

Monika Tomar

Professor, Department of Physics, Miranda House, University of Delhi

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 LiNbO₃ 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:** ~ 17Years**Research Experience:** ~ 18Years (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	Department of Physics, University of Puerto Rico, San Juan, 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: 358(258-Refereed Journals, 100-International/National Conference Proceedings)**Total citation >4000****h-index** = 35 (scopus); 35 (Google Scholar); i10-index= 144 (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: Seven students are pursuing Ph.D (1 as co-supervisor) and four 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.	DRDO	Development of process and evaluation of electron suppression coating on the grids used in TWTs.	PI	December 2021-2022	23.58
2.	DST	Realization of MEMS based Dual Energy Harvester using ferroelectric and ferromagnetic thin film layered structures [CRG/2019/001709]	PI	December 2019-2022	51.48
3.	DRDO	Fabrication of Lamb Wave Devices on SiO ₂ /Si Membrane for strategic applications [ERIP/ER/201706006/M/01/1749]	PI	March 2019-2022	428.03
4.	DST	Development of ferroelectrics thin film based photovoltaics cell [EMR/2017/000194]	PI	August 2017-2020	31.54
5.	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
6.	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
7.	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
8.	DRDO	Feasibility study for fabrication of Air bridges by gold electroplating[A SemiT/CARS/02/DU/2017-18]	Co-PI	July 2017- Oct 2018	9.42
9.	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
10.	DRDO	Molecular Modelling of Halons alternatives [CFEES/TCP/CARS/ NOMHA - FCPCG/CC/09/2013]	Co-PI	April 2015- Dec.2017	274.134
11.	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
12.	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

13.	GAIL (Min. of coal & Petroleum)	Development of metal oxide thin film 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
14.	DST Fast Track Young Scientist	Development of MO _x (M=Te, Se, Ge) exhibiting negative TCD for SAW devices [SR/FTP/PS—58/2009]	PI	Nov. 2010 – 13	18.24
15.	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
16.	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
17.	DIT (Min. Inf. Tech.& Commn.)	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
18.	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
19.	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
20.	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 “Table-top Surface Plasmon Resonance (SPR) set up” to an industry “Optiregion, Ashok Vihar, Delhi-110052” for its commercialization on 17-02-2015.
- **Indian Patent (Applied 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, RizwanaRehsawla, Surbhi Jain, Savita Sharma, Monika Tomar, Vinay Gupta. (Application No.- TEMP/E-1/24707/2020-DEL and Reference No. 202011022741).
- **Indian Patent (Applied on 30th May, 2020):**Electrochemical based genosensor for the detection of Puccinia striiformis f. tritici, causal agent of yellow rust in wheat, RizwanaRehsawla, 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 (Applied on 30 March 2019):**A novel cost effective method of fabrication of inverted Light Emitting Diodes. Vinay Gupta, Monika Tomar, Subash Pai and Sheetal Dewan. (Application No. 201911012925)
- **Indian Patent (Published on 27 August 2020):**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 (Published on 27 August 2020):** 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**.
- **CNR Young researcher award for best Oral Presentation**, “Effect of hybrid nanostructures of SnO₂ with MWCNTS and Graphene Oxide on room temperature detection of NO₂ gas” in World Nano Congress On advanced Science and Technology (WNCST-2021) held Vellore Institute of Technology, Vellore, India from 8th – 13th March 2021.
- **Best Presentation award**, Oral presentation, “Influence of magnetic ordering on the electronic, optical and magnetic properties of Bi₂Fe₄O₉” in Recent Advances in Functional Materials (RAFM-2020) held at Atma Ram Sanatan Dharma College, University of Delhi, India from 5th – 6th 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 5th – 6th November 2020.
- **Best Poster award**, Poster presentation, “Theoretical simulation of SAW resonator on Lithium Niobate” in National conference on physics and chemistry of materials (NCPDM) held at Maharaja Agarsen Institute of Technology, Delhi, India from 22- 23 April 2019.
- **Best Poster award**, Poster presentation, “Simulation for LiNbO₃ 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- 29 March 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 Shivalikview, 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 NO₂ gas” in 2nd Conference of Academy of Microscope Science & Technology, held at Thapar University, Patiala, India from 25- 27 February 2016.
- **Best poster award**, Poster presentation, “Novel SnO₂ thin film heterostructures using MgO and V₂O₅ nanocatalyst for detection of SO₂ gas” in National 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" in 2nd National conference on multifunctional advanced materials held at Shoolini University, Solan, HP, India from 10-13 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 NO₂ 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 SnO₂ gas sensor for trace level detection of NO₂ 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 NO₂ 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”, in Material 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 10 th 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.
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 8 th 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:

- Member (2014-16), Board of Research Studies, Faculty of Science, Delhi University.
- 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).

Other academic activities:

- 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:

- Member, IQAC (2021- till now)
- Teacher Representative of Governing Body, Miranda House (2016-2017)
- 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 “Development of Laser MBE grown GaN and InGaN heterostructures and quantum wells for short wavelength photonic devices” at “International conference on Advanced Functional Materials and Devices”, Atma Ram Sanatan Dharma College, University of Delhi, 3-5 March 2021 via online mode.
- **Invited Talk** on “Exploring the capabilities of wide band gap 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, Sonapat, 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**, “Magnetolectric 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 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 the Dept. 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 “Indegeniouslydeveloved 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 on 21 May 2020 to 27 May 2020 by 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 RamSanatan 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 31 August 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 Workop 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.	AkshitaRajan	15-10-2010	Development of ZnO thin films for UV photo detectors	Thesis Awarded
2.	ManviTak	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	Under progress
5.	Shweta Sharma	20-12-2016	Development of Lead Free Ferroelectrics based energy harvesters	Under progress
6.	Nidhi Dhull	22-12-2016	Growth of functional oxide thin films for device applications	Under progress
7.	Manisha Bharti	26-11-2018	Development of Acoustic wave based sensing platform	Under progress
8.	Gunjan Yadav	07-01-2019	Wide band-gap semiconducting thin films for photonic devices	Under progress
9.	Babita Sharma	13-04-2021	Development of Functional materials for energy applications	Under progress
10.	Rakesh Kumar Sonkar	09-01-2011	Growth and Characterization of nanostructured 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 and other 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**”, Edited by Avinash Konkani, Rabindranath Bera and Samrat Paul, (2018), Publisher: Springer, Singapore (DOI:10.1007/978-981-10-4762-6), (ISBN: Online- 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 Gupta Chapter 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 BiI₃ 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)

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

2021

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94. "Enhanced photo-response of thermally treated Zinc oxide Ultra-violet photon detector with furnace method & pulsed laser irradiation", R.Menon, A.Chowdhuri, **Monika Tomar**, K.Sreenivas& Vinay Gupta, Proc. IEEE Sensors 2009, Christchurch, New Zealand, 25-28 Oct.2009, pp 437 – 40. **Points- 3. ISSN: 1930-0395**
95. "Temperature coefficient of elastic constants of sputtered TeO₂ thin film for zero TCD SAW Devices", N. Dewan, **Monika Tomar**, K. Sreenivas, Vinay Gupta, **Proc. IEEE Ultrasonics Symp.**, Netherlands, 18 – 21 September 2005, pp 1311-1314. **Points- 3. ISSN: 1051-0117**
96. "Material parameters of rf magnetron sputtered SiO₂ thin films for temperature stable SiO₂/LiNbO₃ SAW devices", **Monika Tomar**, Vinay Gupta &K.Sreenivas, (Oral Presentation), Proc. IEEE Ultrason. International Symp.,Hawaii, USA, 2003, pp. 204 – 07. **Points- 5. ISSN: 1051-0117**

97. "Improvements in the temperature stability of an IDT/ZnO/fused-quartz thin film SAW device with ZnO over-layer", **Monika Tomar**, Vinay Gupta and K. Sreenivas, (Oral Presentation), Proc. **IEEE Ultrason. International Symp., Hawaii, USA, 2003**, pp. 901 – 04. **Points- 5. ISSN: 1051-0117**
98. "Waveguiding in highly c-axis oriented zinc oxide thin films deposited by rf magnetron sputtering", N. Mehan, **Monika Tomar**, Vinay Gupta and A.Mansingh, 6th Intl. conf. on Opto-electronics, Fibre Optics & Photonics (**Photonics 2002**), TIFR, Mumbai, 16-18 Dec. **2002**.
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100. "Si/SiO₂/LiNbO₃/IDT/LiTaO₃ layered structure with reduced TCD for Acousto-Optic Device application", Photonics-2000, **Monika Tomar** and K. Sreenivas, **Proc. of Photonics-2000 Intl. Conf.**, IIT Kharagpur, INDIA, Dec. **2000**, pp. 771-773. **Points- 5. ISSN:**

Papers in International/National Conferences

1. "Influence of magnetic ordering on the electronic, optical and magnetic properties of Bi₂Fe₄O₉" 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 5th – 6th November 2020.
2. 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 5th – 6th November 2020.
3. 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.
4. Poster presentation, "Simulation for LiNbO₃ 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.
5. 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 Gupta in International Symposium on Functional Materials (ISFM-2018): Energy and biomedical applications held at Hotel Shivalikview, Chandigarh, India from 13-15 April, 2018.
6. "Refractive index modulation of SiO₂ 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.
7. "Low-temperature uniform growth of layered MoS₂ 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
8. "Large area uniform growth of layered MoS₂ structure by PLD technique" Sujit Kumar, Anjali Sharma, Akhilesh Panday, A.K. Kapoor, Monika Tomar and Vinay Gupta, 3. International symposium on integrated functionalities (ISIF) - 2017 from 10-13 December 2017.
9. "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

10. "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.
11. "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.
12. "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 Shangri-La's Eros, New Delhi during 10-13th December 2017.
13. "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.
14. "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.
15. "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.
16. "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
17. "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
18. "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.
19. "Array of four gas sensing elements having integrated microheater 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.
20. "Refractive index modulation of SiO₂ 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.
21. "Refractive index modulation of SiO₂ 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.
22. "Effect of s-polarization and p-polarization on Fabry 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
23. "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
24. "Ferroelectric photovoltaic properties of multilayered PZT/BFO thin film system", Reema Gupta, Lokesh Rana, Anjali Sharma, Monika Tomar and Vinay Gupta, The 14th International meeting on Ferroelectricity, 4th-8th September 2017.

25. "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.
26. "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.
27. "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.
28. "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.
29. "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.
30. "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.
31. "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.
32. "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
33. 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.
34. "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.
35. "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.
36. "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.
37. "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.
38. "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.
39. "Detection of Breast cancer in Human sera based on SnO₂ 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.
 40. "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.
 41. "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.
 42. "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.
 43. "Effect of Graphite and MWCNT in Polymer Composites for Electromagnetic Interference Shielding", ", **Krishna Kamal Halder**, Surender kumarsharma, 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.
 44. "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
 45. "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
 46. 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"
 47. "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.
 48. "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.
 49. "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.
 50. "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.
 51. "SnO₂ 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.

52. "Reduced Graphene Oxide-SnO₂ Nanocomposite SO₂ 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.
53. "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-Optics, Energy, and Sensors (TFE3S)**, held in Suzhou, Peoples Republic of China on July 4-6, 2015.
54. "GLAD assisted SnO₂ 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
55. "Columnar growth of SnO₂ 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
56. "36° YX LiTaO₃ 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.
57. "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
58. 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.
59. "Effect of ZnO doping on structural and optical properties of NiO", Sheetal Dewan, Manisha Tyagi, Anjali Sharma, Monika Tomar and Vinay Gupta
60. "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
61. "Micro heater based NO₂ 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.
62. "Effect of UV illumination on NO₂ 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.
63. "Low temperature operated SnO₂ based SO₂ gas sensor", P. Tyagi, A. Sharma, M. Tomar, Vinay Gupta, 2nd National Conference on Multifunctional Advanced Materials (MAM-2014), 11-13 June 2014, Shoolini University, Solan, HP.
64. "Magnetolectric effect in PZT thin film deposited on Nickel using Chemical Solution Deposition Technique", Reema Gupta, Anjali Sharma, Monika Tomar, Vinay Gupta, 2nd National Conference on Multifunctional Advanced Materials (MAM-2014), 11-13 June 2014, Shoolini University, Solan, HP.
65. "PANI/Ni doped SnO₂ thin film based novel NO₂ 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.
66. Best Poster award, Crystal structure and ferroelectric properties of Mn substituted BiFeO₃ 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.
67. 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.
68. *Best Poster Award*, “*Synthesis of Nanocrystalline Tin oxide in Polyaniline Matrix and its Application as NO₂ Gas Sensor*”, Rakesh Kumar Sonker, Anjali Sharma, Monika Tomar, Balchandra Yadav, Vinay Gupta, 2nd LUCKNOW SCIENCE CONGRESS, BBAU, Lucknow, MARCH 27-28, 2014.
 69. “Novel SnO₂ thin film heterostructures using MgO and V₂O₅ nanocatalysts for detection of SO₂ 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
 70. Best oral presentation. “Dielectric properties of SnO₂ 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.
 71. “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.
 72. “SnO₂ heterojunctions for detection of NO₂ gas at low operating temperature” Anjali Sharma, Monika Tomar and Vinay Gupta, (Oral), International Conference on Nanoscience and Nanomaterials, Lucknow, 18-20 November 2013.
 73. “SnO₂ 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.
 74. Best Postar Award, “MEMs based SnO₂ gas sensor for trace level detection of NO₂ 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.
 75. “Handheld LPG Gas Sensor” Punit Tyagi, Anjali Sharma, Monika Tomar, Vinay Gupta, (Poster), International Conference on Nanoscience and Nanomaterials, Lucknow, 18-20 November 2013.
 76. “Efficient room temperature detection of NO₂ gas using a novel sensor structure based on SnO₂-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.
 77. “Low temperature operated NO₂ gas sensor based on SnO₂-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.
 78. Best Poster Award, “Zinc Oxide and Tin Oxide Nanocrystalline Composites for Low Temperature Operated NO₂ 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,
 79. “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
 80. “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.
 81. “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.
 82. “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.
83. "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.
 84. "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.
 85. "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
 86. "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
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