Monika Tomar

Professor, Department of Physics, Miranda House, University of Delhi
Fellow, Delhi School of Skill Enhancement & Entrepreneurship Development, Insititute of Eminence, University of Delhi
Recognized amongst the top 2% scientists of the world in the ranking released by Stanford (2022-23, 2023-24).

Specialization: Experimental Condensed Matter Physics (Adv. Materials& Electronic Devices)

Educational Qualifications

- Ph.D. (Physics): University of Delhi (2004): Thesis on "Studies on Temperature Stability of $LiNbO_3$ and ZnO thin film Surface Acoustic Wave Devices".
- Passed Joint CSIR-UGC National Eligibility test (NET) Examination in July 2001.
- B.Sc.(69.0%) and M.Sc.(75.1%) from University of Delhi in 1996 and 1998 respectively.

Academic and Research Experience:

Teaching Experience: ~ 18 Years
Research Experience: ~ 19 Years (after Ph.D.)

S. No.	From	To	Name of organization	Position held
1.	29/09/2006	Present	Department of Physics, Miranda House, University of Delhi	Professor
2.	25/02/2011	08/03/2011	Department of Electrical & Computer Engineering, College of Engineering, Univ. of Texas at San Antonio, Texas, USA	Visiting Scientist
3.	16/07/2010	30/04/2011	Department of Physics & Astrophysics, University of Delhi	Post Doctoral Research Work
4.	03/06/2010	23/08/2010	DepartmentofPhysics,UniversityofPuertoRico,SanJuan, USA	Visiting Research Fellow
5.	17/07/2006	27/09/2006	Miranda House University of Delhi	Lecturer, Rs. 15600-39100/- PB-3
6.	20/02/2006	30/4/2006	Miranda House University of Delhi	Lecturer, Rs. 15600-39100/- PB-3
7.	17/10/2005	16/02/2006	Miranda House University of Delhi	Lecturer, Rs. 15600-39100/- PB-3
8.	29/11/2004	10/03/2005	Miranda House University of Delhi	Lecturer, Rs. 15600-39100/- PB-3
9.	27/07/2004	25/11/2004	Miranda House University of Delhi	Lecturer, Rs. 15600-39100/- PB-3

Publications: 377 (276-Refereed Journals, 102-International/National Conference Proceedings)
Total citation > 7,084
h-index = 44 (scopus); 50 (Google Scholar); i10-index= 213 (Google Scholar)

Research Interest:

Semiconductor and Surface acoustic wave (SAW) sensors for gas/chemical/radiations/bio-molecules, Amperometric/Photometric biosensors, Surface plasmon resonance (SPR) technique for dielectric studies and sensing applications, Micro-fluidics, Nanostructured materials, Piezoelectric and Multiferroic thin films/ceramics for energy harvesting applications, Pressure sensors, RF and microwave resonators, photonic devices, Non linear optical studies, SAW devices, MEMS transducers and Micro-heaters, Thin film processing, Electronic device fabrication.

Research Guidance: Five students are pursuing Ph.D (1 as co-supervisor) and six students have been awarded Ph.D. (1 as co-supervisor); One student has been awarded M.Phil degree

Sponsored Research Projects:

S.No.	Sponsoring Agency	Title of the projects	Position	Tenure	Budget (Rs.Lakh)
1.	**DT-TDP**	Development of hand-held packaged hydrogen gas sensor for automobile industry **[DST/TDT/TDP-58/2022]**	PI	November 2023-November 2025	41.82
2.	**DRDO**	Bioassay Development: For the Field Diagnosis of Thrombosis	Co-PI	21 December 2023 to 21 December 2024	27.42
3.	**DST-SERB**	Embedding ferroelectric hafnium-zirconium oxide (HZO) in gate stack of GaN based junctionless transistor.	Co-PI	January 2024 to January 2027	31.4
4.	**DRDO**	Fabrication of packaged high frequency SAW devices of given specification**[1115/TS/SPL/CARS-98/2022]**	PI	Nov. 2022-April 2024	36.29
5.	**CSIR**	Gowth of crystalline single phase Ga_2O_3 thin film for Broadband Deep UV Photodetector**[Proposal ID:22571]**	PI	October 2023-2025	29.40
6.	**DST**	Development of thermoelectric energy harvester using Indium selenide thin films**[CRG/2022/005474]**	Co-PI	Jan. 2023-2026	32
7.	**DRDO**	Development of process and evaluation of electron suppression coating on the grids used in TWTs **[MTRDC/MMG/20206/CARS/LPO/125/2021-22/BUP]**	PI	December 2021-2022	23.58
8.	**DST**	Realization of MEMS based Dual Energy Harvester using ferroelectric and ferromagnetic thin film layered structures **[CRG/2019/001709]**	PI	December 2019-June 2023	51.48

9.	**DRDO**	Fabrication of Lamb Wave Devices on SiO_2/Si Membrane for strategic applications **[ERIP/ER/201706006/M/01/1749]**	PI	March 2019-September 2023	428.03
10.	**DST**	Development of ferroelectrics thin film based photovoltaics cell **[EMR/2017/000194]**	PI	August 2017-2020	31.54
11.	**IoE (University of Delhi)**	Fabrication of Laser MBE grown GaN thin films based blue Light Emitting Diode (LED) **[IoE/FRP/PCMS/2020/27]**	Co-PI	December 2020 -March 2021	5.0
12.	**DRDO**	Optimization of TiOx films and patterning of polymer (PI-2610) as sacrificial layer for pixel fabrication **[1115/CARS-60/TS/SPL]**	Co-PI	February 2018- 2019	22.195
13.	**DST (Min. of S&T)**	Development of thin film Surface Acoustic Wave device as a platform for the sensing applications **(DST/TSG/ME/2013/58-G)**	Co-PI	Nov.2014-2019	453.02
14.	**DRDO**	Feasibility study for fabrication of Air bridges by gold electroplating[ASemiT/CARS/02/DU/2017-18]	Co-PI	July 2017-Oct 2018	9.42
15.	**DeitY** (Min. of Inf.Tech.& Com.)	Demonstration of GaN LED by PLD **[File No.:5(3)/2010-NANO]**	Co-PI	Feb. 2014 – Aug.2018	479.54
16.	**DRDO**	Molecular Modelling of Halons alternatives **[CFEES/TCP/CARS/ NOMHA - FCPCG/CC/09/2013]**	Co-PI	April 2015-Dec.2017	274.134
17.	**DST**	Validation and improvement of indigenously developed table-top Surface Plasmon system (SPR) system **[DST/IDP/SEN-NEW/25(G)]**	Co-PI	Feb 15-10March17	86.316
18.	**ISRO (DOS)**	Development of Platinum based Micro Heaters /Micro Evaporation Sources for Space Applications **(B.19012/60/2014-II)**	Co-PI	Nov.14-Oct.15	30.89
19.	**GAIL (Min. of coal & Petroleum)**	Development of metal oxide thin flm based low cost sensor for CNG& PNG**[F.No.GAIL/NOIDA/C&P/R&D/13056/59 00000032/38/1198]**	Co-PI	Oct. 2013-2015	99.226
20.	**DST** Fast Track Young Scientist	Development of MOx (M=Te, Se, Ge) exhibiting negative TCD for SAW devices **[SR/FTP/PS—58/2009]**	PI	Nov. 2010 – 13	18.24
21.	**DIT** (Min. Inf. Tech.& Commn.)	Development of low-cost real-time monitoring system for harmful gases, Phase-II with CDAC-Noida **[File No.: 13(17)/2009-CC&BT]**	Co-PI	May 2011-2013	8.81
22.	**NRB** (DRDO)	Design & Development of Functional Materials for SAW devices in communication & Sensors **[DNRD/05/4003/NRB/196]**	Co-PI	Oct. 2009 – 11	47.40
23.	**DIT** (Min. Inf. Tech.& Comn.)	Development of low-cost real-time monitoring system for harmful gases. Phase-I**[File No.: 13(8)/2009-CC&BT]**	Co-PI	March 2010 - 2013	103.44
24.	**DST**	Development of the prototype of SAW sensor for NO_x gas**[File No.: DST/TSG/PT/2006/47]**	Co-PI	Aug. 2009-2012	28.18
25.	**DST**	Indigenous development of table top surface plasmon resonance (SPR) set-up **[File No.: IDP/IND/2010/28]**	Co-PI	Oct 2011-13	40.71

26.	**DRDO**	Multi-layer metallization and PLG for advanced MEMs device **[1115/CARS-32/TS/SPL/12]**	Co-PI	Jan 2012-13	9.96

Technology/Research breakthroughs and Applications:

- **Technology transfer** on complete know-how about the developed equipment "Probe Station" to an industry "M/s Optochem International, Delhi" for its commercialization on 25-01-2024.
- **Technology transfer** on complete know-how about the developed equipment "Table-top Surface Plasmon Resonance (SPR) set up" to an industry "M/s Optochem International, Delhi" for its commercialization on 25-01-2024.
- **Technology transfer** on complete know-how about the developed equipment "Table-top Surface Plasmon Resonance (SPR) set up" to an industry "Optiregion, Ashok Vihar, Delhi-110052" for its commercialization on 17-02-2015.
- I**ndian Patent** (**Applied on** 17 February 2023**): Development of self-powered HfO_2 thin film based low cost solar blind deep UV photodetector** Monika Tomar, Arijit Chowdhuri, Kajal Jindal, Gunjan Yadav (Application No.- 202311010975)
- I**ndian Patent** Pradip K. Jha, Monika Tomar, Kajal Jindal, Chanchal, Photoelectrochemical water splitting based biosensor for detecting uric acid in the biological fluids, (Indian Patent Application No.: 202311040935, Publication date: 21/7/2023).
- I**ndian Patent** (**Applied on** 29 March 2023**): Lithium Doped Potassium Sodium Niobate Thin Film Based Mems Pressure Sensor** Monika Tomar, Anjali Sharma, Lokesh Rana, Reema Gupta, Shweta Sharma (Application No.- 202311023209)
- I**ndian Patent** (**Applied on** 10 January 2023**): Lamb Wave Resonator Device For Pressure Sensing.** Monika Tomar, Lokesh Rana, Reema Gupta, Anjali Sharma, Pradip K. Jha, Manisha Bharti, A. T. Nimal, Upendra Mittal, (Application No.- 202311002112)
- I**ndian Patent** (**Applied on** 5 June 2023**): Integration Of Niobium Lead Zirconium Titanate (PNZT) Thin Film Lamb Wave Acoustic Device.** Monika Tomar, Lokesh Rana, Vandana, Reema Gupta, Anjali Sharma, Manisha Bharti, A. T. Nimal, Upendra Mittal, James Ajit Raymond (Application No.- 202311036612)
- I**ndian Patent** (**Applied on** 8 December 2022**): Fabrication of Lamb Waver Acoustic Device using Potassium Sodium Niobate (KNN) thin films.** A. T. Nimal, Upendra Mittal, Monika Tomar, Lokesh Rana, Reema Gupta, Anjali Sharma, Shweta Sharma, Manisha Bharti (Application No.- 202211070947)
- **Indian Patent** (**Published on** 30th May, 2020**):**SPR based DNA biosensor for the detection of Puccinia striiformis f. tritici, causal agent of yellow rust in wheat, Neelam R. Yadav, Rizwana Rehsawla, Surbhi Jain, Savita Sharma, Monika Tomar, Vinay Gupta. (Application No.- TEMP/E-1/24707/2020-DEL and Reference No. 202011022741).
- **Indian Patent** (**Published on** 26 June, 2020**):**Electrochemical based genosensor for the detection of Puccinia striiformis f. tritici, causal agent of yellow rust in wheat, Rizwana Rehsawla, Neelam R. Yadav, Nidhi Dhull, Savita Sharma, Monika Tomar, Vinay Gupta. (Application No.- TEMP/E-1/30053/2020-DEL and Reference No. 202011027298).
- **Indian Patent** (**Granted** on 21 December 2023):A novel highly sensitive and reliable LRSPR biosensor for detecting uric acid and fabrication thereof, Vinay Gupta, Monika Tomar, Ayushi Paliwal, and Surbhi Jain. (Application No. 201911006783)
- **Indian Patent** (**Granted** on 13 December 2023): Electric field assisted low power consuming conducto-metric gas sensor, Vinay Gupta, Monika Tomar, Anjali Sharma, and Avneet Singh. (Application No. 201811006329)
- **USA Patent (Granted)** (Patent No. US10115456B2, 2018/10/30) (US20170206952A1, 2017/1/13):Multi-States Nonvolatile Opto-Ferroelectric Memory Material and process for preparing the same thereof, Inventors: Ashok Kumar, Hitesh Borkar, Vaibhav Rao, Monika Tomar, Vinay Gupta (US Patent App. 15/406, 236, 2017/7/20)

- **Indian Patent (Published):** A Sensitive, Selective and Rapid Fuel Gas Sensor (Patent Application No. 201711011941, Published on 08-03-2019), Inventors: Vinay Gupta, Monika Tomar, Anjali Sharma, Avneet Singh, Parivesh Chugh, Jaivinder Singh, Bharthy Subramanian
- Development of piezoelectric ZnO film for **SAW & Acoustic sensors.** Acoustic sensor has been installed in PSLV flights (C9-onwards) by VSSC(ISRO).
- Developed low frequency (38 MHz) TV-IF filter based on ZnO film. The performance was tested by BEL & was found to be similar to that of Murata's commercial devices.

Honors and Awards:

- Received "**Excellence Award for Teacher in Service**" on **Foundation Day of Delhi University on 1st May 2016.**
- **Received "Woman in Science Research and Academics" by Kamla Power Women Award NGO, March 2023**
- **Best Presentation Award**, Oral presentation, "WO_3 coated Quartz Crystal Microbalance sensor for room-temperature sensing of NO_2" in International conference on Advanced Functional Materials and Devices (AFMD)-2024—SRM Institute of Science & Technology, Kattankulathur - 603 203, Chennai, Tamil Nadu—26 to 29 February, 2024.
- **CNR Young researcher award for best Oral Presentation**, "Effect of hybrid nanostructures of SnO_2 with MWCNTS and Graphene Oxide on room temperature detection of NO_2 gas"in World Nano Congress On advanced Science and Technology (WNCST-2021) held Vellore Institute of Technology, Vellore, India from 8^{th} – 13^{th} March 2021.
- **Best Presentation award**, Oral presentation, "Influence of magnetic ordering on the electronic, optical and magnetic properties of $Bi_2Fe_4O_9$"in Recent Advances in Functional Materials (RAFM-2020) held at Atma Ram Sanatan Dharma College, University of Delhi, India from 5^{th} – 6^{th} November 2020.
- **Best Presentation award**, Oral presentation, "Reconnoitering the capabilities of Al:ZnO thin films for self powered generation devices"in Recent Advances in Functional Materials (RAFM-2020) held at Atma Ram Sanatan Dharma College, University of Delhi, India from 5^{th} – 6^{th} November 2020.
- **Best Poster award,** Poster presentation,"Theoretical simulation of SAW resonator on Lithium Niobate" in National conference on physics and chemistry of materials (NCPCM) held at Maharaja Agarsen Institute of Technology, Delhi, India from 22- 23 April 2019.
- **Best Poster award,** Poster presentation,"Simulation for $LiNbO_3$ SAW device demonstrating transition of modes with normalized thickness" in National conference on smart energy resources and sustainable engineering held at Swami Shraddhanad College, University of Delhi, Delhi, India from 28- 29March 2019.
- **Best Poster award,** Poster presentation, "In-situ and post deposition analysis of Laser MBE deposited GaN films at varying nitrogen gas flow" in International Symposium on Functional materials (ISFM-2018):Energy and biomedical applications held at Hotel Shivalik view, Chandigarh,India from 13-15 April, 2018.
- **Best poster award**, Poster presentation, "Development of Electrochemical Cortisol Immunosensors based on RF sputtered NiO thin films" in International Conference on Nanoscience and Nanotechnology (ICNN-2017), held at Lucknow, India, September 22-24, 2017.
- **Best Poster Award,** Poster presentation,"Novel sensor structure for the efficient room temperature detection of NO_2 gas"in 2^{nd} Conference of Academy of Microscope Science & Technology, held at Thapar University, Patiala, India from 25- 27 February 2016.
- **Best poster award**, Poster presentation, "Novel SnO_2 thin film heterostructures using MgO and V_2O_5 nanocatalyst for detection of SO_2 gas" inNational conference/workshop on synthesis, characterization and application of advanced nanomaterials held at Hindustan Engineering University, Agra, Uttar Pradesh. 17-19 January 2014.

- **Best Poster Award,** Poster presentation, "A novel reagentless cholesterol biosensor based on sputtered NiO thin film" in2nd National conference on multifunctional advanced materials held at Shoolini University, Solan, HP, India from10-13 June, 2014.
- **Best Paper Award,** Poster presentation, "Sensitive Surface Plasmon Resonance based optical biosensor using ZnO/Au bilayered structure"in 3rd International Conference in Nanotechnology, NANOCON 014 held at Lucknow, 25 October, 2014.
- **Best Poster Award,** Poster presentation, "Synthesis of Nanocrystalline Tin oxide in Polyaniline Matrix and its Application as NO_2 Gas Sensor"in 2nd Lucknow Science Congress held at Babasahed Bhimrao Ambedkar University, Lucknow from March 27-28, 2014.
- **Best poster award**, Poster presentation, **"**MEMS based SnO_2 gas sensor for trace level detection of NO_2 gas" in International conference on Nanoscience and nanotechnology (ICNN-2013), held at Babasahed Bhimrao Ambedkar University, Lucknow, Uttar Pradesh from 18-20 Nov. 2013.
- **Best Poster Award,** Poster presentation, "Zinc Oxide and Tin Oxide Nanocrystalline Composites for Low Temperature Operated NO_2 Gas Sensor" in 1st Lucknow Science Congress held at Babasahed Bhimrao Ambedkar University, Lucknow from March 20-21, 2013.
- **Best Poster Award,** Poster presentation,"Growth of thick ZnO thin films for Acoustic Sensors and SAW devices", inMaterial Research Society at India, held at Thapar University, Patiala, India from 13- 15 February 2012.
- Received the **best paper presentation** award by Indian Vacuum Society at the IVSNS-2009, CEERI, Pilani, 11-13 Nov. 2009.
- Involved in setting up of **Microelectronics & semiconductor detector Fab. Lab.** at Dept. of Physics& Astrophysics, D.U. Member of technical committee to purchase high end equipments for the same.

VISITS ABROAD:

Singapore	Session Chair and delivered invited talk at International Meeting 10th International Conference on Materials for Advanced Technologies, ICMAT 2019, Singapore, 23-28 June 2019. Delivered Invited Talk, International conference of young researchers on advanced materials (ICYRAM) 2012, Singapore, 1-6 July 2012
USA	Session chair and delivered Talk in International Meeting on Ferroelectrics (IMF-2017), September 2017, San Antonio, USA. Delivered an oral talk at IEEE Sensors Applications Symposium (SAS 2011): San Antonio, Texas, USA, 22 – 24 February 2011. Delivered an oral talk at International Symposium on Integrated Functionalities (ISIF 2010), University of Puerto Rico, San Juan, USA from 13-16 June 2010. Delivered oral talk at the IEEE Ultrason. International Symposium, Hawaii, USA, 2003.
Germany	Delivered Talk in Joint IEEE International symposium on the applications of Ferroelectrics (ISAF), European Conference on Applications on Polar Dielectrics (ECAPD), and Workshop on Piezoresponse force microscopy (PFM), Darmstadt, Germany, 21-25 August 2016.
Thailand	Delivered Invited talk at INMAM, during 8th Asian meeting on Ferroelectrics (AMF-8), Pattaya, Thailand, 8-13 Dec.2012.
Amsterdam	Visiting Fellow: AMSTEL Institute, Univ. of Amsterdam, for about 3 week for training on the use of ICT for innovation in education.

Membership of Academic Bodies:

- Special Invitee, Committee of Course (2023), Department of Physics and Astrophysics, University of Delhi

- Member (2014-16), Board of Research Studies, Faculty of Science, Delhi University.
- Committee Member, Delhi School of Climate Change & Sustainability, Institute of Eminence, University of Delhi
- Member, Institute of Electrical and Electronic Engineers (IEEE), USA (90600688).
- Life Member, Electron Microscope Society of India (EMSI) (L-964).
- Life Member, Indian Association of Physics Teachers (L4575).
- Life Member, Society of Material Chemistry (SMC)

Other academic activities:

- Member of the Independent DRDO committee for evaluation of project success for the project titled "Development of high-g switches" of SSPL, July 2022.
- Project Monitoring and Review Committee Member of the SSPL project titled "Development of MEMES based THz detectors" Jan 2021.
- Convener of Electronic papers (10 courses) for revision of B.Sc. (Hons) Physics, B.Sc. Program Physics and B.Sc. Program Electronics under **LOCF-CBCS**, University of Delhi (2019).
- Member, Interview Panel for Post graduate diploma admission at Institute of Cyber Security and Law (ICSL) on 7th - 10th August, 2018.
- Appointed as Expert in Advisory and Review Committee for preparation of Fundamental Glossary of Broadcast Technical Technology and Electronics (English-Hindi) by Commission for Scientific and Technology Terminology, Ministry of Human Resource Development in the year 2014 and 2015.
- Member, "**Curriculum Development committee**" for framing the syllabus for Undergraduate courses under choice based credit system (CBCS).
- Member, "**Curriculum Development committee**" for framing of syllabus for Physics papers of 4-year undergraduate program of Delhi University.
- Member, "**Revision of Curriculum"** for 3 year UG course of Physics of B.Sc. Physical/Applied Sc. Committee".

Administrative responsibilities:

- Co-ordinator of college NIRF team 2021-2022, 2022-23
- Coordinator, India Today Ranking in Science, 2021-2023
- Member, IQAC (2021- till now)
- Member, college purchase committee (2022-till now)
- Coordinator, DSKC, 2021 onwards
- Teacher Representative of Governing Body, Miranda House (2016-2017)
- Member, Courses of committee, Delhi School of Climate Change, IoE (2021-2022)
- Member of Board of Research Studies for Science, Faculty of Science, University of Delhi (2014-2016)
- Member, Exam Grievances (2020- 2021)
- Member Financial Assistance Committee (2016-2017)
- Teacher-in-charge, Department of Physics (2017-2019)
- Member, Student Union (2019- 2021)
- Purchase committee, Physics Department (2015- till now)
- Member, Admission Committee (2014- till now)

- Member, Workload Committee (2017-till now)
- Convener, NGPE (IAPT) (2009- till now)
- Member, Connectivity Committee (2017-till now)
- Member Leave Committee (2016-2018)
- Member, Staff Advisor To Physics Society (2014- till now)
- Member, MH Vatavaran (2015-2017)
- Member, Cafeteria Committee (2015-2016)
- Interview panel for Admission to Post graduate diploma in Cyber Security and Law (August 2019)
- Member of Organizing committee, University Convocation (2016, 2017, 2018 & 2019)
- Paper setting and evaluation of examination papers.
- Member, "Curriculum Development committee" for framing of syllabus for Physics papers of 4-year undergraduate program of Delhi University
- Convener of Electronic papers (10 courses) for revision of B.Sc. (Hons) Physics, B.Sc. Program Physics and B.Sc. Program Electronics under LOCF-CBCS, University of Delhi (2019)

Invited talks/Session chair/Resource person:

- **Invited Talk** on "Novel Materials in Biosensing Technology" 1st National Conference on "Advances In Nanomaterials And Nanotechnology" (ANN – 2024) from 20-21 March 2024 at Rajdhani College, University of Delhi, Delhi, India
- **Invited Talk** on "Novel MoS_2 and GaN based Triboelectric Nanogenerators for energy harvesting application" 2nd International Conference on "Advanced Functional Materials and Devices" (AFMD-2023) from 13th March to 15th March 2023 via online mode.
- **Invited Talk** "Futuristic materials for energy harvesting" in Nanotechnology for a Sustainable Future: Energy Transition from Nano to Macroscale and Its Impact on Global Sustainability" on February 29th, 2024 organized jointly by School of Engineering & Applied Sciences (SEAS) and Centre of Excellence on Nanosensors and Nanomedicine (CoENN)
- **Invited Talk** on "Lamb wave based acoustic devices for wireless sensing applications" at 2nd International Conference on Recent Trends in Materials Science & Devices 2023 (ICRTMD-2023) held online from 29 - 31 December, 2023.
- **Invited Talk on** "Nano technology and nanomaterial", Department of Physics of Chikitsak Samuha's Sir Sitaram and Lady Shantabai Patkar College of Arts and Science and V.P. Varde College of Commerce and Economics,via online on December 19, 2023.
- **Invited Talk** on " Lamb wave devices: A potential sensing platform" at International Conference on Atomic, Molecular, Material, Nano & Optical Physics with Applications (ICAMNOP-2023) organized by Delhi Technical University, from December 20-22, 2023.
- **Invited Talk** on "Novel MoS_2 and GaN based Triboelectric Nanogenerators for energy harvesting application" at International Conference On Electron Microscopy & Xli Annual Meeting of Electron Microscope Society Of India (Emsi-2023) organized by Department of Physics and Astrophysics, University of Delhi from 8-10 February 2023.
- **Invited Talk o**n "Recent Advances in Biosensors" at Continuous Education Programme (CEP) "Recent Advances in Biosensing Approaches for Screening and Diagnostic Applications" oragnaized by Defence Institute of Physiology and Allied Sciences (DIPAS), DRDO from 7 th to 9 th December 2022
- **Session Chair** at "XXI International Workshop On Physics Of Semiconductor Devices- IWPSD 2021) held on 14-17 December 2021, organized by IIT Delhi
- **Invited Talk** on "Development of Laser MBE grown GaN and InGaN heterostructures and quantum wells by for short wavelength photonic devices"at "International conference on Advanced Functional Materials and Devices", Atma Ram Sanatan Dharma College, Uniersity of Delhi, 3-5 March 2021 via online mode.

- **Invited Talk** on"Exploring the capabilities of wide bandgap heterostructures and quantum wells for short wavelength photonic devices" at "International Symposium on Semiconductor Materials and Devices", at Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, 2 November 2020 via online mode.
- **Keynote Lecture and Guest of Honour** at "Functional Material for Energy Harvesting Applications", Five Days International E- Short Term Course on "Future Materials for Interdisciplinary Engineering Applications", **Hindu College of Engineering, Sonepat, Haryana**, India, 14-18 September 2020.
- **Session Chair**at "International Meeting 10th International Conference on Materials for Advanced Technologies", **ICMAT 2019, Singapore**, 23-28 June 2019.
- **Invited Talk**, "Magnetoelectric Cantilevers as Dual Energy Harvesters" 10th International Conference on Materials for Advanced Technologies, **ICMAT 2019, Singapore**, 23-28 June 2019.
- **Invited talk**, "Flexible, Integrated and Miniaturized Low Cost Biosensors"National Seminar on New trends in Nanotechnology and applications, NTNA 2018, Atma Ram Sanatan Dharma College, **University of Delhi**, New Delhi, 27-28 September 2018.
- **Resource person** at "Women at the Frontiers of Ferroelectrics" at International Meeting on Ferroelectricity **(IMF), San Antonio, USA**, 4-8 September 2017.
- **Session Chair** at International Meeting on Ferroelectricity **(IMF), San Antonio, USA**, 4-8 September 2017.
- **Invited talk**, "Nanoparticles for electronic devices" at Add on certificate course in Nanochemistry, **Miranda House, University of Delhi**held on 30 October 2017.
- **Invited talk,** "SPR based Electro-optic and Magneto-optic modulators" 6th International Symposium on Integrated Functionalities, ISIF 2017, New Delhi, 10-13 Dec. 2017.
- **Invited Talk,** "Novel designs of SAW devices for highly sensitive chemical sensors" 10th National Conference on Solid State Chemistry and Allied Areas, ISCAS 2017, **Delhi Technological University**, 1st- 3rd July, 2017.
- Participated as **Teacher Mentor** in the Inspire Internship Programme held on 18-22 December 2017 at **Miranda House, University of Delhi**, New Delhi.
- **Invited Talk,**"Surface acoustic wave devices for sensing applications" at International Conference on Nanoscience and Nanotechnology (ICNN- 2017), held at **BBAU, Lucknow**, India from September 22 - 24, 2017.
- **Invited Talk,** "Surface Acoustics Wave devices and applications" at Faculty Development Programme, **Atma Ram Sanatan Dharma College, University of Delhi** on 10th November 2017.
- Participated as a **facilitator and mentor** at the Experimental Workshop For Undergraduate Science Students held on 01 June - 15 July 2016 by DS Kothari Centre for Research and Innovation in Science Education, Miranda House, **University of Delhi**, New Delhi.
- **Invited talk**, Conference and Annual Meeting of Academy of Microscopy Science and Technology, **Thapar University, Patiala**, 25-27 Feb. 2016.
- **Invited talk**, National Conference on Microscopy & Advances in Material Sciences, Department of Physics, **University of Jammu, Jammu**, 2-4 March 2015.
- Participated as **Teacher Mentor** in the Inspire Internship Programme at **Miranda House, University of Delhi**, New Delhi, 13-17 July 2015.
- **Invited Talk**, 18th National Seminar on Ferroelectrics and Dielectrics (NSFD), Physics Department, **Manipur University, Imphal, Manipur**, 3-5 Nov. 2014.
- **Invited Talk**, National conference on multifunctional advanced materials**, Shoolini University, Solan**, 10-13 June 2014.
- **Invited talk and Session chair**, International conference on Nanoscience and nanotechnology (ICNN-2013), Babasahed Bhimrao Ambedkar University, **Lucknow**, 18-20 Dec. 2013.

- **Resource Person**, 2-months Training program in Physics for the faculty of Kabul University at University of Delhi (2013).
- **Invited talk, INMAM**, 8th Asian meeting on Ferroelectrics (AMF-8), **Pattaya, Thailand**, 8-13 Dec.2012.
- **Invited Talk**, International conference of young researchers on advanced materials **(ICYRAM) 2012, Singapore**, 1-6 July 2012.
- **Invited Talk**, SPIE chapter, A.N.D. College, **University of Delhi**, Feb 2012.
- **Invited talk** on "Electronic Materials and Devices" and pursued collaborative research work at theDept. of Electrical & Computer Engineering, College of Engineering, Univ. of Texas at **San Antonio, Texas, USA**. (25-02-2011 to 8-03-2011).

Conferences organized:

- Part of the Organizing committee in the Symposium on Empowering Women in Chemistry: A Global Networking event held on 12 February 2019 at Miranda house, University of Delhi.
- Part of the Organizing committee in DST Inspire Scholar Science Conclave 2019: Research on the Frontiers held on 16 - 18 January 2019 at Miranda house, University of Delhi.
- Participated as Organizing member in Indian Science and Engineering Fair Regional Fair held on 13 October 2017 at Miranda House, University of Delhi, New Delhi.
- Participated as Member of Organizing Committee in the Inspire Internship Programme held on 18-22 December 2017 at Miranda House, University of Delhi, New Delhi.
- Chair of Finance Committee "6th International Symposium on Integrated Functionalities (ISIF)" held at New Delhi from 10 - 13 December 2017 by University of Delhi.
- Co-Coordinator, Two day DST sponsored workshop on "Indegeniously develoved Low cost Table top Surface Plasmon Resonance Technique and its applications", 8-9 May 2014, University of Delhi.
- Co-Coordinator, 3 week structured workshop at INMAS (DRDO) & SSPL, Delhi for undergraduate students of University of Delhi (June 2008 and 2009).

Seminars attended:

- Faculty Development Programme "Recent Advances in Science and Technology", Online held on21 May 2020 to 27 May 2020by RPS Group of Institutions, Haryana.
- Faculty Development Programme "Challenges and Opportunities in Higher Education in India for the 21st Century", Online held on 8 May 2020 by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi
- Faculty Development Programme "Coronoa Pandemic and Economic Challenges in India", Online held on 4 May 2020 by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi
- Quality Assurance in Higher Education : Practices And Issues,Online held from 4 May 2018 to 8 May 2020 by Hansraj College, University of Delhi
- Faculty Development Programme on "Entrepreneurship, Motivation & Leadership" held at Atma Ram Ram Sanatan Dharma College, University of Delhi from 24 December 2018 to 30 December 2018 organized by National Institute for Entrepreneurship and Small Business Development, Ministry of Skill Development and Entrepreneurship
- Annual Refresher Program in Teaching, "Refresher course in Disaster Management" by MHRD, Govt. of India (Test conducted by NTA), Date of certification 8 November 2019 (Date of examination 30 June 2019) Application no.#: 190710005378
- Participated and presented project on National Science Day organised by Indian Academy of Sciences and Indian National Science Academy on 28 February 2018.

- Participated in the Conclave on Biodiversity for everyone's life held on 31August 2018 Miranda house, University of Delhi.
- Participated in National Conference on Technological Empowerment of Women held on 8-9 March 2018 at New Delhi by National Academy of Sciences.
- Participated in the workshop on active Learning as a Transformational Tool for the University Classroom held on 15 May 2017 by DS Kothari Centre for Research and Innovation in Science Education, Miranda House, University of Delhi, New Delhi
- Participated in the DBT sponsored Seminar on Physics of Stars held on 1 April 2016 at Department of Physics and Electronics, Hansraj College, University of Delhi, Delhi
- Participated in Worksop on Indigenously Developed Low Cost Surface Plasmon Resonance Technique and its Applications held on 8-9 May 2014 at University of Delhi, Delhi.

Recognized by Science Faculty as Independent Supervisor (SF-I/BRS/2010/118 dated 23-4-2010)

Ph.D. Students (Independent Supervision)

S.N.	Student Name	Date of registration	Thesis title	Status
1.	**Akshita Rajan**	15-10-2010	Development of ZnO thin films for UV photo detectors	**Thesis Awarded**
2.	**Manvi Tak**	01-03-2011	Growth of metal oxide nanostructures for detection of Urea and Manengities	**Thesis Awarded**
3.	**Surbhi Gupta**	29-12-2015	Development of multi-component thin film for energy harvesting applications	**Thesis Awarded**
4.	**Surbhi Jain**	22-12-2016	Growth of thin films for optical device applications	**Thesis Awarded**
5.	**Shweta Sharma**	20-12-2016	Development of Lead Free Ferroelectrics based energy harvesters	**Thesis Awarded**
6.	**Nidhi Dhull**	22-12-2016	Growth of functional oxide thin films for device applications	**Thesis Awarded**
7.	**Manisha Bharti**	26-11-2018	Development of Acoustic wave based sensing platform	**Thesis Awarded**
8.	**Gunjan Yadav**	07-01-2019	Wide band-gap semiconducting thin films for photonic devices	**Thesis Awarded**
9.	**Babita Sharma**	13-04-2021	Development of Functional materials for energy applications	**Under progress**
10.	**Satyam Garag**	24-02-2023	Grwoth of SnSe 2D layers for device application	**Under Progress**
10.	**Rakesh Kumar Sonkar**	09-01-2011	Growth and Characterization of nanostrucutured thin film for gas sensor applications	**M.Phil Degree Awarded**
11.	**Narender Budhiraja (Co-supervision with Prof. S.K. Singh)**	07-03-2017	Investigations of Structural, Optical, Electrical, Photocatalytic andother properties of Synthesized Nanomaterials	**Thesis Awarded, DCRUST, Murthal**
12.	**Amit Kumar (Co-supervision with Dr. Mahipal Singh, Kumaon University)**	30-08-2017	Polymer composites as advanced EMI shielding material for electromagnetic pollution	**Under progress**

Book Chapters:

- "Theoretical Analysis of the electrical and optical properties of ZnS", Amruta Pattnaiak, Monika Tomar, Pradeep Kumar Jha, Akash Kumar Bhoi, Vinay Gupta, and Basudev Prasad, pp. 9-19, in Book "**Advances in Systems, Control and Automation**", Editted by Avinash Konkani, Rabindranath Bera and Samrat Paul, (2018), Publisher: Springer, Singapore (DOI:10.1007/978-981-10-4762-6), (ISBN: 0nline- 978-981-10-4762-6; print- 978-981-10-4761-9) (ISSN: online-1876-1119, print-1876-1100)
- "Electrocatalytic Properties of ZnO Thin Film Based Biosensor for Detection of Uric Acid", Kajal Jindal, Vinay Gupta and Monika Tomar, Chapter 1, "**Advanced Functional Materials and Devices",** Select Proceedings of AFMD 2021, Edited by S.B Krupanidhi, Vinay Gupta, Anjali Sharma, Anjani Kumar Singh (2021), Publisher: Springer, Singapore (ISBN: Online- 978-981-16-5970-6)
- "Effect of Sonication of GO in Acetone for the Fabrication of RGO Powder and Thin Film", Akanksha Motla, Anjali Sharma, Monika Tomar and Vinay Gupta, Chapter 11, "**Advanced Functional Materials and Devices",** Select Proceedings of AFMD 2021, Edited by S.B Krupanidhi, Vinay Gupta, Anjali Sharma, Anjani Kumar Singh (2021), Publisher: Springer, Singapore (ISBN: Online- 978-981-16-5970-6)
- "Electrocaloric effect in PZT thick film for the cooling device applications" Vandana, Reema Gupta, R.P. Tandon, Monika Tomar, Vinay GuptaChapter 8, "**Advanced Functional Materials and Devices",** Select Proceedings of AFMD 2021, Edited by S.B Krupanidhi, Vinay Gupta, Anjali Sharma, Anjani Kumar Singh (2021), Publisher: Springer, Singapore (ISBN: Online- 978-981-16-5970-6)
- "Optical constants of BiI_3 polycrystalline thin films with potential applications in X-ray detectors and Photovoltaic cell", Alka Garg, Monika Tomar and Vinay Gupta, Chapter 13, "**Advanced Functional Materials and Devices",** Select Proceedings of AFMD 2021, Edited by S.B Krupanidhi, Vinay Gupta, Anjali Sharma, Anjani Kumar Singh (2021), Publisher: Springer, Singapore (ISBN: Online- 978-981-16-5970-6)
- "A Comparative Study of Antimony Telluride and Bismuth Telluride for Thermoelectric Generation." , Choudhary, Jai shree, Anisha, Aditya Gupta, Arijit Chowdhuri, Geeta Rani, Bilasni Devi, Mallika Verma, Monika Tomar, Ranjana Jha, and Anjali Sharma. In "**Recent Advances in Nanomaterials" Proceedings of International Conference on Nanotechnology: Opportunities and Challenges**, vol 27, pp. 275-279. Singapore: Springer Nature Singapore, 2022.
- "Growth of WO_3–SnO_2 Composite Using Chemical Method for NO_2 Sensing", J. P. Singh, A. Sharma, R. Gupta, M. Tomar & A. Chowdhuri. In "**Recent Advances in Nanomaterials"**, **Proceedings of International Conference on Nanotechnology: Opportunities and Challenges**, vol 27, pp. 269–273. Singapore: Springer Nature Singapore, 2022.
- "CdS-SnO_2 Nanocomposite Sensor for Room Temperature Detection of NO_2 Gas", Ajay Kumar Sao, Jatinder Pal Singh, Babita Sharma, Sandeep Munjal, Anjali Sharma, Monika Tomar & Arijit Chowdhuri, in **Lecture Notes in Electrical Engineering** Suryadevara, N.K., George, B., Jayasundera, K.P., Roy, J.K., Mukhopadhyay, S.C. (eds) Sensing Technology., vol 886. Springer, Cham, (ISBN: 978-3-030-98885-2)

- "Realization of KNN-PVDF Cantilever for Mechanical Energy Harvesting", Babita Sharma, Reema Gupta, Mallika Verma, Bilasini Naorem and Monika Tomar**,** in **"Advanced Functional Materials for Sustainable Environment"** Edited by R.K. Kotnala, Anjali Sharma, Shankar Subramanian, Amit K. Vishwakarma (2023), Publisher: Capital Publishing Company Copublished by Springer, International Publishing, Cham, Switzerland (ISBN: 978-93-81891-80-3)
- "Droplet Based Triboelectric Nanogenerator (DB-TENG) by Conjunction of Photovoltaic and Triboelectric Effect", Gunjan Yadav, Kajal Jindal, Bilasini Naorem and Monika Tomar in **"Advanced Functional Materials for Sustainable Environment"** Edited by R.K. Kotnala, Anjali Sharma, Shankar Subramanian, Amit K. Vishwakarma (2023), Publisher: Capital Publishing Company Copublished by Springer, International Publishing, Cham, Switzerland (ISBN: 978-93-81891-80-3)
- "Growth, Characterization and Pyroelectric Study of Pure and Lanthanum Doped PZT Film" Vandana, Monika Tomar and Reema Gupta in **"Advanced Functional Materials for Sustainable Environment"** Edited by R.K. Kotnala, Anjali Sharma, Shankar Subramanian, Amit K. Vishwakarma (2023), Publisher: Capital Publishing Company Copublished by Springer, International Publishing, Cham, Switzerland (ISBN: 978-93-81891-80-3)

Development of e-content

- Coordinator and Content Writer (prepared 30 modules of e-content (under 04 quadrants)) for preparation of e-content of paper "Semiconductor Devices" for Post-graduate students under the UGC project "e-PG Pathshala" (an MHRD Project under its National Mission on Education through ICT).

Article published:

- **Module II: Unit VIII: Digital Gates & Combinatorial Logic Circuits (**pp: 83-97) – Handbook for 1st year B.Sc. Program Laboratory course (IN 108) Electronics and Modern Instrumentation, Department of Electronic Science, University of Delhi, South Campus.

LIST OF PUBLICATIONS

2024

1. “Template-assisted mesoporous SnO_2 based gas sensor for NO_2 detection at low temperature” Singh, Alka, Mansi Vats, Satyabrata Mohapatra, Monika Tomar, Arijit Chowdhuri, and Vaishali Singh. Journal of Porous Materials (2023): 1-11.
2. “Metal Oxide based Carbon Nanocomposite as Sensing Platform for Electrochemical Detection of Cadmium- Computational and Experimental Approach”, Lochab, A., Jindal, K., Chowdhuri, A., Tomar, M., Saxena, R. Microchemical journal, (2024) 198,110125.
3. “Analog resistive switching behavior in $BiCoO_3$ thin film”, Manisha Kumari, Kajal Jindal, Sandeep Munjal, Monika Tomar, Pradip K. Jha, Solid State Electronics, 212 (2024) 108831
4. "EMI Shielding Properties of Sub-micron Polymer Composite of Barium Strontium Titanate Loaded with Polystyrene, Graphite Powder, and Carbon Fibre." Miglani, Rohit, Reema Gupta, Amit Kumar, V. K. Sachdev, Monika Tomar, and Arijit Chowdhuri. Arabian Journal for Science and Engineering (2023): 1-9.

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5. “Conductive polymer based MWCNTs Nanocomposite as Electrochemical Sensing Platform to detect Chloramphenicol”, Amit Lochab, Kajal Jindal, Arijit Chowdhuri, Monika Tomar, Reena Saxena, Synthetic Metals 297 (2023) 117397 (IF=4.4).
6. Kumari, Manisha, Kajal Jindal, Monika Tomar, and Pradip K. Jha. "Effect of 3d transition metal doping on the structural, electronic, & magnetic properties of BiCoO3 using first principles study." Journal of Magnetism and Magnetic Materials 588 (2023): 171383.
7. "Effect of codoping of rare earth elements and Cr on multiferroic, optical and photocatalytic properties of BiFeO3." Ahmad, Tahir, Kajal Jindal, Monika Tomar, and Pradip K. Jha. Materials Today Communications 37 (2023): 107516.
8. "Nanofilm-enhanced electrochemical DNA sensing: a breakthrough for yellow rust detection in wheat." Rehsawla, Rizwana, Nidhi Dhull, Monika Tomar, Savita Sharma, and Neelam R. Yadav. Materials Research Express 10, no. 11 (2023): 116402.
9. "Studies on photovoltaic properties of BFO/WO_3 bilayer thin films for solar energy harvesting applications." Lamichhane, Shiva, Savita Sharma, Monika Tomar, and Arijit Chowdhuri. Results in Optics (2023): 100539.
10. "Effect of low sintering temperature on the structural and magnetic properties of M-type strontium hexaferrite." Rana, Kush, Shalini Thakur, Monika Tomar, Vinay Gupta, and Atul Thakur. Journal of Magnetism and Magnetic Materials (2023): 171289.
11. "Electromagnetic shielding effectiveness and dielectric study of polystyrene/aluminum composite by addition of graphite and carbon nanofiber powder." Kumar, Amit, V. K. Sachdev, Arijit Chowdhuri, Monika Tomar, and Mahipal Singh. Journal of Materials Science: Materials in Electronics 34, no. 27 (2023): 1857.
12. "$Ba_{1-x}Sr_xTiO_3$ thin-film-based X-band selective coplanar waveguide microwave resonator using SiO_2 as buffer layer."Miglani, Rohit, Reema Gupta, Anjali Sharma, Monika Tomar, and Arijit Chowdhuri Journal of Materials Research (2023): 1-13.
13. "Thermal and mechanical energy harvester based on flexible PVDF/PLZT polymer-ceramic composites." Vandana, Monika Tomar, and Reema Gupta. Journal of Polymer Research 30, no. 8 (2023): 330.
14. “Fabrication of Surface Acoustic wave resonator as Acousto-optic Modulator." Bharati, Manisha, Lokesh Rana, Reema Gupta, Anjali Sharma, Pradip K. Jha, and Monika Tomar. Optical Materials 142 (2023): 114088.

15. “Conductive polymer based MWCNTs nanocomposite as electrochemical sensing platform to detect chloramphenicol." Lochab, Amit, Kajal Jindal, Arijit Chowdhuri, Monika Tomar, and Reena Saxena. " *Synthetic Metals* 297 (2023): 117397.

16. "EMI Shielding Properties of Sub-micron Polymer Composite of Barium Strontium Titanate Loaded with Polystyrene, Graphite Powder, and Carbon Fibre." Miglani, Rohit, Reema Gupta, Amit Kumar, V. K. Sachdev, Monika Tomar, and Arijit Chowdhuri. *Arabian Journal for Science and Engineering* (2023): 1-9.

17. “Fabrication of Surface Acoustic wave resonator as Acousto-optic Modulator” Manisha Bharati, Lokesh Rana, Reema Gupta, Anjali Sharma, Pradip K. Jha, Monika Tomar, Optical Materials, 142, 2023,114088, ISSN 0925-3467.

18. "Development of CdS-SnO_2 hybrid nanocomposite thin films for trace level detection of NO_2 gas." Sao, Ajay K., Anjali Sharma, Mallika Verma, Monika Tomar, and Arijit Chowdhuri. *Sensors and Actuators B: Chemical* (2023): 134198.

19. "Fabrication of GaN-based MSM droplet triboelectric nanogenerator by the conjunction of photovoltaic and triboelectric effect." Yadav, Gunjan, Kajal Jindal, and Monika Tomar. *Journal of Alloys and Compounds* 944 (2023): 169178.

20. "Impact of top metal electrodes on current conduction in WO3 thin films."Sharma, Savita, Monika Tomar, and Sudha Gulati. *International Journal of Materials Research* 0 (2023).

21. "Lamb Wave Resonator for UV Photodetection and Impact of Induced Piezopotential on Schottky Barrier Height towards Enhanced Sensitivity." Bharati, Manisha, Lokesh Rana, Kajal Jindal, Reema Gupta, Anjali Sharma, and Monika Tomar. *IEEE Sensors Journal* (2023).

22. "Realization of a DNA biosensor using inverted Lamb wave MEMS resonator based on ZnO/SiO2/Si/ZnO membrane." Bharati, Manisha, Lokesh Rana, Reema Gupta, Anjali Sharma, Pradip K. Jha, and Monika Tomar. *Analytica Chimica Acta* 1249 (2023): 340929.

23. "Studies on energy storage properties of BFO/WO3 bilayer thin film capacitor." Lamichhane, Shiva, Savita Sharma, Monika Tomar, and Arijit Chowdhuri. *Energy Storage* 5, no. 2 (2023): e342.

24. "Theoretical insight of origin of Rashba–Dresselhaus effect in tetragonal and rhombohedral phases of $BiFeO_3$."Ahmad, Tahir, Kajal Jindal, Monika Tomar, and Pradip K. Jha. *Physical Chemistry Chemical Physics* 25, no. 7 (2023): 5857-5868.

25. “Realization of a DNA biosensor using inverted Lamb wave MEMS resonator based on ZnO/SiO_2/Si/ZnO membrane”, Bharati, Manisha, Lokesh Rana, Reema Gupta, **Anjali Sharma**, Pradip K. Jha, and Monika Tomar. **Analytica Chimica Acta,** 2023, 129, 340929.

26. “Impact of laser energy on resistive switching properties of BiFeO3 thin films”, Lamichhane S., Sharma S., Tomar M., Chowdhuri A., **Materials Chemistry and Physics,** 2023, 293, 126824.

27. “Influence of pulsed laser deposited hafnium oxide thin film as gate dielectric on the fabrication of Al0.1Ga0.9N/GaN MOS-HEMT”, Yadav G., Jindal K., Tomar M., **Materials Science in Semiconductor Processing,** 2023, 153, 107136.

28. “Influence of post deposition annealing on thermoelectric properties of In2Se3 thin films”, Jeengar C., Tomar M., Jindal K., Sharma A., Jha P.K., **Materials Science in Semiconductor Processing**, 2023, 153, 107127.

29. “Boost in the Electromagnetic Shielding Effectiveness of Polystyrene–Polyaniline Composites by Addition of Carbon Nanofibers” , Kumar A., Chowdhuri A., Tomar M., Singh M., **Arabian Journal for Science and Engineering,** 2023, 48.

30. “Simulation and fabrication of higher mode Lamb wave acoustic devices for sensing applications”, Bharati, M., Rana, L., Gupta, R., **Sharma, A.**, Jha, P. K., & Tomar, M.. Physica Status Solidi (a), 2023, 220, 2200760

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1. “Optical properties of LMBE grown c-axis oriented GaN thin films using Surface Plasmon Resonance technique”, Yadav, G., Gupta, R., Sharma, A., Tomar, M. **Optical Materials**, 2022, 131, 112603.
2. “Low-Cost and Disposable Electrochemical Paper-Based Analytical Device (PAD) for Escherichia coli O157:H7” Dhull, N., Jindal, K., Verma, M., Tomar, M., **Analytical Letters,** 55, no. 14 (2022): 2297-2307.
3. “Compositional, electrical and thermal properties of nonstoichiometric titanium oxide thin films for MEMS bolometer applications” IshaYadava, SurbhiJain, Shalik RamJoshi, AnshuGoyal, MonikaTomar, SudhaGupta, ShankarDutta and RatnamalaChatterjee, **Materials Science in Semiconductor Processing,** 148 (2022) 106779
4. “Phase-defined growth of In2Se3 thin films using PLD technique for high performance self-powered UV photodetector”, ChanchalJeengar, KajalJindal, AkhileshPandey, MonikaTomar and Pradip K.Jha, **Applied Surface Science**, 595 (2022) 153505.
5. “Study of intrinsic point defects in γ-In2Se3 based on first principles calculations for the realization of an efficient UV photodetector”, ChanchalJeengar, KajalJindal, MonikaTomar and Pradip K.Jha, **Journal of Alloys and Compounds**, 912 (2022) 165197.
6. “Felxomagnetic effects on inhomogeneously strained multiferroics composites”, Borkar, Hitesh, Vishwajit M. Gaikwad, R. J. Choudhary, M. Tomar, Vinay Gupta, and Ashok Kumar, **Journal of Magnetism and Magnetic Materials (2022): 169274**.
7. “Electroluminescence study of InGaN/GaN QW based p-i-n and inverted p-i-n junction based short-wavelength LED device using laser MBE technique” Gunjan Yadav, Sheetal Dewan and Monika Tomar, **Optical Materials,** 126 (2022)112149.
8. “Smartphone integrated handheld Long Range Surface Plasmon Resonance based fiber-optic biosensor with tunable SiO_2 sensing matrix”, Jain S, Paliwal A, Gupta V, Tomar M. **Biosensors and Bioelectronics**, 29(2022) 113919.
9. “Effect of different anode electrodes with $Li(Li_{0.25}Co_{0.37}Mn_{0.38})O_2$ as cathode material on Li: ion battery performance” Vandana, Reema Gupta, Anisha Chaudhary, R. P. Tandon, Vinay Gupta & Monika Tomar, **Journal of Materials Science: Materials in Electronics** 33, 3901–3913 (2022)
10. “Enhanced Pyroelectric Coefficient in Ferroelectric Lead Zirconium Titanate Thick Films for Thermal Energy Harvesting Applications”, Vandana, Reema Gupta, R. P. Tandon and Monika Tomar, **ECS J. Solid State Sci. Technol**. 11 (2022) 023015
11. “Optical Confinement Study of Laser MBE Grown InGaN/GaN Quantum Well Structure using Surface Plasmon Resonance Technique”, Gunjan Yadav, Ayushi Paliwal, Vinay Gupta, Monika Tomar, **Plasmonics** (2022), 17(2), pp. 869-880 DOI : 10.1007/s11468-021-01578-4
12. “Double Schottky metal-semiconductor-metal based GaN photodetectors with improved response using laser MBE technique”, Gunjan Yadav, Monika Tomar, **Journal of Materials Research** (2022), Article in Press, DOI :10.1557/s43578-021-00467-0.
13. ”Enhancement in the dielectric property of thick Lead Zirconium Titanate films using Ultraviolet illumination”, Vandana , Reema Gupta , Monika Tomar , RP Tandon, Vinay Gupta, **Physica Solidi Status (a)**;(2022), Article in Press, https://doi.org/10.1002/pssa.202000728

14. "Lattice-strain engineered $K_xNa_{1-x}NbO_3$ thin films near the morphotropic phase boundary for enhanced electrical properties", Shweta Sharma, Reema Gupta and Monika Tomar, **Materials Chemistry and Physics**, 2771 (2022), 125512
15. "Corrigendum to "Room-temperature electroluminescence from Laser MBE grown Gallium Nitride LEDs", SheetalDewan, MonikaTomar, R.P.Tandonand VinayGupta, **Materials Science and Engineering: B**, 275 (2022) 115518.
16. "Lead-free laminated structures for eco-friendly energy harvesters and magnetoelectric sensors", HiteshBorkara, Vishwajit M.Gaikwad, SomaDutta, M.Tomar, VinayGupta and AshokKumar, **Journal of Physics and Chemistry of Solids** 160 (2022) 110306. ISSN: 0022-3697.
17. "Role of vacancies in tuning the electronic and magnetic properties of BiCoO3", Kumari M., Jindal K., Tomar M., Jha P.K., **Physica Scripta,** 97, 75819.
18. "SPR based refractive index modulation of nanostructured SiO2 films grown using GLAD assisted RF sputtering technique", Jain S., Paliwal A., Gupta V., Tomar M., **Surfaces and Interfaces,** 34, 102355.
19. "Electrocaloric and energy storage properties of sol-gel derived lanthanum doped PZT thick films", Vandana, Gupta R., Tandon R.P., Tomar M., **Materials Science in Semiconductor Processing,** 150, 106970.
20. "Microfluidics integrated NiO based electrolyte-gated FETs for the detection of cortisol", Dhull N., Kaur G., Jindal K., Verma M., Tomar M., **Journal of Materials Chemistry B,** 10.
21. "Effect of variation in glancing angle deposition on resistive switching property of WO3thin films for RRAM devices", Lamichhane S., Sharma S., Tomar M., Chowdhuri A.,**Journal of Applied Physics**, 132, 134102.
22. "Role of coordination site in governing the structural, electronic and optical properties of Ca-doped strontium barium niobate", Ahmad T., Tomar M., Jindal K., Jha P.K., **Physica Scripta,** 97, 95814.

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23. "Exploitation of Electric field assisted optical signal amplification in ferroelectric photorefractive $K_{0.50}Na_{0.50}NbO_3$ thin film" Akash Gupta, Shweta Sharma, Reema Gupta, Anjali Sharma, Monika Tomar, **Optical Materials**, 121 (2021) 111599.
24. "Role of H impurity as compensating center in $BiFeO_3$ by first-principle calculations", Shaan Ameer, Kajal Jindal, Monika Tomar, Vinay Gupta and Pradip K Jha, **Physica Scripta,** 96 (2021), 125813. ISSN: 1402-4896
25. "Development of novel MoS_2 hydrovoltaic nanogenerators for electricity generation from moving NaCl droplet" Sujit Kumar, Anjali Sharma, Vinay Gupta and Monika Tomar, **Journal of Alloys and Compounds**, 884, (2021), 161058. ISSN: **0925-8388**
26. "Electromagnetic interference shielding properties of hierarchical core-shell palladium-doped MoS /CNT nanohybrid materials" J. Prasad, A.K. Singh, A.P.S. Gahlot, M. Tomar, V. Gupta, and K. Singh. **Ceramics International**47 (2021): 27586-27597.
27. "Enhanced Low Temperature Thermoelectric Properties by Nano-Inclusion of 2D MoS2 with Fe:ZnO Thin Films", Aakash Gupta, Sujit Kumar, Kajal Jindal, Anjali Sharma, Monika Tomar, **J. Electronic Materials**50(**2021**) 4567–4576,ISSN: 0361-5235
28. "Realization of low-power and high mobility thin film transistors based on MoS_2 layers grown by PLD technique." S. Kumar, A. Sharma, M.Tomar, and V. Gupta. **Materials Science and Engineering: B** 266 (2021): 115047. ISSN: 2161-6221.

29. "Impact of TiO_2 buffer layer on the ferroelectric photovoltaic response of CSD grown PZT thick films." Vandana, R. Gupta, M. Tomar, RP Tandon, and V. Gupta. **Applied Physics A** 127, no. 6 (2021): 1-9. ISSN: 0947-8396
30. "Enhancement in the Dielectric Property of Thick Lead Zirconium Titanate Films under UV Illumination." Vandana, R. Gupta, M. Tomar, RP Tandon, and V. Gupta. **Physica status solidi (a)**218 (2021): 2000728. ISSN: **1862-6254**
31. "Ferroelectric and magnetic domain mapping of magneto-dielectric Ce doped $BiFeO_3$ thin films."S. Gupta, M. Pal, M. Tomar, R. Guo, A. Bhalla, and V. Gupta. **Journal of Alloys and Compounds** 882 (2021): 160698. ISSN: **0925-8388**
32. "Bismuth tri-iodide-polystyrene composite for X-rays switching applications at room temperature." R. Chaudhari, A. Garg, K. Singh, M. Tomar, V. Gupta, and C. RaviKant. **Radiation Physics and Chemistry** 186 (2021): 109538. ISSN: 0969-806X
33. "NO_2 Gas Sensor Based on SnSe/$SnSe_2$ pn Hetrojunction."Rani, Sanju, M. Kumar, Y. Singh, M. Tomar, A. Sharma, V. Gupta, and V.N. Singh. **Journal of Nanoscience and Nanotechnology** 21, no. 9 (2021): 4779-4785.ISSN: 1533-4880
34. "Investigation of cadmium-incorporated ZnO thin films for photodetector applications." S. Sharma,, M. Tomar, V. Gupta, and A. Kapoor. **Superlattices and Microstructures** 151 (2021): 106812.
35. "Investigation of optical non-linearity of lead-free ferroelectric potassium sodium niobate ($K_{0.35}Na_{0.65}NbO_3$) thin films via two-wave mixing phenomenon", S. Sharma, R. Gupta, A. Kumar, V. Gupta and M. Tomar, **Optics and Laser Technology,** 141 (2021) 107148
36. "Hydrothermal synthesis of micro-flower like morphology aluminum-doped MoS_2/rGO nanohybrids for high efficient electromagnetic wave shielding materials." J. Prasad, A.K. Singh, M. Tomar, V. Gupta, and K. Singh. **Ceramics International** 47, no. 11 (2021): 15648-15660. ISSN: 0272-8842
37. "Bipolar Resistive Switching in Magnetostrictive Ni/PZT/Pt Structure for Non-Volatile Memory Applications." S. Sharma, S.Gupta, R. Gupta, H. Borkar, A. Kumar, V. Gupta, and M. Tomar. **ECS Journal of Solid-State Science and Technology**2021, 10(7), 071001.
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6. "WO_3 coated Quartz Crystal Microbalance sensor for room-temperature sensing of NO_2"— International conference on Advanced Functional Materials and Devices (AFMD)-2024—SRM Institute of Science & Technology, Kattankulathur - 603 203, Chennai, Tamil Nadu—26 to 29 February, 2024.
7. Oral presentation titled "CdS-SnO_2 nanocomposite sensor for room temperature detection of NO_2 gas" at 14^{th} International Conference On Sensing Technology held at Indian Institute of Technology Madras Chennai, India, January 17 to 19, 2022 .
8. Presented a poster titled "SnO_2 Thin Film Based Sensor For Efficient Detection Of Chemical Warfare Agent", held online at Jamia Milia Islamia University from 28^{th}-30^{st} Nov, 2022.
9. Presented a poster titled "CdS Thin Film Based QCM Sensor For The Efficient Detection Of NO_2 Gas At Room Temperature", held online at Atma Ram Sanatan Dharma College, University of Delhi from 13^{th}-15^{st} March, 2023.
10. Oral presentation titled "Efficient room temperature detection of DMMP using CdS thin film based QCM sensor" at 14^{th} International Conference on Functional Materials and Devices held at Nanotechnology Reserch Centre(SRM), SRMIST, Kattankulathur, India, February 26^{th} – 29^{th}, 2024.
11. "2D MoS2 layers: Outstanding candidate for Environmental Monitoring and Energy Harvesting" at 14^{th} International Conference on Functional Materials and Devices held at Nanotechnology Reserch Centre(SRM), SRMIST, Kattankulathur, India, February 26^{th} – 29^{th}, 2024.
12. "Influence of magnetic ordering on the electronic, optical and magnetic properties of $Bi_2Fe_4O_9$" Kajal Jindal, Shaan Ameer, Monika Tomar, Pradip K. Jha, Vinay Gupta,oral presentation in Recent Advances in Functional Materials (RAFM-2020) held at Atma Ram Sanatan Dharma College, University of Delhi, India from 5^{th} – 6^{th} November 2020.
13. Oral presentation, "Reconnoitering the capabilities of Al:ZnO thin films for self powered generation devices"Aakash Gupta, Anjali Sharma, Monika Tomar, Vinay Gupta, in Recent Advances in Functional Materials (RAFM-2020) held at Atma Ram Sanatan Dharma College, University of Delhi, India from 5^{th} – 6^{th} November 2020.
14. Poster presentation,"Theoretical simulation of SAW resonator on Lithium Niobate" Manisha Bharati, Lokesh Rana, Monika Tomar, Vinay Gupta, in National conference on physics and chemistry of materials (NCPCM) held at Maharaja Agarsen Institute of Technology, Delhi, India from 22- 23 April 2019.
15. Poster presentation,"Simulation for $LiNbO_3$ SAW device demonstrating transition of modes with normalized thickness", Manisha Bharati, Lokesh Rana, Monika Tomar, Vinay Gupta,in National

conference on smart energy resources and sustainable engineering held at Swami Shraddhanad College, University of Delhi, Delhi, India from 28- 29 March 2019.

16. Poster presentation, "In-situ and post deposition analysis of Laser MBE deposited GaN films at varying nitrogen gas flow", Sheetal Dewan, Monika Tomar, R.P. tandon, Vinay Guptain International Symposium on Functional materials (ISFM-2018): Energy and biomedical applications held at Hotel Shivalik view, Chandigarh, India from 13-15 April, 2018.
17. "Refractive index modulation of SiO_2 thin film grown using GLAD configuration in RF sputtering", Surbhi Jain, Ayushi Paliwal, Vinay Gupta, Monika Tomar, presented poster at 10th National Conference on Solid State Chemistry and Allied Areas (ISCAS 2017) held at Department of Applied Physics, Delhi Technological University, Delhi, India, July 1-3, 2017.
18. "Low-temperature uniform growth of layered MoS_2 structure by PLD technique", Sujit Kumar, Anjali Sharma, Akhilesh Panday, A.K. Kapoor, Monika Tomar and Vinay Gupta, ICNN (international conference on nanoscience and nanotechnology) Lucknow- 2017
19. "Large area uniform growth of layered MoS_2 structure by PLD technique" Sujit Kumar, Anjali Sharma, Akhilesh Panday, A.K. Kapoor, Monika Tomar and Vinay Gupta,3. Iinternational symposium on integrated functionalities (ISIF) - 2017 from 10-13 December 2017.
20. "Laser Molecular Beam Epitaxy (LMBE) Technique grown GaN p-n junction, Sheetal Dewan, Monika Tomar, R.P. Tandon and Vinay Gupta" at 10th National Conference on Solid State Chemistry and Allied Areas (ISCAS-2017) held at Delhi Technological University, 1-3 July 2017
21. "Luminescence studies of Laser MBE grown GaN on ZnO nanostructures, Sheetal Dewan, Monika Tomar, A.K. Kapoor, R.P. Tandon, Vinay Gupta" at SPIE Optics + Photonics 2017 conference held at San Diego, California, USA during 6-10th August 2017.
22. "XPS resolved surface states analysis of ZnO and Ni doped ZnO films for Quantum Well applications, Sheetal Dewan, Monika Tomar, A.K. Kapoor, R.P. Tandon and Vinay Gupta" at the 14th International Meeting on Ferroelectricity (IMF-2017) held at Grand Hyatt San Antonio, San Antonio, Texas, USA during 4-8th September 2017.
23. "Laser Molecular Beam Epitaxy grown GaN/InGaN Quantum Well based LED, Sheetal Dewan, Monika Tomar, R.P. Tandon and Vinay Gupta" at the 6th International Symposium on Integrated Functionalities (ISIF-2017) held at Shagri-La's Eros, New Delhi during 10-13th December 2017.
24. "Growth of KNN thin films for non- linear optical applications", Shweta Sharma, Reema Gupta, Vinay Gupta, Monika Tomar, poster presented at European Material Research Society (EMRS Spring Meeting- 2017), held at Strasbourg, France from May 22 to 26, 2017.
25. "Electrical Studies on KNN thin films", Shweta Sharma, Vinay Gupta, Monika Tomar, poster presented at International conference on Nanoscience and Nanotechnology (ICNN- 2017), held at BBAU, Lucknow, India from September 22 to 24, 2017.
26. "Study of Non linear optical properties in KNN thin films", Shweta Sharma, Reema Gupta, Vinay Gupta, Monika Tomar, poster presented at International Symposium on Integrated Functionalities (ISIF-2017), held at Shangri-La Hotel, Delhi, India from December 10 to 13, 2017.
27. "Development of an optical magnetic field sensor based on Ce and Mn doped BiFeO3 thin films using SPR technique" Anjali Sharma, Ayushi Paliwal, Monika Tomar and Vinay Gupta, International Meeting on Ferroelectricity (IMF) 2017, San Antonio, Texas, September 4-8, 2017
28. "Coplanar waveguide resonator using PZT thin film" Reema Gupta, Lokesh Rana, Anjali Sharma, Monika Tomar and Vinay Gupta, International Meeting on Ferroelectricity (IMF) 2017, held at San Antonio, Texas from September 4-8, 2017
29. " Exploitation of thermoelectric properties of Al:ZnO thin films for self power generation" Anjali Sharma, Monika Tomar and Vinay Gupta, 6th International symposium on Integrated Functionalities (ISIF-2017), 10-13 Dec. 2017, Shangri-La's Eros, New Delhi, India.
30. "Array of four gas sensing elements having integrated microheaters on SiO2/Si membrane for E-nose" Anjali Sharma, Vandana, Avneet Singh, Monika Tomar and Vinay Gupta, 6th International symposium on Integrated Functionalities (ISIF-2017), held from 10-13 December, 2017 at Shangri-La's Eros, New Delhi, India.

31. "Refractive index modulation of SiO_2 nanostructured thin film deposited using Oblique angle sputtering technique", Surbhi Jain, Ayushi Paliwal, Vinay Gupta, Monika Tomar, presented poster at International Conference on Nanoscience and Nanotechnology (ICNN 2017) held at Department of Applied Physics, School of Physical Sciences, Babasaheb Bhimrao Ambedkar University, Lucknow, India, from September 22-24, 2017.
32. "Refractive index modulation of SiO_2 nanostructured thin films deposited using different technique", Surbhi Jain, Ayushi Paliwal, Vinay Gupta, Monika Tomar, presented poster at International Symposium on Integrated Functionalities (ISIF 2017) held at Shangri-La's Eros Hotel, New Delhi, India, from December 10-13, 2017.
33. "Effect of s-polarization and p-polarization on fabrey perot modes in two wave mixing" Reema Gupta, Satchi Kumari, Monika Tomar and Vinay Gupta, International Conference on Nanoscience and Nanotechnology, 22-24 September 2017, Lucknow, India
34. "Passive components for tunable microwave devices using ferrites" Reema Gupta, Lokesh Rana, Monika Tomar and Vinay Gupta International Conference on Nanoscience and Nanotechnology, 22-24 September 2017, Lucknow, India
35. "Ferroelectric photovoltaic properties of multilayered PZT/BFO thin filmsystem", Reema Gupta, Lokesh rana, Anjali Sharma, Monika Tomar and Vinay Gupta, The 14th International meeting on Ferroelectricity, 4th-8th September 2017.
36. "Coplanar waveguide resonator using PZT thin film", Reema Gupta, Lokesh Rana, Anjali Sharma, Michael Sayer, Alois Freundorfer, Monika Tomar, and Vinay Gupta, The 14th International meeting on Ferroelectricity, 4th-8th September 2017.
37. "Development of PZT thin film based multifunctional Energy Harvester", Reema Gupta, Monika Tomar, and Vinay Gupta, Oral and poster presentation, EMRS 2017, 21 May 2017 to 26 May 2017, Strasburg, France.
38. "Microfluidic Electrochemical Biosensors: Towards Point-of-Care Cholesterol Monitoring", Gurpreet Kaur, Monika Tomar, Vinay Gupta, delivered oral presentation at International Symposium on Integrated Functionalities (ISIF), Delhi, India, Dec. 10-13, 2017.
39. "A simple paper based microfluidic electrochemical biosensor for point-of-care cholesterol diagnostics", Gurpreet Kaur, Monika Tomar, Vinay Gupta, delivered oral presentation at European Materials Research Society (E-MRS) Spring Meeting 2017 held in Strasbourg, France from May 22-26, 2017.
40. "To study the effect of MWCNT incorporated into PVDF-Graphite composites for EMI shielding applications", **Krishna Kamal Halder**, Monika Tomar, V. K. Sachdev, Vinay Gupta, presented at, "Indian Association of Solid State Chemists and Allied Scientists," organized by department of Applied Physics, Delhi Technological University, Delhi, India, on 1-3rd July 2017.
41. "To study the zinc metal powder filled PVDF composite for EMI shielding applications", **Krishna Kamal Halder**, Monika Tomar, V. K. Sachdev, Vinay Gupta, presented at, "International conference on Nanoscience and Nanotechnology," organized by department of Applied Physics, School of Physical Sciences, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow-226025, U.P., India, on 22-24th September 2017.
42. "Study of electrical, dielectric and EMI shielding behaviour of copper metal, copper ferrite and PVDF composite" **Krishna Kamal Halder**, Rakesh Kumar Sonker, V. K. Sachdev, Monika Tomar, S.K. Sharma, and Vinay Gupta, presented at, "International Symposium on Integrated Functionalities," organized under aegis of Materials Research Society of India, Delhi, India, on 10-13th December 2017.
43. "Development of Electrochemical Cortisol Immunosensors based on RF sputtered NiO thin films", Nidhi Dhull, Gurpreet Kaur, Vinay Gupta, Monika Tomar; at *International Conference on Nanoscience and Nanotechnology* (ICNN-2017), held at Lucknow, India, September 22-24, 2017
44. Delivered and won best oral presentation award "Electrochemical detection of Cortisol using sputtered NiO microdiscs based immunosensor", Nidhi Dhull, Gurpreet Kaur, Vinay Gupta,

Monika Tomar; at *International Symposium on Integrated Functionalities* (ISIF), 2017 held at New Delhi, India from December 10-13, 2017.

45. "Development of an electrochemical microfluidic biosensor for point-of-care cholesterol monitoring", Gurpreet Kaur, Monika Tomar, Vinay Gupta, presented poster at 5th International Conference on Bio-sensing Technology (BITE 2017), Riva del Garda, Italy, May 7-10, 2017.
46. "Magneto-optic studies of Pulsed Laser deposited Ni doped ZnO films, Sheetal Dewan, Ayushi Paliwal, Monika Tomar, R.P.Tandon& Vinay Gupta" at International conference of Nanomaterials and Nanotechnology (ICANN-2016), Jamia Milia Islamia, 4-5th November, 2016.
47. "GaN thin film based p-n junction diode by Laser MBE (LMBE) Technique, Sheetal Dewan, Monika Tomar, R.P. Tandon and Vinay Gupta" at International Conference on Technologically Advanced Materials and Asian Meeting on Ferroelectricity (ICTAM-AMF10) held at University of Delhi University during 7-11th November 2016.
48. "Nanostructured NiO based mediator free biosensor for total cholesterol and low density lipoprotein detection", Gurpreet Kaur, Monika Tomar, Vinay Gupta, presented poster at 26th Anniversary World Congress on Biosensors (Biosensors 2016), Gothenburg, Sweden from May 25-27, 2016.
49. "Nanostructured NiO thin film based electrochemical DNA biosensor for detection of Meningitidis", Gurpreet Kaur, Shibu Saha, Monika Tomar, Vinay Gupta, presented poster at 16th International Meeting on Chemical Sensors (IMCS 2016) held in Jeju Island, Korea from July 10-14, 2016.
50. "Detection of Breast cancer in Human sera based on SnO_2 thin film electrode", Gurpreet Kaur, Kashima Arora, Monika Tomar, Vinay Gupta, presented poster at 16th International Meeting on Chemical Sensors (IMCS 2016) held in Jeju Island, Korea from July 10-14, 2016.
51. "Detection of Meningitidis DNA by a Microfluidic Surface Plasmon Resonance Biosensor", Gurpreet Kaur, Lokesh Rana, Monika Tomar, Vinay Gupta, presented poster at International Conference on Technologically Advanced Materials & Asian Meeting on Ferroelectricity (ICTAM-AMF10) held in Delhi, India from November 7-11, 2016.
52. "Electromagnetic Interference Shielding of Graphite, MWCNT Acrylonitrile Butadiene Styrene Composites", **Krishna Kamal Halder**, Monika Tomar, V. K. Sachdev, Vinay Gupta, presented at**, "**National conference on multifunctional advanced materials**,"** held at Shoolini University, Solang, Himachal Pradesh, India, from 11-13th may 2016.
53. "Electromagnetic Interference Shielding Effect of Graphite, Polyvinylidene fluoride Composites", **Krishna Kamal Halder**, Monika Tomar, V. K. Sachdev, Vinay Gupta, presented at, "International conference on advances in Nanomaterials and Nanotechnology (ICANN-2016)**,"** organized by Centre for nanoscience and nanotechnology, Jamia Millia Islamia, New Delhi, India, on 4-5th November 2016.
54. "Effect of Graphite and MWCNT in Polymer Composites for Electromagnetic Interference Shielding", ", **Krishna Kamal Halder**, Surender kumar sharma, Monika Tomar, V. K. Sachdev, Vinay Gupta, presented at, "International conference on Technologically advanced materials & Asian meeting on ferroelectricity," jointly organized by the society for technologically advanced materials of India (STAMI) and University of Delhi, Delhi, India, on 7-11th November 2016.
55. "Effect of growth kinetics on Magneto-electric properties of PZT/Ni system"International Conference on Technologically Advanced Materials & Asian Meeting on ferroelectricity (ICTAM-AMF10), at University of Delhi, Delhi, India, 7-11 November 2016
56. "Coplanar waveguide resonator using PLZT thin film"International Conference on Technologically Advanced Materials & Asian Meeting on ferroelectricity (ICTAM-AMF10), at University of Delhi, Delhi, India, 7-11 November 2016
57. Participated and delivered Talk in Joint IEEE International symposium on the applications of Ferroelectrics (ISAF), European Conference on Applications on Polar Dielectrics (ECAPD), and Workshop on Piezoresponse force microscopy (PFM), Darmstadt, Germany, 21-25 August 2016. Title of Talk: "Prominent photo-voltaic response in multiferroic BFO/BTO heterostructures"

58. “PLZT thin film based CPW microwave resonator”, Joint IEEE International symposium on the applications of Ferroelectrics (ISAF), European Conference on Applications on Polar Dielectrics (ECAPD), and Workshop on Piezoresponse force microscopy (PFM), Darmstadt, Germany, 21-25 August 2016.
59. “Multiferroic PZT/Ni cantilevers for magnetoelectric applications”, Joint IEEE International symposium on the applications of Ferroelectrics (ISAF), European Conference on Applications on Polar Dielectrics (ECAPD), and Workshop on Piezoresponse force microscopy (PFM), Darmstadt, Germany, 21-25 August 2016.
60. “MEMS based microheaters integrated gas sensors”, Anjali Sharma, Avneet Singh, Anil Arora, Monika Tomar and Vinay Gupta, **International Meeting On Chemical Sensors (IMCS)**, held at Jeju Island, South Korea on July 10-13 2016.
61. “Carbon Monoxide (CO) Optical Gas Sensor Based on ZnO Thin Films” Ayushi Paliwal, Anjali Sharma, Monika Tomar and Vinay Gupta, **International Meeting On Chemical Sensors (IMCS)**, held at Jeju Island, South Korea on July 10-13 2016.
62. “SnO_2 Thin Film Sensor Having Nio Catalyst for So2 Detection with Improved Response Characteristics” Punit Tyagi Anjali Sharma, Monika Tomar and Vinay Gupta, **International Meeting On Chemical Sensors (IMCS)**, held at Jeju Island, South Korea on July 10-13 2016.
63. “Reduced Graphene Oxide-SnO_2 Nanocomposite SO_2 Gas Sensor”, Punit Tyagi Anjali Sharma, Monika Tomar and Vinay Gupta, **International Meeting On Chemical Sensors (IMCS)**, held at Jeju Island, South Korea on July 10-13 2016.
64. “LTA zeolite-metal oxide based carbon monoxide gas sensor”, Avneet Singh, Hanan Mir, Rudra Chaudhary, Anjali Sharma, Monika Tomar and Vinay Gupta, **International Workshop on Thin-films for Electronics, Electro-Opics, Energy, and Sensors (TFE3S)**, held in Suzhou, Peoples Republic of China on July 4-6, 2015.
65. “GLAD assisted SnO_2 columnar structures for efficient detection of CO gas”**,**Avneet Singh, Anjali Sharma, Monika Tomar, Vinay Gupta,**National Conference on Microscopy and Advances in Material Sciences** held at Jammu University, 2-4 March 2015
66. “Columnar growth of SnO_2 thin film using GLAD configuration for CO gas sensing” A.Singh, A. Sharma, M. Tomar, V.Gupta, 18th National Seminar on Ferroelectrics & Dielectrics (NSFD), 3-5 Nov 2014, Manipur University, Manipur
67. “36^o YX $LiTaO_3$ based Love wave SAW sensors”, L.Rana, R.Gupta, A.Sharma, M.Tomar, Vinay Gupta, 18th National Seminar on Ferroelectrics and Dielectrics (NSFD), 3-5 Nov 2014, Manipur University, Imphal, Manipur.
68. “Development of ferroelectric PLZT thin film based Microwave Resonator for Wireless Communication”, Reema Gupta, Lokesh Rana, Anjali Sharma, Monika Tomar, Vinay Gupta, 18th National Seminar on Ferroelectrics and Dielectrics (NSFD), 3-5 Nov 2014, Manipur University, Imphal, Manipur
69. Best oral presentation, “Sensitive Surface Plasmon Resonance based Glucose biosensor using ZnO/Au bilayered structure”, Ayushi Paliwal, Anjali Sharma, Monika Tomar, Vinay Gupta, 3rd International Conference NANOCON 2014, Bharati Vidyapeeth Univ., Pune, 14-15 Oct.2014.
70. “Effect of ZnO doping on structural and optical properties of NiO”, Sheetal Dewan, Manisha Tyagi, Anjali Sharma, Monika Tomar and Vinay Gupta
71. “NiO nanostructures and thin films for functional devices”, Monika Tomar, Invited Talk and Session chair, National conference on multifunctional advanced materials, Shoolini University, Solan, 10-13 June 2014
72. “Micro heater based NO_2 gas sensors”, Anjali Sharma, Avneet Singh, Monika Tomar, Vinay Gupta, 2nd National Conference on. Multifunctional Advanced Materials (MAM-2014), 11-13 June 2014, Shoolini University, Solan, HP.
73. “Effect of UV illumination on NO_2 gas sensing based on SAW devices” Lokesh Rana, Reema Gupta, Kajal Jindal, Anjali Sharma, Vinay Gupta, Monika Tomar, 2nd National Conference

on. Multifunctional Advanced Materials (MAM-2014). 11-13 June 2014, Shoolini University, Solan, HP.

74. "Low temperature operated SnO_2 based SO_2 gas sensor", P.Tyagi, A.Shrama, M.Tomar, Vinay Gupta, 2nd National Conference on Multifunctional Advanced Materials (MAM-2014), 11-13 June 2014, Shoolini University, Solan, HP.
75. "Magnetoelectric effect in PZT thin film deposited on Nickel using Chemical Solution Deposition Technique", Reema Gupta, Anjali Shrama, Monika Tomar, Vinay Gupta, 2nd National Conference on. Multifunctional Advanced Materials (MAM-2014), 11-13 June 2014, Shoolini University, Solan, HP.
76. "PANI/Ni doped SnO_2 thin film based novel NO_2 gas sensor " Rakesh Kumar Sonker, Anjali Sharma, Monika Tomar, B.C.Yadav, Vinay Gupta, 2nd National Conference on Multifunctional Advanced Materials (MAM-2014), 11-13 June 2014, Shoolini University, Solan, HP.
77. Best Poster award, Crystal structure and ferroelectric properties of Mn substituted $BiFeO_3$ thin films", Surbhi Gupta, Anjali Sharma, Monika Tomar, Madhuparna Pal, Ruyan Guo, Amar Bhalla and Vinay Gupta, 2nd National Conference on Multifunctional Advanced Materials (MAM) 2014, Shoolini University, Solan, 11-13 June 2014.
78. Best Poster award, "A novel reagentless cholesterol biosensor based on sputtered NiO thin film", Gurpreet Kaur, Vinay Gupta and Monika Tomar, 2nd National Conference on Multifunctional Advanced Materials (MAM) 2014, Shoolini University, Solan, 11-13 June 2014.
79. *Best Poster Award, "Synthesis of Nanocrystalline Tin oxide in Polyaniline Matrix and its Application as NO_2 Gas Sensor", Rakesh Kumar Sonker, Anjali Sharma, Monika Tomar, Balchandra Yadav, Vinay Gupta, 2nd LUCKNOW SCIENCE CONGRESS, BBAU, Lucknow, MARCH 27-28, 2014.*
80. "Novel SnO_2 thin film heterostructures using MgO and V_2O_5 nanocatalysts for detection of SO_2 gas", Punit Tyagi, Anjali Sharma, Monika Tomar and Vinay Gupta, Best poster presentation award, National Conference on Synthesis Characterization and Application of Advanced Nanomaterials (NCSCAAN-2014), 17-19 January 2014. Hindustan Engineering University, Agra, Uttar Pradesh
81. Best oral presentation. "Dielectric properties of SnO_2 thin film using SPR technique", Ayushi Paliwal, Anjali Sharma, Monika Tomar, Vinay Gupta, Advances in Material Sciences For Energy applications (AMSEA 2014), UPES campus, Dehradun, 9–10 January 2014.
82. "One magnon excitation in antiferromagnetically ordered NiO nanoparticles", M.Tyagi, Monika Tomar and Vinay Gupta, International conference on magnetic materials and applications(MagMa-2013), IIT Guwahati, 5-7 Dec. 2013.
83. "SnO_2 heterojunctions for detection of NO_2 gas at low operating temperature" Anjali Sharma, Monika Tomar and Vinay Gupta, (Oral), International Conference on Nanoscience and Nanomaterials, Lucknow, 18-20 November 2013.
84. "SnO_2 thin film based methane gas sensor", Avneet Singh, Anjali Sharma, Monika Tomar and Vinay Gupta, (Poster), International Conference on Nanoscience and Nanomaterials, Lucknow, 18-20 Nov 2013.
85. Best Postar Award, "MEMs based SnO_2 gas sensor for trace level detection of NO_2 gas" Anjali Sharma, Shaan Ameer, Avneet Singh, Reema Gupta, Lokesh Rana, Anil Arora, Monika Tomar and Vinay Gupta, (Poster), International Conference on Nanoscience and Nanomaterials, Lucknow, 18-20 November 2013.
86. "Handheld LPG Gas Sensor" Punit Tyagi, Anjali Sharma, Monika Tomar, Vinay Gupta, (Poster), International Conference on Nanoscience and Nanomaterials, Lucknow, 18-20 November 2013.
87. "Efficient room temperature detection of NO_2 gas using a novel sensor structure based on SnO_2-PAni composite" Rakesh Kumar Sonker, Anjali Sharma, Monika Tomar, Vinay Gupta and B.C. Yadav, (Poster), International Conference on Nanoscience and Nanomaterials, Lucknow, 18-20 November 2013.

88. "Low temperature operated NO_2 gas sensor based on SnO_2-ZnO nanocomposite thin film", Rakesh Kumar Sonker, Anjali Sharma, Monika Tomar , Vinay Gupta and B.C. Yadav, presented poster at International Conference on Nanoscience and Nanomaterials, Lucknow, 18-20 November 2013.
89. Best Poster Award, "Zinc Oxide and Tin Oxide Nanocrystalline Composites for Low Temperature Operated NO_2 Gas Sensor", R.K. Sonker, Anjali Sharma, Monika Tomar, Balchandra Yadav, Vinay Gupta, 1st Lucknow Science Congress, Babasahed Bhimrao Ambedkar University, Lucknow, Uttar Pradesh, 20-21 March 2013,
90. "NiO thin film P-N homojunction for detection of Ultra Violet photons", Manisha Tyagi, Monika Tomar and Vinay Gupta, presented at International Conference on Emerging Technologies: Micro to Nano 2013 (ETMN- 2013), BITS Pilani, Goa, India from 23th -24th February, 2013
91. "Reagentless uric acid biosensor based on ZnO thin film loaded with CuO nanoclusters", K. Jindal, **Monika Tomar** and Vinay Gupta, 1st winter workshop on Engineering at Nanoscale: from materials to Bio-sensors, IIT Indore, 10-12 Dec. 2012.
92. "Nano-NiO based Reagent less Urea Biosensor", Manisha Tyagi, Monika Tomar and Vinay Gupta, 1st winter workshop on Engineering at Nanoscale: from Materials to Bio-sensors, IIT indore from 10th -12th December 2012.
93. "Growth of thick ZnO film for acoustic sensors and SAW devices", K. Jindal, Anjali Sharma, Mahant Prasad, Arti Arora, **Monika Tomar** and Vinay Gupta, presented (best poster award) at annual meeting of Material Research Society of India (MRSI), Thapar University, Patiala, 13-15 Feb.2012.
94. "Room Temperature ferromagnetism in N doped ZnO thin films and its enhanced stabilization by Co doping", K. Jindal, **Monika Tomar**, R.S.Katiyar& Vinay Gupta, presented at annual meeting of Material Research Society of India (MRSI), Thapar University, Patiala, 13-15 Feb.2012.
95. "Influence of post deposition annealing on structural, optical and electrical characteristics of NiO/ZnO thin film hetero-junction", Manisha Tyagi, Monika Tomar and Vinay Gupta, AGM of Material Research Society of India (MRSI-2012), Thapar University, Patiala, 13-15 Feb. 2012.
96. "NiO thin films: An efficient matrix for detection of glucose & uric acid", Monika Tomar, Manisha Tyagi, K.Arora& Vinay Gupta, AGM of Material Research Society of India (MRSI-2012), Thapar University, Patiala, 13-15 Feb. 2012
97. "Room temperature ferromagnetism in N doped ZnO thin films deposited by PLD", K. Jindal, **Monika Tomar**, R.S. Katiyar and Vinay Gupta, presented at DAE-BRNS 6th National symposium on Pulsed Laser Deposition of thin films and Nanostructured Materials (PLD-2011), I.I.Sc., Bangalore, 9-11 Nov. 2011
98. "Uric acid bio-sensor based on Pulsed laser deposited CuO thin film", K. Jindal, Kasima Arora, **Monika Tomar** and Vinay Gupta, presented at DAE-BRNS 6th National symposium on Pulsed Laser Deposition of thin films and Nanostructured Materials (PLD-2011), I.I.Sc., Bangalore, 9-11 Nov. 2011
99. "Orthogonal detection of ammonia using ZnO based Surface Acoustic Wave sensor", V. Bhaskar Raj, **M.Tomar**, A.T.Nimal, Y.Parmar, M.U.Sharma & V.Gupta, Lucknow J.Science Vol.8 (2011), P.592-96 (print Issn:0974-8121, online ISSN:0974-813X) Proc. 16th National Seminar on Physics & Technology of Sensors (NSPTS-16), 11-13 Feb. **2011. Points- 3.**
100. "Trace level detection of NO_2 gas using SnO_2 thin film with different catalysts", A.Sharma, **Monika Tomar**& V.Gupta, Lucknow J.Science Vol.8 (2011), P.597-602 (print Issn:0974-8121, online ISSN:0974-813X) Proc.16th National Seminar on Phys.& Tech.of Sensors,11-13 Feb. **2011. Points- 3.**
101. "NiO inorganic matrix for efficient detection of glucose in physiological range", Manisha Tyagi, **M.Tomar**, K.Sreenivas & V. Gupta, Lucknow J.Science Vol.8 (2011),P.587-91 (print Issn: 0974-8121) Proc.16 National Seminar on Phys.& Tech.of Sensors, Feb.**2011. Points- 3.**
102. "Growth of multiferroic BFO thin films for sensing applications", S.Gupta, **Monika Tomar**& Vinay Gupta, Lucknow J.Science Vol.8 (2011), Pg. 581-86 (print Issn: 0974-8121,

online ISSN: 0974-813X) Proc.16th National Seminar on Physics & Technology of Sensors, 11-13 Feb**. 2011. Points- 3.**

103. "Zinc Oxide thin film based bio-electrodes for Biosensor Applications", **Monika Tomar**, Shibu Saha, K.Sreenivas& Vinay Gupta presented at 16th National Seminar on Physics and Technology of Sensors held at Lucknow University from 11-13 February **2011**.
104. "Detection of low intensity UV radiation using Surface acoustic wave Oscillator", Daipayan Dasguptaj, **Monika Tomar**,K. Sreenivas and Vinay Gupta, presented at the 16th National Seminar on Physics and Technology of Sensors, Lucknow University, 11-13 Feb.**2011**.
105. "N:ZnO Thin Film – Surface Plasmon Resonance (SPR) Temperature Sensor", Kajal Jindal, **Monika Tomar**,K. Sreenivas and Vinay Gupta, presented at the 16th National Seminar on Physics and Technology of Sensors held at Lucknow University from 11-13 February **2011**.
106. "Efficient detection of uric acid using SnO_2 matrix", Kashima Arora, **Monika Tomar**,K. Sreenivas and Vinay Gupta, presented at the 16th National Seminar on Physics and Technology of Sensors held at Lucknow University from 11-13 February **2011**.
107. "Growth of multiferroic BFO thin films for Sensor Applications", Surabhi Gupta, **Monika Tomar**,K. Sreenivas and Vinay Gupta, presented at the 16th National Seminar on Physics and Technology of Sensors held at Lucknow University from 11-13 February **2011**.
108. "NiO inorganic thin film matrix for detection of glucose in physiological range", M.Tyagi, K. Arora, N.Batra, **Monika Tomar**, K. Sreenivas & V.Gupta, presented at the 16th National Seminar on Physics and Technology of Sensors held at Lucknow University from 11-13 February **2011**.
109. "Trace Level detection of NO_2 gas using SnO_2 thin film by using different catalysts", Anjali Sharma, **Monika Tomar** and Vinay Gupta, presented at the 16th National Seminar on Physics and Technology of Sensors held at Lucknow University from 11-13 February **2011**.
110. "Studies on optical and dielectric properties of (006) $LiNbO_3$ thin films grown by pulsed laser deposition", **Monika Tomar**, Swati Shandilya, K. Sreenivas and Vinay Gupta, presented at the 7th PANE Conference 2010, Department of Physics, Manipur University from 5-6 October **2010**.
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