

CURRICULUM VITAE

Associate Professor and Head of the Department
Department Applied Physics,
Defence Institute of Advanced Technology (DIAT)
Girinagar, Pune, India
Email: suwarna.datar@gmail.com, suwarnadatar@diat.ac.in
Phone: +919011024935
Website: <https://www.suwarnadatar.com/>



Suwarna Datar

Education

- BSc Physics, S P College, University of Pune, India (1995)
- MSc Physics, University of Pune, India (1997)
- PhD in Physics with topic “Investigation of nanostructured materials using scanning tunnelling microscopy/spectroscopy and related techniques” University of Pune, India (2005)
- Post Doctorate at IISC Bangalore 2005

Research Interest/Research profile

- EMI shielding and stealth composites
- Chemical Biological Warfare agent sensors
- Sensors for disease diagnostics using breath biomarkers
- Material analysis using Scanning Probe Microscopy and spectroscopy techniques

Projects Undertaken

1. Co-investigator in project entitled “Autonomous navigation and Orbit Determination of Satellite using onboard GPS” funded by ISRO.
Duration: 2007-2010
2. Principal Investigator Young Scientist Fast track project funded by Department of Science and Technology, government of India, for doing research on the topic “Study of Different Parameters Responsible for Self-Assembly of Nanoparticles.”
Duration: 2008-2011
3. Co-Investigator and Work Plan Investigator in DIAT DRDO program on nanomaterials
Duration: (2012-18)
4. Principal investigator in project sponsored by DST-nanomission on Theoretical and experimental studies on magnetic properties of functionalized graphene nanoribbon
Duration: 2016-20
5. Principal investigator in project sponsored by DIAT on Detection of VOCs for Breath analysis for ARDS: August 2020-Nov 2020

Award/Prize/Certificate

1. Technology Day Oration Award 2010, DIAT-DRDO
2. Best Teacher of the year, 2012, DIAT
3. Certificate of Appreciation for student’s first prize in ISSS student award in PG category in year 2014.
4. IOP Publishing India top cited Award: Materials 2018-21
5. Fellow of Maharashtra Academy of Science 2020

List of Publication in International Journals:

1. Ultrasonically assisted solvothermal synthesis of nanocrystalline Zn-Ni ferrite advanced material for EMI shielding, Hema Singh, Saurabh Parmar, Bishakha Ray, Vinod Kumar Lokku, Deepak Kumar, K. Lakshmi Bhavani, D. Nagaraju, Dai-Viet N. Vo, Ajit Sharma, Suwarna Datar, Shaibal Banerjee, *Journal of Alloys and Compounds* 906 (2022) 164199
2. Detection of trace volatile organic compounds in spiked breath samples: a leap towards breathomics, Bishakha Ray, Saurabh Parmar, Varsha Vijayan, Satyendra Vishwakarma and Suwarna Datar, *Nanotechnology* 33 (2022) 205505
3. Polymer Modified Quartz Tuning Fork (QTF) Sensor Array for Detection of Breath as a Biomarker for Diabetes, S Parmar, B Ray, S Viswakarma, S Rath, S Datar, *Sensors & Actuators: B. Chemical* 358 (2022) 131524
4. Performance enhancement of Scanning Electron Microscope using a Deep Convolutional Neural Network, Suresh Panchal, Unnikrishnan Gopinathan and Suwarna Datar, *Measurement Science and Technology*, <https://doi.org/10.1088/1361-6501/ac4a19>, 2022
5. N, H Dual-Doped Black Anatase TiO₂ Thin Films toward Significant Self-Activation in Electrocatalytic Hydrogen Evolution Reaction in Alkaline Media, S Parmar, T Das, B Ray, B Debnath, S Gosavi, GS Shanker, S Datar, S B Ogale, *Advanced Energy and Sustainability Research* 3 (1), 2100137, 2022
6. Miniaturization of transition metal hydroxides to hydroxide dots: A direction to realize giant cyclic stability and electrochemical performance, V Kumar, S Datar, HS Panda, *International Journal of Energy Research* 45 (14), 20356-20371 2021
7. Detection of binary and ternary mixtures of volatile organic compounds using quartz tuning fork based sensor array, S Parmar, B Ray, S Datar, *Sensors and Actuators A: Physical* 332, (2021) 113198
8. Development of a polymer modified Quartz Tuning Fork (QTF) sensor array based Volatile Organic Compound (VOC) classifier, Suresh Panchal, Apoorva Phadke, Unnikrishnan Gopinathan, Suwarna Datar *IEEE Sensors*, 10.1109/JSEN.2021.3099537, 2021
9. Metamaterial Microwave Absorber (MMA) for Electromagnetic Interference (EMI) Shielding in X-Band, Ramesh Kumar Mishra, Ravi Dutt Gupta, Suwarna Datar, *Plasmonics*, *Plasmonics* 16 (6), 2061-2071, 2021
10. Stabilizing Metastable Polymorphs of van der Waals Solid MoS₂ on Single Crystal Oxide Substrates: Exploring the Possible Role of Surface Chemistry and Structure, Swati Parmar, Abhijit Biswas, Bishakha Ray, Suresh Gosavi, Suwarna Datar, Satishchandra Ogale, *J. Phys. Chem. C* 125, 20, 11216–11224, 2021
11. Optically transparent polymer composites: A study on the influence of filler/dopant on electromagnetic interference shielding mechanism, B Ray, S Parmar, K Date, S Datar *Journal of Applied Polymer Science* 138 (16), 50255, 2021
12. Wideband (8–18 GHz) microwave absorption dominated electromagnetic interference (EMI) shielding composite using copper aluminum ferrite and reduced graphene oxide in polymer matrix, Sanghamitra Acharya and Suwarna Datar, *J. Appl. Phys.* 128, 104902 2020.
13. Nanocomposite engineered carbon fabric-mat as a passive metamaterial for stealth application , RP Magisetty, AB Raj, S Datar, A Shukla, B Kandasubramanian, *Journal of Alloys and Compounds* 848, 155771, 2020.
14. Co/Co₃O₄ Based Nanoparticles and Their Polymer Composites for Tuned Electromagnetic Interference Shielding Application, M Tiwari, MA Arya, PV More, S Parmar, S Datar, PK Khanna, *Journal of nanoscience and nanotechnology* 20 (5), 2847-2857, 2020.
15. Nickel Nanoparticle-Filled High-Performance Polymeric Nanocomposites for EMI Shielding Applications, SV Dravid, SD Bhosale, S Datar, RK Goyal, *Journal of Electronic Materials* 49 (3), 1630-1637, 2020.
16. Coexisting 1T/2H polymorphs, reentrant resistivity behavior, and charge distribution in MoS₂-hBN 2D/2D composite thin films, Swati Parmar, Abhijit Biswas, Sachin Kumar Singh, Bishakha Ray, Saurabh Parmar, Suresh Gosavi, Vasant Sathe, Ram Janay Choudhary, Suwarna Datar and Satishchandra Ogale, *physical review materials* 3, 074007 (2019)
17. Modified Graphene as a Conducting Ink for EMI Shielding, Saurabh Parmar, Bishakha Ray, Kalyani Shrikant Date, Suwarna Datar, *Journal of Physics D Applied Physics* 52(37), 2019

18. Magnetic force microscopic analysis and the magnetoelectric sensor of PLZT - spinel ferrite composite films, Ashwini Datar, Bishakha Ray, Suwarna Datar, Vikas Mathe *Journal of Magnetism and Magnetic Materials* DOI: 10.1016/j.jmmm.2019.165373, 2019
19. Effect of Formation of Heterostructure of SrAl₄Fe₈O₁₉/RGO/PVDF on the Microwave Absorption Properties of the Composite, Sanghamitra Acharya, Prashant Alegaonkar, Suwarna Datar, *Chemical Engineering Journal* 374, 144–154 2019
20. Design and Development of 4-MJ Capacitor Bank-Based Pulsed Power System for Electromagnetic Launcher, V. Pradeep Kumar, Satyam Swarup, Shivam Rajput, Suwarna Datar, *IEEE Transactions on Plasma Science* PP(99):1-9 2019
21. Hydroxyapatite nanorods loaded with parathyroid hormone (PTH) synergistically enhance the net formative effect of PTH anabolic therapy, Jay R Dave, Ankush M Dewle, Suhas T Mhaske, Prashant T Phulpagar, Vikas L Mathe, Supriya E More, Ayesha A Khan, Appala Venkata Ramana Murthy, Suwarna S Datar, Ajay J Jog, Megha Page, Geetanjali B Tomar, *Nanomedicine: Nanotechnology, Biology and Medicine* 15 (1) 218-230 2019.
22. Enhanced microwave absorption property of Reduced Graphene Oxide (RGO)–Strontium Hexaferrite (SF)/Poly (Vinylidene) Fluoride (PVDF), Sanghamitra Acharya, Chinnakonda S Gopinath, Prashant Alegaonkar, Suwarna Datar, *Diamond and Related Materials*, 89, 28-34, 2018.
23. Quartz tuning fork based sensor for detection of volatile organic compounds: towards breath analysis, Abraham Sampson, Suresh Panchal, Apoorva Phadke, A Kashyap, Jilma Suman, G Unnikrishnan, Suwarna Datar, *Materials Research Express*, 5(4), 045407, 2018
24. Investigation of dielectric properties of free standing electrospun nonwoven mat, Jitendra Tahalyani, Suwarna Datar, Kandasubramanian Balasubramanian, *Journal of Applied Polymer Science*, 135 (16), 46121 2018
25. Investigation of Disorder in Mixed Phase, sp²–sp³ Bonded Graphene-Like Nanocarbon, Sumati Patil, Sadhu Kolekar, Arvind Kumar, Prashant Alegaonkar, Suwarna Datar, CV Dharmadhikari *Journal of nanoscience and nanotechnology* 18 (4), 2504-2512, 2018.
26. Temperature Dependent Electron Transport Properties of Gold Nanoparticles and Composites: Scanning Tunneling Spectroscopy Investigations, Sumati Patil, Suwarna Datar, CV Dharmadhikari, *Journal of nanoscience and nanotechnology*, 18(3), 1626-1635, 2018.
27. Microwave absorption properties of reduced graphene oxide strontium hexaferrite/poly (methyl methacrylate) composites, Sanghamitra Acharya, J Ray, TU Patro, Prashant Alegaonkar, Suwarna Datar, *Nanotechnology*, 29 (11) 2018.
28. Correlation between the magnetic-microstructure and microwave mitigation ability of M_xCo_(1-x)Fe₂O₄ based ferrite–carbon black/PVA composites, Gopal Datt, Chetan Kotabage, Suwarna Datar, Ashutosh C Abhyankar, *Physical Chemistry Chemical Physics*, 20 (41), 26431-26442, 2018.
29. Observation of magnetism in La_{0.7}Sr_{0.3}MnO₃—graphene nanoribbons complex: a probable magnetoelectronic material study, Anupama Joshi, Sangeeta Kale, Suwarna Datar, *Materials Research Express* 4(7):075050, 2017
30. Structural and electronic investigation of metal-semiconductor hybrid tetrapod hetero-structures, Krishna Kanta Halder, Vijaykumar Yogesh Muley, Suwarna Datar, Amitava Patra, *Gold Bull* DOI 10.1007/s13404-017-0198-8 (2017).
31. Quartz tuning fork based portable sensor for vapour phase detection of methanol adulteration of ethanol by using aniline-doped polystyrene microwires, S Abraham Sampson, Suresh Vajinath Panchal, Atul Mishra, Shaibal Banerjee, Suwarna S Datar, *Microchim Acta* (2017) 184:1659–1667.
32. Study of Modification of Photo Active Material with Carbon Nanostructures for Polymer Solar Cell Applications, S Sahare, P Ghoderao, A Dey, S Datar, T Bhawe *Materials Today Communications*, DOI 10.1016/j.mtcomm.2017.06.001 2017.
33. Nano-carbon: Preparation, assessment, and applications for NH₃ gas sensor and electromagnetic interference shielding, Ashok D. Ugale, Resham V. Jagtap, Dnyandeo Pawar, Suwarna Datar, Sangeeta N. Kale and Prashant S. Alegaonkar, *RSC Adv.*, 2016, 6, 97266
34. An attempt to correlate surface physics and chemical properties : Molecular beam and Kelvin probe investigations of Ce_{1-x}Zr_xO₂ thin films, *Physical Chemistry Chemical Physics*, 18(39) 2016
35. Dielectric investigation of conducting fibrous nonwoven porous mat fabricated by one-step facile electrospinning process, Jitendra Tahalyani, Khushbu K. Rahangdale, Radhamanohar Aepuru, Balasubramanian Kandasubramanian and Suwarna Datar, *RSC Advances*, 6 36588, 2016.

36. Decoration of gold nanoparticles on thin multiwall carbon nanotubes and their use as a glucose sensor, Rajesh K Gangwar, Vinayak A Dhumale, Kalyani S Date, Prashant Alegaonkar, Rishi B Sharma and Suwarna Datar, *Mater. Res. Express* 3 (2016) 035008
37. Electromagnetic interference shielding in 1–18 GHz frequency and electrical property correlations in poly(vinylidene fluoride)–multi-walled carbon nanotube composites, G. Sudheer Kumar, D. Vishnupriya, Anupama Joshi, Suwarna Datar and T. Umasankar Patro, *Phys.Chem.Chem.Phys.*, 2015, 17, 20347.
38. Photon assisted conducting atomic force microscopy study of nanostructured additives in P3HT:PCBM, Sanjay Sahare, Naresh Veldurthi, Suwarna Datar and Tejashree Bhawe, Photon assisted conducting atomic force microscopy study of nanostructured additives in P3HT:PCBM Sanjay Sahare, Naresh Veldurthi, Suwarna Datar and Tejashree Bhawe, *RSC Adv.*, 2015, 5, 102795.
39. Preparation of Ni₃S₂ and Ni₃S₂–Ni Nanosheets via Solution Based Processes Balanagulu Busupalli, Kalyani Date, Suwarna Datar, and Bhagavatula L. V. Prasad, *Crystal Growth & Design* 15 (6), 2584-2588, 2015
40. Curcumin-Loaded, Self-Assembled Aloe vera Template for Superior Antioxidant Activity and Trans-Membrane Drug Release, R Kitture, S Ghosh, PA More, S Gaware, S Datar, BA Chopade, SN Kale *Journal of nanoscience and nanotechnology* 15 (6), 4039-4045, 2015.
41. Carbon nanostructure composite for electromagnetic interference shielding, Anupama Joshi and Suwarna Datar, *Pramana- J of physics* Vol. 84, No. 6 2015, 1099–1116.
42. Investigation of QTF Based Gas Sensors, S Abraham Sampson, Kalyani Date, Ajit Ambrale, Suresh Panchal, Suwarna Datar, *Sensors and Actuators B* 216 (2015) 586–594
43. Hysteretic DC electrowetting by field-induced nano-structurations on polystyrene film, Suwarna Datar, Satishchandra B Ogale, Arun G. Banpurkar, *Soft Matter*, 2015, 11, 2655
44. Processing of graphene nanoribbon based hybrid composite for electromagnetic shielding, Anupama Joshi, Anil Bajaj, Rajvinder Singh, Anoop Anand, P.S. Alegaonkar, Suwarna Datar, *Composites B* 69, 2015, 472.
45. Grain boundary engineering of La_{0.7} Sr_{0.3} MnO₃ films on silicon substrate: Scanning Tunneling Microscopy-Spectroscopy study, Anupama Joshi, Rajashree Nori, Sandip Dhobale, V. Ramgopal Rao, S.N. Kale, Suwarna Datar, *Physica B* 448, 2014, 85.
46. Graphene nanoribbon–PVA composite as EMI shielding material in the X band, Anupama Joshi, Anil Bajaj, Rajvinder Singh, P S Alegaonkar, K Balasubramanian and Suwarna Datar, *Nanotechnology* 24 (2013) 455705
47. Curcumin conjugated silica nanoparticles for improving bioavailability and its anticancer applications, Rajesh Kumar Gangwar, Geetanjali B Tomar, Vinayak Appasaheb, Dhumale, Smita Sachin Zinjarde, Rishi B Sharma, and Suwarna Datar, *Journal of Agricultural and Food Chemistry*, 2013, 61 (40), pp 9632–9637.
48. Catalytic activity of allamanda mediated phytosynthesized anisotropic gold nanoparticles, Rajesh K Gangwar, Vinayak A Dhumale, S W Gosavi, Rishi B Sharma and Suwarna S Datar, *Adv. Nat. Sci.: Nanosci. Nanotechnol.* 4 (2013).
49. Graphene-Like-Nanocarbon—Polyaniline Composite as Supercapacitor Anupama Joshi, Arvind Kumar, P. S. Alegaonkar, and Suwarna Datar *Energy and Environment Focus* Vol. 2, pp. 1–5, 2013.
50. Charge storage and electron transport properties of gold nanoparticles decorating urethane-methacrylate comb polymer network, S Patil, R Narayan, SK Asha, CV Dharmadhikari, Suwarna Datar, *Nanoscale*, 2013,5, 4404-4411 (2013).
51. Mixed phase, sp² sp³ bonded, and disordered few layer graphene–like nanocarbon: Synthesis and characterizations A Kumar, S Patil, A Joshi, V Bhoraskar, Suwarna Datar, P Alegaonkar, *Applied Surface Science*, 271, 86 (2013).
52. Conjugation of curcumin with PVP capped gold nanoparticles for improving bioavailability, RK Gangwar, VA Dhumale, D Kumari, U Nakate, SW Gosavi, RB Sharma, SN Kale, Suwarna Datar, *Materials Science and Engineering: C* 32, issue 8, 2659 (2012).
53. Lithium niobate nanoparticulate clad on the core of single mode optical fiber for temperature and magnetic field sensing CN Rao, A Bharadwaj, Suwarna Datar, S N Kale *Applied Physics Letters* 101 (4), 043102-043102-4 (2012).

54. Gold Nanoparticles Based Ultrasensitive Colorimetric Sensor for Cd²⁺ Ions VA Dhumale, RK Gangwar, Suwarna Datar, RB Sharma, *Advanced Science, Engineering and Medicine* 5 (5), 409-413 (2013).
55. Reversible Aggregation Control of Polyvinylpyrrolidone Capped Gold Nanoparticles as a Function of pH VA Dhumale, RK Gangwar, Suwarna Datar, RB Sharma, *Materials Express* 2 (4), 311-318 (2012).
56. Water Adsorption on Oxygen Passivated Silicon Nanoparticles, Ch. Rajesh, Sumati Patil, Suwarna Datar, D. Bhattacharyya, A. K. Tripathi, Shailaja Mahamuni, C. V. Dharmadhikari, and S. V. Ghaisas, *Nanoscience and Nanotechnology Letters* Vol. 3, 1–7, 2011.
57. Growth Mechanism of Cadmium Sulfide Nanocrystals *J. Phys. Chem. Lett.*, 2010, 1 (1), pp 304–308, Ranjani Viswanatha, Heinz Amenitsch, Sanjita Rani Santra, Sameer Sapra, Suwarna S. Datar, Yu Zhou, Saroj K. Nayak, Sanat K. Kumar and D. D. Sarma, *Growth Mechanism of Cadmium Sulfide Nanocrystals, J. Phys. Chem. Lett.* 1, 304 - 308 (2010).
58. Scanning Tunneling Microscopy / Spectroscopy on Au nanoparticles assembled using Lauryl Amine (LAM) and Octadecane thiol (ODT), Suwarna Datar, Minakshi Chaudhari, Murali Sastry and C. V. Dharmadhikari, *App. Surf. Sci.* 253, 5109 (2007).
59. Self organization of polyaniline nanorods: Towards achieving a higher conductivity, Debangshu Chaudhuri, Suwarna Datar, Ranjani D. Sarma, *App. Phys. Lett.* 87, 093117 (2005). Also Published in virtual journal of nanotechnology.
60. Scanning Force Microscopy and Spectroscopy of single crystal oxide surfaces, Suwarna Datar, Shivprasad Patil, S. B. Iyyer and C. V. Dharmadhikari, *Surface and Interface Analysis*, 36, 213 (2004).
61. Scanning Tunneling Microscopy/Spectroscopy on Titanium dioxide nanoparticulate film on Au (111) surface, Suwarna Datar, Murali Sastry and C. V. Dharmadhikari, *Colloids and Surfaces A*, 232, 11 (2004).
62. Linear superclusters of colloidal gold particles by electrostatic assembly on DNA templates, A. Kumar, M. Pattarkine, M. Bhadbhade, A. B. Mandale, K. N. Ganesh, Suwarna Datar, C. V. Dharmadhikari and Murali Sastry, *Adv. Mater.*, 3(5), 341 (2001).
63. DNA mediated electrostatic assembly of gold nanoparticles into linear arrays by a simple drop coating procedure, Murali Sastry, Ashavani Kumar, Suwarna Datar, C. V. Dharmadhikari, Krishna N. Ganesh, *App. Phys. Lett.*, 78, 2943 (2001). Also published in virtual journal of nanotechnology.

Publication in Conference Proceedings

1. Gold-graphene nanocomposite based ultrasensitive electrochemical glucose sensor RK Gangwar, VA Dhumale, A Kumar, P Alegaonkar, RB Sharma, Suwarna Datar, *IEEE Explore, Physics and Technology of Sensors (ISPTS)*, (2012) 10.1109/ISPTS.2012.6260947
2. QTF Based Methanol Sensors, S Abraham Sampson, Suresh Vajinath Panchal, Kalyani S Date and Suwarna S Datar, *Proceedings of the 2015 2nd International Symposium on Physics and Technology of Sensors*, 8-10th March, 2015, Pune, India.
3. SrAl₄Fe₈O₁₉ hexaferrite and reduced graphene oxide: For microwave absorption application, Sanghamitra Acharya, Prashant Alegaokar, Suwarna Datar, *Research Interest, AIP Conference Proceedings* 2115(1):030145, 2019
4. Metamaterial Absorber (MMA) In X-Band, For Stealth Applications, R. K. Mishra, Ravi Dutt Gupta, Suwarna Datar, March 2019 DOI: 10.23919/URSIAP-RASC.2019.8738345 Conference: 2019 URSI Asia-Pacific Radio Science Conference (AP-RASC)
5. Optically Transparent EMI Shielding Nanocomposite for X band, Saurabh Parmar, Bishakha Ray, Kalyani Shrikant Date, Suwarna Datar March 2019, DOI: 10.23919/URSIAP-RASC.2019.8738296 Conference: 2019 URSI Asia-Pacific Radio Science Conference (AP-RASC)
6. Polymer-Modified Quartz Tuning Forks for Breath Biomarker Sensing, Bishakha Ray, Shrut Manoj Desai, Saurabh Parmar and Suwarna Datar, Presented at the 8th International Symposium on Sensor Science, 17–26 May 2021; Available online: <https://i3s2021dresden.sciforum.net/>
7. Detection of Breath Biomarkers for Alzheimer's and Parkinson's Disease Using Quartz Tuning Fork-Based Gas Sensors, Saurabh Parmar, Bishakha Ray and Suwarna Datar Presented at the 8th

International Symposium on Sensor Science, 17–26 May 2021; Available online: <https://i3s2021dresden.sciforum.net/>

8. Metabolic Rate Monitoring Using Quartz Tuning Fork-Based Sensors, Saurabh Parmar, Bishakha Ray and Suwarna Datar Presented at the 8th International Symposium on Sensor Science, 17–26 May 2021; Available online: <https://i3s2021dresden.sciforum.net/>

9. Performance Analysis of Absorption Properties of Sugarcane Bagasse on Addition of Activated Charcoal, G Verma, S Datar, KP Ray, 2021 IEEE MTT-S International Microwave and RF Conference (IMARC), 1-4.

Book Chapter

1. Flexible and Transparent EMI Shielding Materials, Bishakha Ray, Saurabh Parmar, Suwarna Data, Advanced Materials for Electromagnetic Shielding: Fundamentals, Properties, and Applications, 167-175, John Wiley & Sons, Inc. 2018.

Conferences/Workshops/Invited talks

1. Invited speaker in FDP on Photonics (Active Learning in Optics and Photonics) organized by Department of Physics, Electronics and Photonics, Rajarshi Shahu Mahavidyalaya (Autonomous) Latur, Maharashtra, India during 03rd to 07th November 2020 on topic Blue Sky and Red Sunset.
2. Invited speaker in FDP on Lab on Chip organized by Defence Institute of Advanced Technology(DU), Pune, during 14/12/2020 to 18/12/2020 on topic Development of e-nose on Breathomics.
3. Invited talk in Workshop on Atomic Force Microscopy Beyond Topography: Advances in AFM Characterization, Indian Institute of Technology Bombay, Mumbai, July 17, 2019.
4. Oral presentation at on Optically Transparent EMI Shielding Nanocomposite for X band, at URSI AP-RASC 2019, New Delhi, India, 09 - 15 March 2019.
5. Invited talk in National Workshop on Advanced Material Characterization Techniques organized by Department of Physics Osmania University on 31st August 2018.
6. Invited talk in 33rd National Convention of Aerospace Engineers and National Conference on Emerging Technologies in Aerospace Structures, Materials and Propulsion Systems, Nov 16-17, 2019 on “Microwave Absorber in X Band for Stealth Application”.
7. Invited talk in 25th Raman Memorial Conference, 14th -15th Feb 2019, Department of Physics, SPPU, Pune on “Scanning Probe Microscopy Studies of 2D Materials”
8. Invited talk in FDP- “Nanomaterials-Synthesis, Properties and Characterization” organized at COEP, 16- 21 Dec 2019 on Scanning Probe Microscopy for Nanomaterial Characterization.
9. Invited Talk in Baltic Conference Series, ‘Quartz Tuning fork based array sensor for breath Analysis’. 08 - 11 October 2017, Stockholm, Sweden.
10. Invited Talk, National Workshop on Scanning Probe Microscopy Techniques, Aug 14-16, 2016.
11. Invited Talk, National Conference on Nano Science and its Applications on Engineering, Dec 3-4 2015, MIT College of Engineering, Pune, MEMS based chemical and gas sensors.
12. Invited Talk in International conference on Nanoscience and Nanotechnology during March - 12th-15th 2016 (ALIGARH NANO V 2016), Tuning fork based sensor for Breath analysis for Breast cancer.
13. Invited talk in DIAT in workshop on Nanotechnology for NDA faculty during 16th and 17th March 2016.
14. Second international symposium on physics and technology of sensors, March 8-10, 2015.
15. Frontiers in Advanced Materials 15-18 June. Attended. Student Poster presentation.
16. Invited talk in Seminar - Bringing The Nanoworld Together, Organized by Oxford Instruments, 24-25 Nov 2014, Kolkata, GNR - LSMO conjugate: MFM Analysis.
17. 7th ISSS International conference on smart materials, structures and systems (ISSS 2014), July 2014, Bangalore, Poster presentation, Development of polymer functionalized Quartz Tuning Fork for gas sensing application.

18. 7th ISSS International conference on smart materials, structures and systems (ISSS 2014), July 2014, Bangalore, Student presentation, Realization of Hyperbolic metamaterials using ferrofluids.
19. Invited talk at International Conference on Nanoscience and Nanotechnology Aligarh March 8-10, 2014, Graphene Nanoribbons, Properties and Applications.
20. International Conference on Magnetic Materials and its Applications (MAGMA 2013), Oral presentation on Study of electronic inhomogeneity in LaSrMnO₃ films using Scanning Tunneling Microscopy/Spectroscopy, IIT Guwahati, 5-7 Dec 2013
21. International Conference on Advanced and Nanomaterials (ICANM) Oral presentation on Tough Graphene Nanoribbon/ PANI/ Epoxy Composite for Electromagnetic Shielding, Qubec Canada, 12-14 August 2013
22. International Workshop on Nanotechnology and Advanced Functional Materials (NTAFM 2013),
23. Poster presentation on Study of electronic properties of gold nanoparticle of different pH using Scanning Tunneling Microscopy/ Spectroscopy, 24-25 July, 2013, NCL Pune.
24. International Conference on functional Materials for Defence (ICFMD 2012), Composite of CdSe Quantum Dots / Graphene/ PANI for Optoelectronics Application, 18-20 May 2012 , DIAT Pune
25. 1st International Symposium on Physics and Technology of Sensors, Gold-Graphene Nanocomposite based Ultrasensitive Electrochemical Glucose Sensor, 7-10 March 2012, CMET Pune.
26. International Conference on Nanotechnology for Biological and Biomedical Applications (Nano-Bio-Med) August 18-20 2011, ICTP, Italy
27. International Conference on Electron Microscopy, Study of Quasicrystalline phase of graphene: Scanning Probe Microscopy Study, 6-8 July 2011, Hyderabad.

M Tech Thesis Guided

S No	Name of the Student	Name of the Thesis	Year
1	Abdu Alemu Meham	Design of cantilever sensor for hazardous molecule detection	2011
2	Kiflu Gerbreyesus	Design and implementation of algorithms for super resolution imaging	2012
3	Vaishali Rawat	Design of diffractive optical elements for spot array and pattern generation	2012
4	Zarai	Proof of concept tuning fork based gas sensor	2012
5	Rajvinder Singh	Nano composites for EMI shielding and strength	2013
6	Anil Bajaj	Carbon nanocomposites for Radiation Shielding with high Strength	2013
7	Ajit Ambrale	Tuning fork based chemical sensor	2013
8	K K Sharma	Realization of Hyperbolic metamaterials using ferrofluids	2014
9	Mohit Mehralwal	Jet Noise measurement using Laser systems	2015
10	Kashyap	Hyperbolic metamaterials	2015
11	Aswathy Nair	Signal to Noise Improvement Using Binning Methods	2016
12	Atul Mishra	Development of Sensor array prototype for quartz tuning fork based sensor	2016
13	Shailendra Kumar	Carbon based nano composites for EMI shielding application	2016
14	Jilma P	Detection of volatile markers of breast cancer using quartz tuning fork	2016
16	Jitendra Tahalyani	Dielectric polymeric materials for flexible electronics	2016
17	Bishakha Ray	Nanocarbon-ferromagnetic composites as transparent EMI shielding	2016
18	Saurabh Parmar	Modified graphene for conducting paint as EMI shielding material	2016
19	Shadab Siddiqui	Hyperbolic Metamaterials for improved sensitivity of Plasmon polariton gas sensor	2017
20	Raminder Rana	Optically transparent EMI-shielding materials	2017
21	Pooja Goyal	Realization of Surface Plasmon Polariton Sensors using Hyperbolic Metamaterials	2018
22	Monalisa Mallick	Eye Safety of High Power Fiber Laser Technologies	2018
23	Sushmita Rath	Metabolic rate monitoring using quartz tuning fork based sensor	2019
24	Priyanka Kate	Machine Learning Approaches For Analysis Of Image And Quartz	2019

		Tuning Fork Sensor Data.	
25	Paramjeet Kaur	Tunable grating using Phase Change Material	2019
26	Sandeep Singh	Design Of 1-Dimensional Composite Photonic Crystal For Radar and IR Stealth	2019
27	Manish Mony	AFTER-Landing wireless Data Transmission for faster fault diagnosis of fighter aircraft	2020
28	Vibhu Singh	Development of Attitude Algorithm by Sensor Data Fusion using Kalman Filter	2020
29	Ramesh Babu	Data acquisition and health monitoring of off-road (all terrain) vehicle engine and transmission	2020
30	Premanshu Mishra	Artificial Intelligence & Machine Learning inclusion in Raman Spectroscopy for Detection of Certain Explosives	2021
31	Varsha Vijayan	Quartz Tuning Fork Based Sensor Array for Lung Cancer Diagnosis	2021
32	Sree Spoorthy	Wheeled Robot Navigation Using Neuro Evolution of Augmenting Topologies	2021
33	Shailya Garg	To make Printable Inks with Graphene and its Composites for EMI Shielding as well as Radar Absorbing Material	2021

PhD Thesis Guided

S No	Name of the Student	Name of the Thesis	Year
1	Rajesh Gangwar	Nano Gold and nano silica-based conjugates for improved bioavailability of curcumin and enhanced catalytic activity	2014
2	Anupama Joshi	Graphene nanoribbon-based hybrid materials and its applications	2014
3	Arvind Kumar (Co-Guide)	Synthesis of graphene-like nanocarbon for structural, tactical shielding, and spin based applications and indigenous development of chemical vapor deposition set up	2015
4	Abraham Sampson	Design and Development of Quartz Tuning Fork Sensor Array System/Prototype for Vapor Phase Detection of Volatile Organic Compounds.	2017
5	Vaishali Rawat (Co-Guide)	Meta Material Inspired Microwave Electrical Resonator for Chemical Sensing	2017
6	Sanghmitra Acharya	Carbon Nanocomposites for Electromagnetic Shielding Application	2019
7	Pradeep Kumar	Studies and optimisation of pulse power components and armature of electromagnetic railgun	2021

ORCID ID <https://orcid.org/0000-0002-9513-0064>

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