced inversion in ZnFe₂O₄ seen by positron annihilation. P.M.G. Nambissan, O. Mondal, S. Chakrabarty and **M. Pal**, *Mater. Sci. Forum*, **733** (2013) 219.
- 72) Effect of Yttrium doped on Electrical transport properties of BiFeO₃ nanoparticles. A. Mukherjee, S. Basu, G. Chakraborty and **M. Pal**, *J. Appl. Phys.* **112** (2012) 014321.
- 73) Effect of yttrium doping on multiferroic BFO nanoparticles. A. Mukherjee, SK. M. Hussain, **M. Pal** and S. Basu, *Applied Nanoscience*, **2** (2012) 305.

- 74) Effect of neodymium doping on structure, electrical and optical properties of nanocrystalline ZnO, B. Roy, S. Chakrabarty, O. Mondal, **M. Pal** and A Dutta, *Mater. Char.* **70** (2012) 1.
- 75) Preparation and characterization of borate glass containing manganese and zinc oxide, Manisha Pal, B. Roy and **M. Pal***, *J. Modern. Phys.*, **2** (2011) 1062.
- 76) Mn substitution effects and associated defects in ZnO nanoparticles studied by positron annihilation.
B. Roy, B. Karmakar, P.M.G. Nambissan and **M. Pal***, *NANO* **6** (2011) 173.
- 77) Effects of annealing on structure and optical properties of Mn-substituted ZnO nanoparticles. B. Roy, O. Mondal, D. Sen, J. Bahadur, S. Mazumder and **M. Pal***, *J. Appl. Cryst.* **44** (2011), 991.
- 78) Strong and unusual violet blue emission in ring-shaped ZnO nanocrystals.
O. Mondal and **M. Pal***, *J. Mater. Chem*, 2011, 21, 18354, DOI: 10.1039/C1JM13083H.
- 79) "Microstructure, Mossbauer and optical characterizations of nanocrystalline -Fe₂O₃ synthesized by chemical route," Abhijit Banerjee, Soumitra Patra, Mahuya Chakrabarti, Dirtha Sanyal, **Mrinal Pal** and Swapan K. Pradhan, *ISRN Ceramics*, doi:10.5402/2011/406094.
- 80) Adsorption of a Cationic Laser Dye onto Polymer/Surfactant Complex Film
Pabitra Kumar Paul; Syed Arshad Hussain; Debajyoti Bhattacharjee ; **Mrinal Pal**, *Chin. J. Chem. Phys.*, **24** (2011) 348
- 81) Microstructural analysis of chemically prepared nanocrystalline Mn-doped ZnO using modified Rietveld method, B. Roy, O. Mondal, A. Deb, S.P. Sengupta and P. Chatterjee, **M. Pal***, *NANO*, **6** (2011) 379
- 82) Enhanced magnetic properties in hydrothermally synthesized Mn doped BiFeO₃ nanoparticles, S. Basu, SK M Hossain, D. Chakravorty and **M Pal***, *Current Appl. Phys.* **11** (2011) 976.
- 83) Nanocrystalline GdFeO₃ through solid state reaction route: Structural and Magnetic study, O Mondal, SK M Hossain, B Roy, and **M Pal***, *Func. Mater. Lett.*, Vol. 4, No. 3 (2011) 249.
- 84) Nanocrystalline multiferroic materials, S. Sutradhar and **Mrinal Pal***, *Science & Society*, **9**(2) (2011) 9.

- 85) Magnetodielectric properties of nanodisc bismuth ferrite grown within Na-4 mica nanochannels, P. Hajra , **M. Pal**, A. Datta, D. Chakravorty, V. Meriakri and M. Parkhomenko. *J. Appl. Phys.*, **108** (2010) 114306.
- 86) Superparamagnetic Fluorescent Nickel-Enzyme Nanobioconjugates: Synthesis and characterization of a novel multifunctional biological probe. Pramod Kumar Verma, Anupam Giri, Nguyen TK Thanh, Le Duc Tung, Oindrila Mondal, **Mrinal Pal**, Samir Kumar Pal. *J. Mater. Chem.*, **20** (2010) 3722.
- 87) Structural characterization of manganese substituted nanocrystalline zinc oxide using small angle neutron scattering and high resolution transmission electron microscope B. Roy, B. Karmakar, J. Bahadur, S. Mazumder D. Sen and **M. Pal***, *J. Appl. Cryst.* **42** (2009) 1085.
- 88) Mn doping in ZnO nanoparticles: effects investigated by positron lifetime and Doppler broadening studies, B. Roy, B. Karmakar, **M. Pal**, and P.M.G. Nambissan. *J. Phys. Status. Solidi (C)* **6** (11) (2009) 2572.
- 89) Effect of Iron Substitution on Structure and Optical Properties of Nanocrystalline CaTiO₃, A. Bandyopadhyay, S. Mondal, M. Pal, U. Pal and **M. Pal***. *J. Nano Res.*, **3** (2008) 123.
- 90) Magnetic properties of Hydrothermally synthesized BiFeO₃ Nanoparticles, S. Basu, **M. Pal** and D. Chakravorty. *Journal of Magnetism and Magnetic Materials*, **320** (2008) 3361.
- 91) Magnetic and Transport Properties of Nanostructured Ferric Oxide Produced by Mechanical Attrition. P. Bramha, S. Dutta, **M. Pal** and D. Chakravorty., *J. Appl. Phys.* **100** (2006) 044302
- 92) Order-disorder transition of nanocrystalline Ni₃Al prepared by chemical route S.K. Pradhan, A. Dutta, **M. Pal** and D. Chakravorty. *Physica E*, **31** (2006) 224
- 93) Electrical conductivity in nanostructured magnetite-hematite composites produced by mechanical milling, S. Dutta, S. K. Manik, **M. Pal**, S. K. Pradhan, P. Bramha and D. Chakravorty. *J. Mag. Mag. Mater.*, **288** (2005) 306.
- 94) Nanocrystalline CaTiO₃ prepared by soft chemical route, S. K. Manik, S. K. Pradhan and **M. Pal**. *Physica E*, **25** (2005) 421.
- 95) Nanocrystalline Mn-doped ZnO by chemical route. Manisha Pal and **M. Pal***. *Jpn. J. Appl. Phys.*, **44** (2005) 7901.
- 96) Borate based spintronic materials in bulk form above room temperature. Manisha Pal and **M. Pal***. *J. Sur. Sc. Tech.*, **21** (2005) 91.

- 97) Synthesis of Nanocomposites Comprising Iron and Barium Hexaferrites
M. Pal, S. Bid, S.K. Pradhan, D. Das and D. Chakravorty. *J. Mag. Mag. Mater.*, **269** (2004) 42.
- 98) Phase Transition of Magnetite by Mechanical Alloying, S.Dutta, **M. Pal**, P.Brahma, S. Pradhan and D.Chakravorty, *Ind. J. Phys.*, **78A** (2) (2004) 201
- 99) Nanocrystalline magnetic alloys and ceramics (Review article)
M. Pal and D. Chakravorty, *Sadhna*, **28** (2003) 283.
- 100) Magnetic Nanocomposites, D. Chakravorty, S. Banerjee, **M. Pal**, P. Brahma, S. Roy, B. Roy and D. Das. *Ind. J. Phys.*, (special issue) 2002, 43-61.
- 101) X-ray Characterization of Nanocrystalline Ni₃Fe
P. Bose, S. Bid, S.K. Pradhan, **M. Pal** and D. Chakravorty. *J. Alloy. Comp.*, **343/1-2** (2002) 192-198.
- 102) Size dependent magnetic properties of Mn_{0.5}Zn_{0.5}Fe₂O₄, K. Mandal, S. Pan Mandal, S. Chakraverty, P.Agudo, **M. Pal**, and D. Chakravorty. *J. Appl. Phys*, **92** (2002) 501.
- 103) Parameters effect on the crystallization of Nd:YAG laser ablated TiO₂ thin films.
M. Pal, A. Narazaki, T. Sasaki and N. Koshizaki, *J. Mat. Res.*, **16** (2001) 3158.
- 104) Preparation of Pd/TiO₂ Nanocomposite by Magnetron Sputtering. **M. Pal***, Takeshi SASAKI and Naoto KOSHIZAKI, *Scripta Materialia*, **44** (2001) 1817 .
- 105) A study of Nanocrystalline (Mn-Zn) ferrite in SiO₂ matrix
K. Mandal, S. Pan Mandal, P. Agudo and **M. Pal**, *Appl.Sur.Sc.*, **182** (2001) 386.
- 106) Synthesis of nanocrystalline nickel oxide by controlled oxidation of nickel nanoparticles.
D. Das, **M. Pal**, E. Traversa and D. Chakravorty, *J. Appl. Phys.*, **88** (2000) 6856.
- 107) Preparation and characterization of nanocrystalline YIG.
M. Pal*, and D. Chakravorty, *PHYSICA E* ., **5** (3) (2000) 200.
- 108) Preparation of nanocomposites containing iron and nickel zinc ferrite.
M. Pal, D. Das, S.N. Chintalapudi and D. Chakravorty, *J.Mate.Res.* **15** (2000) 683.
- 109) Preparation of disorder nanocrystalline Ni₃Fe. A. Datta, **M. Pal** D. Das, S.N. Chintalapudi and D. Chakravorty, *J.Mag.Mag.Mater.*, **205** (1999) 301.

- 110) Structural study of iron borate glass containing NiO and ZnO.
M. Pal, D. Chakravorty and Ashoke Bhowmik, *J.Mater.Res.*, **13** (1998) 3286.
- 111) AC conductivity in bismuth oxide doped nickel-zinc ferrites.
M. Pal, P. Brahma and D. Chakravorty, *J.Phys.Soc.Jpn.*, **67** (1998) 2847.
- 112) Preparation of Nanocrystalline Barium Hexaferrite in a Glass Medium.
M. Pal, P. Brahma, D. Chakravorty, D. Bhattacharyya and H.S. Maiti, *NanoSTRUCTURE Mater.*, **8** (1997) 731.
- 113) Structure and physical properties of sodium antimony germanate glasses.
M. Pal*, *J. Mat. Res.* **11** (1996) 1831.
- 114) Nano crystalline nickel-zinc ferrite prepared by glass-ceramic route.
M. Pal, P. Brahma and D. Chakravorty, D. Bhattacharyya and H.S. Maiti, *J. Mag. Mag. Mater.*, **164** (1996) 256.
- 115) DC conductivity in Barium Hexaferrites Doped with Bismuth Oxide,
M. Pal, P. Brahma, B.R. Chakravorty and D. Chakravorty. *Jpn. J. Appl. Phys.*, **36** (1997) 2163.
- 116) Mixed valency character of bismuth in ferrite lattices.
M. Pal, P. Brahma, D. Chakravorty, B.R. Chakravorty, C. Anandan and S. Bera, *J. Mat. Sci. Lett.*, **16** (1997) 270.
- 117) Magnetic and electrical properties of nickel-zinc ferrite doped with bismuth oxide.
M. Pal, P. Bramha and D. Chakravorty, *J. Mag. Mag. Mater.* **152** (1996) 370.
- 118) Synthesis of Nanocrystalline Ni₃Cu by Sol-Gel Route.
S.K. Pradhan, A. Dutta, **M. Pal** and D. Chakravorty, *Meta. Mate. Trans*, **27A** (1996) 4213.
- 119) Magnetic properties of barium hexaferrite doped with bismuth oxide.
M. Pal, P. Brahma and D. Chakravorty and D.C. Agrawal, *J. Mag. Mag.Mater.* **147** (1995) 208
- 120) Relaxation studies on V₂O₅-TeO₂ glasses using heterogeneous conductor model.
M. Pal, S.K. Saha and D. Chakravorty, *Bull. Mater. Sci.* **17** (1994) 411.
- 121) AC Conductivity in Bismuth Substituted Barium Hexaferrites.
M. Pal, P. Brahma and D. Chakravorty, *J. Phys. Soc. Jpn.* **63** (1994) 3356.

- 122) Synthesis, Characterization and Electrical Properties of Nd-doped Nano crystalline Multiferroic Bismuth Ferrite, S. Basu, A. Murkherjee, SK. M. Houssain and M. Pal. IEEE Explore, Conference volume, (2011) 228-231, doi: 10.1109/ICONSET.2011.6167960.
- 123) Optical and Electrical Properties of Codoped Nanocrystalline Multiferroic BiFeO₃ A. Murkherjee, SK. M. Houssain, S. Basu and **M. Pal**, *AIP Con. Proc.* **1447** (2012) 315.
- 124) Phase Transformation Study of Nd: YAG Laser Ablated TiO₂ Thin Film. **M. Pal**, T. Sasaki and N. Koshizaki, 3rd NIMC International Symposium on Photoreaction Control and Photo functional Materials (PCPM) (2000) 160.
- 125) Crystallization of laser ablated TiO₂ thin film, **M. Pal**, T. Sasaki and N. Koshizaki, 2nd NIMC International Symposium on Photoreaction Control and Photo functional Materials (PCPM) (1999) 185.
- 126) Electrical and optical properties of Gd-doped bismuth ferrite nanoparticles. A.Mukherjee, M. Banerjee, S.Basu and **M. Pal**, *AIP Con. Proc.*, **1591** (2014) 1339.
- 127) Nanocomposite based gas sensor for non-invasive monitoring of diabetes from exhale breath. **M. Pal***, *Proc. Of Intl. Con. On Nanotechnology for Better Living*, 2016, Vol 3, No. 1, pp. 249. doi:10.3850/978-981-09-7519-7nbl16-rps-249.

Book (chapter contributed)

- 128) Superplastic Nanoceramics
M. Pal and D. Chakravorty, *Encyclopedia of Nanoscience and Nanotechnology*, American Scientific publishers , **10** (2004) 237.
- 129) Borate based Nanocrystalline Magnetic Semiconductor above room temperature. **M. Pal***, *Tata McGraw Hill*, (2004) 421.
- 130) Nanocomposite with core-shell structure,
D. Chakravorty, D. Das K. Chatterjee, S. Banerjee and **M. Pal**, *Inorganic Materials Recent Advances*, Narosa Publishing House, New Delhi, (2004) 316
- 131) Effect of iron substitution on nanocrystalline CaTiO₃
S. Mondal, H. Dutta, S.K. Pradhan and **M. Pal***, *“Dielectrics and Ferroelectrics: Modern Perspectives”* 2008.
- 132) Polymer-iron Oxide Based Magnetic Nanocomposites.
M. Pal and A. De, *Hybrid Nanocomposites for Nanotechnology*, Edited by L. Merhari, **Springer**, 2009, page 455.

PLENARY /KEYNOTE /INVITED TALK DELIVERED

- 1) Fourth International Conference on Material Science (ICMS-2024)” during 31st Jan., – 2nd Feb., 2024, Tripura University.
- 2) “International Conference on Emerging Multifunctional Materials and Devices for Sustainable Technologies (IEMDST-2024)” hosted by Department of Physics, National Institute of Technology (NIT), Warangal, India.
- 3) Delivered Keynote talk in International Conference on Processing and Characterization of Materials on 5-7th December 2024, NIT Rourkella.
- 4) Invited Talk delivered in one day Symposium on "Sensors for Society" JNU, Delhi , 2023.
- 5) Deliver talk as a Resource person in Refresher Course entitled with “Contemporary Issues of Nanoscience and Nanotechnology”, Jadavpur University, January, 2023 (Online mode)
- 6) Deliver talk as a Resource person in Refresher course in Chemistry at University of Calcutta, December, 2022 (Online mode)
- 7) Invited talk delivered in 4th International conference on Sensors and Transducers UEMCOS2022, September, 2022
- 8) Invited Talk delivered in 29th National Conference on Condensed Matter Physics - Condensed Matter Days (CMDAYS21) during December 10-12, 2021 organized by Central University of Jharkhand.
- 9) Invited Talk delivered in 65th DAE Solid State Physics Symposium (DAE-SSPS 2021) during December 10-12, 2021 organized by BARC , Mumbai.
- 10) Keynote speaker in “Diabetes Conclave 2021” Global Virtual Summit on Diabetology and Endocrinology on 8th March, 2021.
- 11) Invited talk delivered in “India – Russia Scientific Webinar on Materials Science on New materials and Nanotechnology” during 9-10 December, 2020, organized by Embassy of India, Moscow.
- 12) Invited Talk delivered in XII biennial National Conference of Physics Academy of North East (PANE 2021) during 15-17 December, 2021, organized by Tripura University.
- 13) Plenary talk delivered in “International conference on nanomaterials driven advances in chemical and biosensors (NanoSe 2019)”, at Alagappa University, 2019
- 14) Plenary lecture delivered in “International conference on nanomedicine (ICON-2019)” at Madurai Kamraj University, 2019.
- 15) Plenary lecture delivered in a Workshop on “Fabrication of Optoelectronics devices and Sensors Hands-on-Experience” at NIT Warangal, 2019.
- 16) Delivered Invited talk in International Conference on Materials Science (ICMS-2020), at Tripura University.
- 17) Delivered Invited talk in International Conference on “Synthesis, Characterization and Application of Nanomaterials (SCAN 2019)” during 1-2 Nov, 2019 at Kolkata, Organized by IEL.
- 18) Delivered Invited talk in International Conference on Recent Advances in Chemical, Pharmaceutical and Life processes (RACPL-2019) at Andhra University.
- 19) Delivered Invited talk in Industry-Institute Interaction meet at NIT, Durgapur held on 13th August, 2019.
- 20) Delivered invited talk in 4th International Conference on Nanoscience and Nanotechnology (NanoAfrica 2012), During 1-4th April, 2012 at Bloemfontein, South Africa.

- 21) Delivered invited talk in 7th BANGALORE NANO 2014, India.
- 22) Delivered invited talk in International conference on Nanoscience and Nanotechnology “ICONN-2015” Chennai, India.
- 23) Delivered invited talk in International Conference on Nanoscience, Engineering and Technology (ICONSET-2011), India.
- 24) Delivered **MRSI Award lecture** at NEIST, Jorhat during MRSI symposium – 2016.
- 25) Delivered invited talk in International conference on Nanoscience and Nanotechnology (NanoSciTech 2012) at Punjab University, Chandigarh, India, 2012.
- 26) Delivered invited talk in 21st International symposium on Processing and Fabrication of advanced materials (PFAM21), IITG, 2012.
- 27) Delivered invited talk in 3rd International conference on “Recent Advances in Materials Processing Technology “RAMPT-13” Tamilnadu, India.
- 28) Delivered invited talk in “International conference on Materials Science (ICMS2013)” at Tripura University, 2013.
- 29) Delivered invited talk in International Workshop on “Futuristic Materials: Characterization, Properties and Applications in Technology FMCPAT-2014” Rohilkhand University, UP, India.
- 30) Delivered invited talk in 4th International conference /workshop on computational condensed matter physics and materials science (IWCCMP-2016), Gwalior, India.
- 31) Delivered invited talk on “Nanostructured Metal Oxide Semiconductor based Gas Sensors for Healthcare” by Mrinal Pal, 2nd International on Materials Science (ICMS 2017), organized by Tripura University during 16-18 February.
- 32) Delivered Invited talk in International Conference on Nanotechnology (ICN:31 -2017) at IIT Roorkee, during 6-8th December, 2017.
- 33) Invited talk delivered in 1st International conference on ubiquitous and emerging concepts on sensors & transducers UEMCOS2019, University of Engineering and Management, 2019.
- 34) Delivered invited talk on “Magnetic Nanocomposites” at S. N. College, Kolkata, 2006.
- 35) Delivered invited talk on “Nanostructured Materials” at St. Edmond College, Shilong, India, 2007.
- 36) Delivered invited talk on “Magnetism and magnetic Materials” at Ramananda College, Bishnupur, W.B., India, 2008.
- 37) Delivered invited talk on “Magnetic materials and its applications” at Govt. College of Textile Engineering, Serampore, W.B., India, 2008.
- 38) Delivered invited talk on “Nanoscience and Nanotechnology” at Barasat Govt. College, 2009.
- 39) Deliver lecture in National Symposium of Nanoscience and Technology (NANOSTech 2011), Kerala.
- 40) Deliver lecture in 6th National Conference on Thermophysical Properties (NCTP-2011) at BHU, India.
- 41) Deliver lecture in a National Conference on Recent Trends of Research in Physics, Tripura University, 2012.
- 42) Delivered talk in “Second National Seminar on Recent Trends in Condensed Matter Physics including Laser Application (SNSCMPLA 2012)”, Burdwan University, 2012.
- 43) Delivered presentation in “National conference on Innovative molecules for sustainable future (NCIMSF-2013)”, Thappar University.
- 44) Deliver invited lecture in National conference on Microwave communication and devices at Vidyasagar University, 2014

- 45) Delivered presentation in “National workshop on “Physics of Low Dimensional Structures (PLDS-2015)” at Vidyasagar University.
- 46) Invited talk in “Advanced Nanomaterials: Characterizations and Applications (WANCA-2015)” during Nov., 2015, BHU, India.
- 47) Invited Talk in “Advanced Materials & Nanotechnology (AMN-2016), Durgapur, India.
- 48) Invited Talk in “National Symposium on Advances in Chemical Sciences (NSACS-2017)” Organized by Assam University, Silchar – 2017.

Resource person:

- 49) Resource person of “Refresher Course in Advances in Nano-Science and Nano-Technology”, conducted by the UGC – Human Resource Development Centre, The University of Burdwan from 26.11.2021 to 09.12.2021.
- 50) Delivered a presentation as a Resource Person in Faculty development program (FDP) at National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh on 24th September, 2020.
- 51) Delivered lecture in National Workshop on Quantum Perspective on Advanced Materials (QPAM-11) at Vidyasagar University 2011.
- 52) Delivered talk in “Workshop on Advanced Functional Materials”, NIT Durgapur, 2013.
- 53) Delivered presentation in “Workshop on Nanomaterials: Synthesis, Characterization and Applications”, NIT Durgapur, 2014.
- 54) Delivered presentation in Refresher course on “Thin films and Nanoscience” at Tripura University, 2015.
- 55) Delivered presentation in “2nd Refresher course on Nanoscience and Nanotechnology” during August, 2015 at The University of Burdwan.
- 56) Delivered presentation in Short term course on “Advanced Materials and Processing (AMP-2017)” Organised by Department of Physics, NIT Durgapur, 2017.
- 57) Invited talk delivered in “National workshop on emerging sensor technologies” organized by Department of Nanoscience and Nanotechnology, Bharathiar University, Coimbatore, 2019.
- 58) Invited talk delivered in a Refresher course organised by Faculty Development Council of Tripura University on 1st March, 2019.
- 59) Invited talk delivered in Short term course on “Fundamentals and recent advances in nanomaterials (FRAN-2019)” at NIT, Durgapur.

Popular lecture:

- 60) Deliver lecture on “Renewable energy for sustainable future” in a science camp on “Vigyan O Amra” organized by JBNSTS, 2014.
- 61) Deliver lecture on “Semiconductor nanostructured based breath sensor towards human health monitoring” in International Conference on Material Science (ICMS2024) organized by Tripura University.
- 62) Deliver lecture on “Semiconductor nanostructured based gas sensors towards healthcare application” in Physicists’ Conclave 2024 (NPC 2024) organized by SRM Institute of Science and Technology.

- 63) Deliver lecture on “Semiconductor nanostructured based gas sensor for affordable healthcare” 29th International Conference on Processing and Fabrication of Advanced Materials (PFAM-XXIX Sep 2023) organized by IIT Tirupati.
- 64) Deliver lecture on “Breath sensor towards improve healthcare” in International Conference on Translational Research (ICTR) *organized by* AIIMS, New Delhi.
- 65) Deliver lecture on “Superstition and science” in an awareness camp 2014.
- 66) Deliver lecture on “Renewable energy” in a science awareness camp in 2013.
- 67) Deliver lecture on Magnetism, Magnetic materials and Application, Vidyasagar College for Women, Kolkata, 2013.
- 68) Deliver lecture on “Introduction to Nanoscience and nanotechnology” 2007.

Technical Session Chaired / Chairperson / Honourable judge:

1. 4th International conference on Nanoscience and Technology (NanoAfrica 2012), Suoth Africa.
2. National conference on Recent Trends of Research in Physics, 2012, Tripura University, India.
3. 21st International symposium on Processing and Fabrication of advanced materials (PFAM21), IITG, 2012.
4. National conference on Innovative molecules for sustainable future (NCIMSF-2013), Thappar Univiersity.
5. National Conference on Nanotechnology: Materials and Applications (NCoN:M&A) – 2016.
6. National Conference on Characterization of Nanomaterials – 2016, Ramananda College, Bishnupur, West-Bengal.
7. “National Symposium on Advances in Chemical Sciences (NSACS-2017)” Organized by Assam University, Silchar – 2017.
8. 2nd International on Materials Science (ICMS 2017), organized by Tripura University during 16-18 February.
9. International Conference on Nanotechnology (ICN:31 -2017) at IIT Roorkee, during 6-8th December, 2017.
10. 125th Birth Anniversary of Satyendra Nath Bose Bose Tagore National Advanced Workshop on “Recent Advances in Condensed Matter Physics: Theory and Experiment” (NAWCMP - 2018), Visva-Barati, India.
11. Act as a Judge to evaluate e-poster in NCRDNN 2019 at Jadavpur University during 29th January, 2019.
12. Technical session chaired at ICONSAT-2020.
13. Technical session chaired at Vidyasagar - Satyendranath Bose National Workshop 2023.

Organizers/ Member of Important Committees:

- 1) Secretary, National Workshop on Advanced Laser and Nanomaterials (**NWALNM 2005**), India.
- 2) Secretary, National Workshop on Characterization of Laser and Nanomaterials (**NWCLNM 2006**), India.
- 3) Secretary, Third National Workshop on Characterization of Laser and Nanomaterials (**TNWCLNM 2007**), Burdwan, India.
- 4) Secretary, Fourth National Workshop on Characterization of Laser and Nanomaterials (**FNWCLNM 2007**), Burdwan, India.
- 5) Jt. Secretary, International conference on “Radiation Physics and Applications (**ICRPA-2010**)” at Burdwan, India.
- 6) Jt. Organizing Secretary, National Symposium on Advanced Functional Materials- (**NSAFM-2013**)” at Central Mechanical Engineering Research Institute, India.
- 7) Convener of One day Awareness Program on **ISO 9001: 2015**.
- 8) Organizing Secretary, **31st MRSI-AGM cum 2nd Conclave, 2020**.
- 9) Organizing committee member, **ICOSAT-2020**.
- 10) **Chairman** of MRSI-YSC-2022, Organized by MRSI Kolkata Chapter.