

CURRICULUM VITAE



PROF. SUSHIL KUMAR

Department of Physics

Chaudhary Devi Lal University, Sirsa

CURRICULUM VITAE

1. **Name** : **Prof. Sushil Kumar**
2. **Designation** : **Dean**, Faculty of Physical Sciences
Dean, University School for Graduate Studies
3. **Institution** : Chaudhary Devi Lal University, Sirsa
4. **Date of birth** : September 01, 1968
5. **Nationality** : Indian
6. **Category, Sex, Marital status** : General, Male, Married
7. **Father's name** : Shri Raj Pal Singh
8. **Address Office** : Department of Physics,
Chaudhary Devi Lal University,
Sirsa -125 055, Haryana, India
Phone: +91-9466739217
Email: sushil_phys@rediffmail.com
sushil.phys@gmail.com

Residence : H. No. E-11, University Campus,
Chaudhary Devi Lal University,
Sirsa-125055, Haryana, India

9. Academic qualifications :

Ph. D.	C. C. S. University, Meerut	2002	-----	Physics (Materials Science)
M. Phil.	C. C. S. University, Meerut	1992	First	Physics
M. Sc.	C. C. S. University, Meerut	1989	First	Physics (with Electronics)
B. Sc.	C. C. S. University, Meerut	1987	First	Physics, Chemistry, Mathematics
Intermediate	U. P. Board, Allahabad	1985	First	Hindi, Eng., Maths., Phys., Chem.
High school	U. P. Board, Allahabad	1983	First	Hindi, Eng., Maths., Sci., Bio.

10. Professional experience :

(a) Teaching experience : 25 years

Professor	Ch. Devi Lal University, Sirsa (Haryana)	15.09.2013	till date
Assoc. Prof.	Ch. Devi Lal University, Sirsa (Haryana)	15.09.2010	14.09.2013
Lecturer (S.G.)	Ch. Devi Lal University, Sirsa (Haryana)	15.09.2007	14.09.2010
Lecturer	G. N. G. College, Yamuna Nagar (Haryana)	31.10.2001	14.09.2007
Lecturer	G. G. D. S. D. College, Palwal (Haryana)	28.10.1997	30.10.2001
Lecturer	G. N. G. College, Ludhiana (Punjab)	06.01.1997	27.10.1997

(b) Research experience: 24 years

Field/Area of Research Interest: Materials Science and Nanotechnology

11. Languages known (Speak, Read & Write) : English, Hindi

12. Scholarship/Fellowship/Awards:

- (i) Merit Scholarship in M. Sc. Physics (Fifth position in Chaudhary Charan Singh University, Meerut, Uttar Pradesh)
- (ii) Best Poster Presentation Award (in NanoSciTech-2012, Panjab University, Chandigarh)
- (iii) Best Oral Presentation Award (in NCAPMS-2015, Maharshi Dayanand University, Rohtak, Haryana)
- (iv) Award of Honour for UGC Major Research Project on University Foundation Day-2018 (presented by Hon'ble Vice-Chancellor, Chaudhary Devi Lal University, Sirsa)
- (v) Teachers Award (presented by Hon'ble Vice Chancellor of Chaudhary Devi Lal University, Sirsa on Republic Day-2019 for contribution in research/academics)
- (vi) Teachers Award (presented by Hon'ble Vice Chancellor of Chaudhary Devi Lal University, Sirsa on Teachers Day-2019 for academics/research activities)

13. Work done in Ph.D. & M.Phil.:

(i) **Ph. D. Thesis :** "Studies on Infrared Sensitive Films"

It deals with the synthesis and characterization of the thin films of narrow gap lead chalcogenides (PbS, PbSe, PbTe) and their alloys ($\text{PbS}_{1-x}\text{Se}_x$, $\text{PbSe}_{1-x}\text{Te}_x$, $\text{PbTe}_{1-x}\text{S}_x$ where $0 \leq x \leq 1$). Optical, electrical and structural characterization was made which include the determination of band gap, absorption coefficient, electrical conductivity, activation energy, Schottky barrier height, ideality factor, lattice constant, inter-planer spacing etc.

(ii) **M. Phil. Dissertation :** "Giant dipole resonances in heavy ion collisions"

It deals with Giant dipole resonance which exists as a general feature of highly excited nuclei. In heavy ion induced fusion reactions (collisions), the projectile and target formed a compound nucleus in statistical equilibrium. The compound nucleus then decays by particle and gamma ray emission. Statistical model calculations were made for the cross-section of formation and decay of the compound nucleus.

14. Particulars of guiding research :

- (i) No. of candidates completed Ph. D. : 10
- (ii) No. of candidates pursuing Ph. D. : 4
- (iii) No. of candidates completed M. Phil. : 7

Details of candidate(s) who have been awarded/pursuing Ph. D. degree

- (i) Anand Kumar, Date of Award: 27.04.2012
Title: "Synthesis; electrical and spectroscopic characterization of doped conducting polymers"
- (ii) Ajay Garg, Date of Award: 14.06.2012
Title: "Estimation of natural radioactivity in dwellings and industrial units of Eastern Haryana"
- (iii) Ms. Monika Chahar, Date of Award: 13.05.2013
Title: "Synthesis and spectroscopic characterization of nano-composites using silica gel and some polymers"

- (iv) Ms. Nidhi Sharma, Date of award: 07.05.2014
Title: "Synthesis of nano-materials using co-precipitation technique and their structural characterization"
- (v) Mr. Shyam Sunder , Date of Award: 2015
Title: "Study of some nano metal oxides prepared by wet chemical technique"
- (vi) Mr. Narinder Kumar, Date of Award: 14.03.2016
Title: "Study of radiation effects on the properties of nano- and micro-structures"
- (vii) Ms. Nisha Mann, Date of Award: 13.10.2017
Title: "Measurement of natural radioactivity in different building construction materials in western Haryana"
- (viii) Ms. Saruchi, Date of Award: 08.05.2018
Title: "Studies on sol-gel derived nanodimensional metal oxides and their binaries"
- (ix) Ms. Surbhi, Date of Award: 20.12.2018
Title: "Investigations on structural, thermal and optical characterizations of nanoscaled metal oxides and their binary systems"
- (x) Mr. Mukesh Chander, Date of Award: 20.12.2018
Title: "Study of ionic transport through synthesized nanopores in polymeric membranes and their applications"
- (xi) Ms. Bharti Sharma Date of Regn.: 30.09.2016 (pursuing)
Title: "Template synthesis of some metal nanowire arrays and investigation of their structural, optical, electrical and field emission behavior"
- (xii) Mr. Rahul Siwach Date of Regn.: 08.10.2018 (pursuing)
Title: "Modifications in structural, morphological, optical, magnetic and photocatalytic properties of some transition metal ions doped metal oxides nanoparticles"
- (xiii) Ms. Manjeet Pawar Date of Regn.: 15.01.2020 (pursuing)
Title: "Transition metal co-doped tungsten oxide nanostructures: Synthesis and properties"
- (xiv) Ms. Poonam Date of Regn.: 15.01.2020 (pursuing)
Title: "Lanthanide co-doped titania nanostructures: Growth and Characteristics"

15. Publications (Research papers)

- | | | | |
|-------|--|---|-----------|
| (i) | Research papers published in International Journals | : | 75 |
| (ii) | Research papers published in Conference Proceeding | : | 10 |
| (iii) | Research papers presented in International Conferences | : | 68 |
| (iv) | Research papers presented in National Conferences | : | 37 |

(List is attached at Annexures-A, B, C, D)

16. Research projects :

Title: "*Investigations on technologically important nanosized metal oxides and their binary systems prepared by sol-gel route*"

Principal Investigator: Dr. Sushil Kumar

Funding Agency: University Grants Commission, New Delhi

Duration of project: 01.04.2013 – 31.03.2016

Amount sanctioned: 11,24,300/- (Eleven lacs twenty four thousand three hundred only)

Research highlights:

(a) Methodology:

- (i) Synthesis of nanopowders and thin films of metal oxides and their binary systems by sol-gel and spin coating techniques.
- (ii) Tailoring of structural, optical and thermal properties through composition/doping.
- (iii) Structural, optical and thermal characterization of prepared nanosized materials.

(b) Applications:

Synthesized nanopowders and thin films of metal oxides are useful in various technologically important devices such as optical sensors, solar cells, luminescent displays, holographic gratings, microelectronic circuits etc. Our aim is to alter the properties of nanopowders and thin films so that the efficiency and stability of devices may be increased.

17. Professional expertise :

(a) No. of Ph.D. thesis evaluated: 16

Universities: (i) Jamia Millia Islamia (A Central University), New Delhi (1)

(ii) University of Allahabad, Allahabad, Uttar Pradesh (3)

(iii) Guru Gobind Singh Indraprastha University, New Delhi (2)

(iv) Chaudhary Charan Singh University, Meerut, Uttar Pradesh (5)

(v) Bharathidasan University, Thiruchirapalli, Tamil Nadu (1)

(vi) Deenbandhu Chhotu Ram University of Science & Technology, Murthal, Haryana (3)

(vii) Dr. Shakuntala Mishra National Rehabilitation University, Lucknow (1)

No. of M.Phil./M.Tech. dissertations evaluated: 10

Institute/Universities: (i) National Institute of Technology, Kurukshetra

(b) Course designed/developed : M. Sc., M. Phil., Ph.D. (Physics)
Chaudhary Devi Lal University, Sirsa

(c) Chairing Technical Sessions in International/ National Conferences/ Workshops etc.: 13
(Annexure-E)

(d) Invited Talks in International/National Conferences/Workshops etc. : 13 (Annexure-F)

(e) Extension Lectures delivered in Universities/Colleges/Institutes: 08 (Annexure-G)

(f) Reviewer of International Journals:

- (i) J. Alloys & Compounds (Elsevier)
- (ii) J. Non-crystalline Solids (Elsevier)
- (iii) J. Electronic Materials (Springer)
- (iv) Ceramics International (Elsevier)
- (v) Radiation Effects & Defects in Solids (Taylor & Francis)

- (vi) Indian Journal of Pure & Applied Physics (CSIR-NISCAIR, New Delhi)
- (vii) Physica B (Elsevier)
- (viii) Materials Chemistry & Physics (Elsevier)
- (ix) J. Nanoparticle Research (Springer)
- (x) ACS Applied Nanoparticles (American Chemical Society)
- (xi) J. Optoelectronics & Advanced Materials (Scimago)
- (xii) Current Nanomaterials (Bentham Science)
- (xiii) Optik (Elsevier)
- (xiv) J. Luminescence (Wiley)
- (xv) J. Materials Chemistry C (Royal Society of Chemistry)
- (xvi) Micro & Nano Letters

18. Professional programmes / training attended :

(a) Conferences/Workshops/Seminars/Symposia participated: 52

(b) Refresher Courses/ Methodology Workshop/ Faculty Development Programmes etc.

- (vi) Participated in International Workshop on “Promoting a Culture of Excellence in Universities: Role of Rankings and Benchmarking”, Nov. 18-19, 2018, International Institute of Higher Education Research and Capacity Building (I.I.H.Ed.), O.P. Jindal Global University, Sonapat, Haryana
- (v) Participated in MHRD-GIAN Course on Organic Light Emitting Diodes (OLEDs) for Future Lighting and Displays; Course Faculty: Prof. Jwo-Huei Jou, National Tsing Hua University, Hsinchu Taiwan; 26.12.2017 - 31.12.2017, Organized by Department of Applied Sciences & Humanities, Faculty of Engineering & Technology, Jamia Millia Islamia (A Central University), New Delhi.
- (iv) Refresher Course, U.G.C.-A.S.C., University of Delhi, Delhi, Mar. 12-31, 2007.
- (iii) Refresher Course, U.G.C.-A.S.C., University of Delhi, Delhi, Feb. 7-26, 2005.
- (ii) Refresher Course, U.G.C.-A.S.C., Jawaharlal Nehru University, New Delhi, Jan. 28 - Feb. 22, 2002.
- (i) Orientation programme, U.G.C.-A.S.C., Jamia Millia Islamia (A Central University), New Delhi, Feb. 6- Mar.5, 1999.

19. Contribution in Organizing Academic Events:

- (i) Member, Coordination Committee, Indo-Mongolian Academic and Cultural Interface, April 05, 2019, Chaudhary Devi Lal University, Sirsa
- (ii) Convener, National Conference on Emerging Trends in Physics & Materials Science, March 19-20, 2016, Organized by Department of Physics, Chaudhary Devi Lal University, Sirsa.
- (iii) Jury & Observer, Literary & Fine Arts Workshop, Oct. 19-21, 2015, Mata Harki Devi College for Women, Odhan, Sirsa, Haryana.

(iv) Convener, National Conference on Emerging Trends in Physics & Materials Science, March 09-10, 2015, Organized by Department of Physics, Chaudhary Devi Lal University, Sirsa.

(v) Co-Convener, National Seminar on Recent Trends in Science & Technology, Feb. 21, 2015, Organized by Department of Physics, Chaudhary Devi Lal University, Sirsa.

20. (a) Membership of Academic Societies:

- (i) Materials Research Society of India, Bangalore
- (ii) Indian Physical Society, Kolkata.
- (iii) Indian Association of Physics Teachers, Kanpur.
- (iv) Semiconductor Society (India), New Delhi
- (v) Indian Science Congress Association, Kolkata.

(b) Member of Academic Bodies in outside Universities:

- (i) External Subject Expert of Board of Studies in Physics & Materials Science, Thapar Institute of Engineering & Technology, Patiala, Punjab.
- (ii) External Subject Expert of Undergraduate Board of Studies in Physics, Deenbandhu Chhotu Ram University of science & Technology, Murthal, Haryana (2017-19)
- (iii) External Subject Expert of Research Degree Committee (RDC) in Physics, Chaudhary Charan Singh University, Meerut, Uttar Pradesh (2016-18)
- (iv) External Subject Expert of Board of Studies (BOS) in Physics for Affiliated Colleges, MJP Rohilkhand University, Bareilly, Uttar Pradesh (2016-18).
- (v) External Subject Expert of Departmental Research Committee, Indira Gandhi University, Meerpur, Rewari, Haryana (2016-17)
- (vi) External Subject Expert of Board of Studies, Department of Applied Physics, Faculty of Engineering & Technology, MJP Rohilkhand University, Bareilly, Uttar Pradesh (2016-17)

21. Academic/Administrative responsibilities :

(i) Chaudhary Devi Lal University, Sirsa, Haryana

Dean: Faculty of Physical Sciences (13.03.2020 - 12.03.2023)

Dean: University School for Graduate Studies (USGS)(10.07.2021 onwards)

Chairperson: Department of Physics (27.11.2013-26.11.2016; 10.07.2018-09.07.2021)

Chairperson: Department of Chemistry (13.03.2020-09.10.2020)

Director: University Science Instrumentation Centre (USIC) (27.05.2014 onwards)

Director: University IT & Data Centre (UITDC) (08.10.2021 onwards)

Director: University for Distance Learning (UCDL) (15.07.2020-08.02.2021)

The following positions have been hold by myself (Prof. Sushil Kumar) from time to time in Chaudhary Devi Lal University, Sirsa:

- Member:**
- (i) University Court
 - (ii) Executive Council
 - (iii) Academic Council
 - (iv) Faculty of Physical Sciences

Chairperson/Member:	(v) Research Degree Committee (RDC) (i) Post Graduate Board of Studies & Research (PGBOS&R) (ii) Under Graduate Board of Studies (UGBOS) (iii) Departmental Research Committee (DRC) (iv) Staff Council (v) Admission Committee (M.Sc., Ph.D.) (vi) Time Table Committee
VC Nominee/Subject Expert:	(i) Selection Committees for appointment in affiliated Degree/Post Graduate Colleges (ii) Selection Committees for appointment in affiliated B.Ed./M.Ed. Colleges
Convener/Member:	(i) Inspection Committees for inspection in affiliated Colleges (ii) Committee for screening/verifying API Scores of Teachers for promotion under CAS (iii) Syllabi Enrichment Committee as per LOCF-CBCS (iv) Committee for purchasing of Lab equipments for USIC
Member:	(i) Central Purchase Committee (ii) Library Committee (iii) Workload Assessment Committee for Assistant Professors Contract/Part-Time Teachers (iv) Ph.D. Ordinance Committee (v) House Allotment Committee (vi) Career and Counseling Cell (vii) Internal Quality Assurance Cell (viii) NAAC Committee for Self Study Report (ix) Women Complaints Committee/Grievance Cell against Sexual harassment (x) Editorial Board for preparing, editing and printing of Annual Reports (xi) Committee for drafting Hand Book of Information (HBI)/ Admission Rules (xii) Committee for preparing Ordinance for Choice Based Credit System (CBCS) (xiii) Committee for utilization of RUSA grant (xiv) Core Committee, Research Innovation Desk (xv) Committee for printing of Degrees/Merit certificates (xvi) Counseling, Training and Placement Cell
University Nominee:	Governing Body, Mata Harki Devi College for Women, Odhan
Liaison Officer:	SC/ST Cell
State Public Information Officer (SPIO)	
Coordinator:	Centralized Admission Process (Science Stream) 2019-20, 2020-21 conducted by M.D. University, Rohtak

- (ii) **Guru Nanak Girls College, Yamuna Nagar, Haryana**
Member: Admission, Advertisement, Purchase, Cleanliness Committees
Coordinator: NAAC & IQAC Committees
- (iii) **G. G. D. S. D. College, Palwal, Haryana**
Member: Admission, Examinations, Discipline, Health, Water & Sanitation Committees
- (iv) **Guru Nanak Girls College, Ludhiana, Punjab**
Member: Admission, Library Maintenance, Campus Cleanliness Committees

22. References :

- (i) **Prof. M. Husain**
Formerly Vice-Chancellor
MJP Rohilkhand University, Bareilly-243006, Uttar Pradesh
Formerly Professor, Department of Physics
Founder Director, Centre for Nanoscience & Nanotechnology
Jamia Millia Islamia (A Central University), New Delhi-110025
Mobile: +91-9811214084
E-mail: mush_phys@rediffmail.com
- (ii) **Prof. Hitendra K. Malik**
Department of Physics
Indian Institute of Technology, Delhi-110016
Mobile: +91-9582749757
E-mail: hkmalik@physics.iitd.ac.in, hkmalik@hotmail.com
- (iii) **Prof. Shatendra K, Sharma**
Director, University Science Instrumentation Centre
Jawahar Lal Nehru University, New Delhi-110067
Mobile: +91-9810721748
E-mail: sksharma@mail.jnu.ac.in, shatendra@gmail.com

(Sushil Kumar)

(Annexure-A)

Research papers published in International journals

- 75. “BaTiO₃@rGO nanocomposite: Enhanced photocatalytic activity as well as improved electrode performance”
M.A. Majeed Khan, Sushil Kumar, Maqusood Ahmed, Jahangeer Ahamed, Avshish Kumar, Muhammed Ali Ahar
J. Materials science: Materials in Electronics, 32 (2021) 1.
- 74. “Influence of silver doping on the structure, optical and photocatalytic properties of Ag doped BaTiO₃ ceramics”
M.A. Majeed Khan, Sushil Kumar, Jahangeer Ahamad, Maqusood Ahmed, Avshish Kumar

- Materials Chemistry and Physics, 259 (2021) 124068.
73. “Copper Nanowire Arrays: Growth and Properties”
Bharti Sharma, Ram Mehar Singh, Avshish Kumar, Sushil Kumar
Indian Journal of Pure & Applied Physics, 59(9) (2021) 612-618.
 72. “Frequency and temperature dependence of dielectric permittivity/electric modulus, and efficient photocatalytic action of Fe doped CeO₂ NPs”
M.A. Majeed Khan, Rahul Siwach, Sushil Kumar, Maqusood Ahmed, Jahangeer Ahamed
J. Alloys and Compounds, 856 (2020) 158127.
 71. “Hydrothermal preparation of Zn doped In₂O₃ nanostructure and its microstructural, optical, magnetic, photocatalytic and dielectric behavior”
M.A. Majeed Khan, Rahul Siwach, Sushil Kumar, Maqusood Ahmed, Jahangeer Ahamed
J. Alloys and Compounds, 846 (2020) 156479.
 70. “Investigations on microstructure, optical, magnetic, photocatalytic and dielectric behaviours of pure and Co-doped ZnO NPs”
M.A. Majeed Khan, Rahul Siwach, Sushil Kumar, Maqusood Ahmed, Jahangeer Ahmed
J. Materials Science: Materials in Electronics, 31 (2020) 6360-6371.
 69. “Role of Fe doping in tuning photocatalytic and photoelectrochemical properties of TiO₂ for photodegradation of methylene blue”
M.A. Majeed Khan, Rahul Siwach, Sushil Kumar, Abdulaziz N. Alhazaa
Optics and Laser Technology, 118(2019) 170-178.
 68. “Modifications in structural, morphological, optical and photocatalytic properties of ZnO:Mn nanoparticles by sol-gel protocol”
M.A. Majeed Khan, Sushil Kumar, Abdulaziz N. Alhazaa, M.A. Al-Gawati
Materials Science in Semiconductor Processing, 87 (2018) 134-141.
 67. “Rietveld refinement, microstructural, optical and thermal parameters of zirconium titanate composites”
Surbhi Verma, Saruchi Rani, Sushil Kumar, M.A. Majeed Khan
Ceramics International, 44 (2018) 1653-1661.
 66. “Enhancement of photocatalytic and electrochemical properties of hydrothermally synthesized WO₃ nanoparticles via Ag doping”
M.A. Majeed Khan, Sushil Kumar, Tansir Ahamad, Abdulaziz N. Alhazaa
J. Alloys and Compounds, 743 (2018) 485-493.
 65. “Tetragonal zirconia quantum dots in silica matrix prepared by a modified sol-gel protocol”
Surbhi Verma, Saruchi Rani, Sushil Kumar
Applied Physics A, 124 (2018) 387.
 64. “Crystal structure, morphology and optical behavior of sol-gel derived pyrochlore rare earth titanates RE₂Ti₂O₇ (RE=Dy, Sm)
Surbhi Verma, Saruchi Rani, Sushil Kumar
J. Alloys and Compounds, 750 (2018) 902-910.

63. "Ionic current rectification through pH regulated nanopores"
Mukesh Chander, Rajesh Kumar, Sushil Kumar, Narinder Kumar, S.K. Chakarvarti
Digest Journal of Nanomaterials and Biostructures, 13 (2108) 13-21.
62. "Investigation of ionic transport through track etched conical nanopores of PET membrane"
Mukesh Chander, Rajesh Kumar, Sushil Kumar, Narinder Kumar, S.K. Chakarvarty
NANO: Brief Reports and Reviews, 13 (2018) 1850011.
61. "Measurement of radium, thorium, potassium and associated hazard indices from the soil samples collected from northern India"
Nisha Mann, Amit Kumar, Sushil Kumar, R.P. Chauhan
Indoor and Built Environment, 27 (2017) 1-8.
60. Tailoring the structural and optical parameters of zirconia nanoparticles via silver"
Saruchi Rani, Surbhi Verma, Sushil Kumar
Applied Physics A, 123 (2017) 539.
59. "CdS quantum dots: Growth, microstructural, optical and electrical characteristics"M.A. Majeed Khan, Tansir Ahamad, Sushil Kumar, Maqusood Ahamad, Mohammed Shahabuddin, Abdulaziz N. Alhazaa
Applied Physics B, 122 (2016) 179.
58. "Modifications in optical and electrical properties of selenium nanowire arrays using ion beam irradiation"
Narinder Kumar, Rajesh Kumar, Sushil Kumar, S.K. Chakarvarti
Applied Physics A, 121 (2015) 571-579.
57. "Tailoring the properties of copper nanowires by ion beam irradiation"
Narinder Kumar, Rajesh Kumar, Sushil Kumar, S.K. Chakarvarti
Radiation Physics and Chemistry, 119 (2016) 44-50.
56. "Measurement of indoor radon-thoron in air and exhalation from soil in the environment of western Haryana, India"
Nisha Mann, Amit Kumar, Sushil Kumar, R.P. Chauhan
Radiation Protection Dosimetry, 171 (2016) 1-6
55. "Radon thoron measurements in air and soil from some districts northern part of India"
Nisha Mann, Amit Kumar, Sushil Kumar, Rishi Pal Chauhan
Nuclear Technology & Radiation Protection, 30 (2015) 294-300.
54. "Electrical studies of vertically oriented tellurium nanowire arrays produced by template electrodeposition"
Narinder Kumar, Rajesh Kumar, Sushil Kumar, S.K. Chakarvarti
J. Electronic Materials, 44 (2015) 2939.
53. "Fe-doping induced tailoring in the microstructure and optical properties of ZnO nanoparticles synthesized via sol-gel route"
M.A. Majeed Khan, Sushil Kumar, Maqusood Ahamad, Salman A. Alrokayan
J. Materials Science: Materials in Electronics, 26 (2015) 6113-6118.
DOI:10.1007/s10854-015-3190-1,
52. "Structural and electrical studies of template synthesized copper nanowires"
Narinder Kumar, Rajesh Kumar, Sushil Kumar, S.K. Chakarvarti
Current Applied Physics, 14 (2014) 1547-1552.

51. “Structural, electrical and optical properties of nanocrystalline silicon thin films deposited by pulsed laser ablation”
M.A. Majeed Khan, Sushil Kumar, Maqusood Ahamad
Materials Science in Semiconductor Processing, 30 (2014) 169-173.
50. “Microstructural, optical and electrical investigations of large scale selenium nanowires prepared by template deposition”
Narinder Kumar, Rajesh Kumar, Sushil Kumar, S.K. Chakarvarti
J. Materials Science: Materials in Electronics, 25 (2014) 3537-3542.
49. “Microstructure and blueshift in optical band gap of nanocrystalline $\text{Al}_x\text{Zn}_{1-x}\text{O}$ thin films”
M.A. Majeed Khan, Sushil Kumar, M. Naziruddin Khan, Maqusood Ahamad, A.S. Al Dwayyan
J. Luminescence, 155 (2014) 275-281.
48. “Microstructure and optical characterization of nanometric silicon thin films prepared by pulsed laser ablation”
M.A. Majeed Khan, Sushil Kumar, Maqusood Ahamad
J. Modern Optics, 61 (2014) 504-508.
47. “Study of structural and magnetic properties of Nd doped zinc ferrites”
N. Sharma, P. Aghamkar, S. Kumar, M. Bansal, Anju, R.P. Tandon
J. Magnetism and Magnetic Materials, 369 (2014) 162-167.
46. “Structural investigations on Nd-doped silica nanocomposites: Effect of sintering temperature and dopant concentration”
Surbhi, Saruchi, P. Aghamkar, Sushil Kumar
Philosophical Magazine Letters, 94 (2014) 503-513.
45. “Effect of annealing temperature on structural, photoluminescence and thermal properties of nanosized zirconium silicates”
Surbhi, Saruchi, Sushil Kumar
Advanced Science Letters, 20 (2014) 1504-1508.
44. “Structural and optical studies of $\text{Sn}_{1-x}\text{Zr}_x\text{O}_2$ nanocomposites”
Saruchi, Surbhi, Sushil Kumar
Advanced Science Letters, 20 (2014) 1558-1561.
43. “Optical and electrical investigations of a-GaTe nanoparticles thin films prepared by inert gas condensation technique”
Sushil Kumar, M. A. Majeed Khan
Optoelectronics and Advanced Materials, 8 (2014).....
42. “Morphological, optical and DC conduction properties of a-GaSe semiconductor nanoparticles thin films”
Sushil Kumar, M. A. Majeed Khan
J. Materials Science & Technology, 29 (2013) 1151-1155.
41. “Synthesis and characteristics of spray deposited CuInS_2 nanocrystals thin films for photovoltaic applications”
M.A. Majeed Khan, Sushil Kumar, Mohamad S. AlSalhi
Materials Research Bulletin, 48 (2013) 4277-4282.

40. "Spray pyrolysed $\text{Cu}_2\text{ZnSnS}_4$ absorbing layer: A potential candidate for solar cells/ photovoltaic applications"
M.A. Majeed Khan, Sushil Kumar, Mansour Alhoshan, A.S. Al Dwayyan
J. Optics and Laser Technology, 49 (2013) 196-201.
39. "Synthesis and spectral investigations of kiton red-620 doped silica based materials"
Monika Chahar, Vazid Ali, Sushil Kumar
J. Optoelectronics and Advanced Materials, 15 (2013) 224-228.
38. "Neodymia-silica nanocomposites: synthesis and structural properties"
Saruchi, Surbhi, Praveen Aghamkar, Sushil Kumar
Advanced Materials Letters, 4 (2013) 78-81.
37. "Effect of protonation and chemical doping of poly (o-toludine) with copper sulphate on spectral and electrical properties of host polymer"
Anand Kumar, Vazid Ali, Sushil Kumar
J. Macromolecular Science Part B: Physics, 52 (2013) 1107-1117.
36. "Synthesis and spectroscopic investigations of $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ doped poly(m-toluidine)" Anand Kumar, Vazid Ali, Sushil Kumar
International J. Polymeric Materials and Polymeric Biomaterials, 62(2013) 433-436.
35. "Structural and electrical properties of spray deposited thin films of CuInS_2 nocrystals"
M.A. Majeed Khan, Sushil Kumar, Maqusood Ahmed, Mohamad S. AlSalhi
Materials Letters, 68 (2012) 497-500.
34. "Morphology and non-isothermal crystallization kinetics of CuInS_2 nanocrystals synthesized by solvo-thermal method"
M.A. Majeed Khan, Sushil Kumar, M.S. Alsalhi, Maqusood Ahamad, Mansour Alhoshan, Salman A. Alrokayan, Tansir Ahmed
Materials Characterization, 65 (2012) 109-114.
33. "Spectroscopic and electrical studies of ferrous sulphate doped polyaniline"
Anand Kumar, Vazid Ali, Sushil Kumar
Advanced Materials Research, 585 (2012) 224-227.
32. "Schottky barrier junctions of gold with lead chalcogenides: Growth and characteristics"
Sushil Kumar, M. A. Majeed Khan
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(Annexure-B)

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(Annexure-C)

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Nidhi Sharma, Sushil Kumar, P. Aghamkar
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Anand Kumar, Vazid Ali, Sushil Kumar, M. Husain
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International Conference on Radiation Biology & Translational Research in Radiation Oncology, Nov. 10-12, 2008, University of Rajasthan, Jaipur.
5. "Differential scanning calorimetric study of Se_{100-x}Bi_x glasses"
M. A. Majeed Khan, M. Zulfequar, K. P. Tripathi, Sushil Kumar, M. Husain
XIII International Workshop on Physics of Semiconductor Devices, New Delhi, Dec. 2005.
4. "Optical, electrical and structural investigations on Cd_{1-x}Zn_xSe sintered films for photovoltaic applications"
M. Husain, Sushil Kumar
International Symposium on New Materials for Hydrogen Fuel Cell, Photovoltaic Systems, Aug. 26-30, 2001, Cancun, Mexico.
3. "Electrical properties of In_{1-x}Sb_x thin films"
Sachin K. Sharma, Sushil Kumar, T. P. Sharma, M. Husain
International Conference on Advanced Materials, Chaudhary Charan Singh University, Meerut, Dec. 26-28, 2000.

2. “Variation of band gap of CdTe sintered films with sintering temperature and sintering time”
Sachin K. Sharma, Sushil Kumar, T. P. Sharma, M. Husain, M. Zulfequar
X International Workshop on Physics of Semiconductor Devices, Indian Institute of Technology, New Delhi, Dec. 14-18, 1999.
1. “Opto-electro-structural properties of $\text{Cd}_x\text{Se}_{1-x}$ sintered films”
Sachin K. Sharma, Sushil Kumar, Vipin Kumar, T. P. Sharma
International Conference on Optics and Optoelectronics, Instruments Research & Development Establishment, Dehradun, Dec. 9-12, 1998.

(Annexure-D)

Research papers presented in National Conferences/ Workshops

37. “Temperature dependence of opto-structural parameters of $\text{ZrO}_2\text{-SnO}_2$ system”
Saruchi Rani, Sushil Kumar
National Conference on Solid State Nuclear Track Detectors and their Applications (SSNTDs-21), Jan. 29-31, 2021, Ramjas College, Delhi, and Department of Physics & Astrophysics, University of Delhi, Delhi.
36. “Ionic current dependence on monomer cations in nanopores”
Mukesh Chander, Sushil Kumar
National Conference on Solid State Nuclear Track Detectors and their Applications (SSNTDs-21), Jan. 29-31, 2021, Ramjas College, Delhi, and Department of Physics & Astrophysics, University of Delhi, Delhi.
35. “Ion beam irradiation induced electrical conductivity of tellurium nanowire arrays”
Narinder Kumar, Rajesh Kumar, Sushil Kumar
National Conference on Emerging Trends in Physics & Materials Science, March 19-20, 2016, Chaudhary Devi Lal University, Sirsa
34. “Electrochemical transport properties of cylindrical shaped track etched nanopores”
Mukesh Kumar, Rajesh Kumar, Sushil Kumar, S.K. Chakarvarty
National Conference on Role of Science and Technology Towards Make in India, March 05-07, 2016, YMCA University of Science & Technology, Faridabad
33. “Nanosized $\text{ZrO}_2\text{-SiO}_2$ mixed metal oxides: synthesis and structural characterization”
Surbhi, Saruchi, Sushil Kumar
National Conference on Photonics and Materials Science, Nov. 18-19, 2015, Guru Jambheshwar University of science & Technology, Hisar.
32. “Studies on electrical and spectral behaviour of transition salt doped organic macromolecular complexes”
Anand Kumar, Sushil Kumar
National Conference on Emerging Trends in Physics & Materials Science, March 9-10, 2015, CDL University Sirsa.
31. “Structural and optical properties of Fe-doped ZnO nanoparticles”
Sushil Kumar, M.A. Majeed Khan
National Conference on Applied Physics & Materials Science, Feb.5-6, 2015, MD University Rohtak.

30. "Effect of annealing temperature on structural, photoluminescence and thermal properties of nanosized zirconium silicates"
Surbhi, Saruchi, Sushil Kumar
National Conference on Nanotechnology and Renewable Energy, April 28-29, 2014, Jamia Millia Islamia, New Delhi.
29. "Structural and optical studies of $\text{Sn}_{1-x}\text{Zr}_x\text{O}_2$ nanocomposites"
Saruchi, Surbhi, Sushil Kumar
National Conference on Nanotechnology and Renewable Energy, April 28-29, 2014, Jamia Millia Islamia, New Delhi.
28. "Structural and optical investigations on Al-doped ZnO thin films"
Sushil Kumar, M.A. Majeed Khan
National Conference on Nanotechnology and Renewable Energy, April 28-29, 2014, Jamia Millia Islamia, New Delhi.
27. "Structural and optical properties of silicon thin films"
Sushil Kumar, M.A. Majeed Khan
2nd National Conference on Photonics & Materials Science, March 20-21, 2014, Guru Jambheshwar University of Science & Technology, Hisar.
26. "Synthesis of tellurium nanowires via template synthesis"
Narinder Kumar, Rajesh Kumar, Sushil Kumar, S.K. Chakarvarti
18th National Symposium on Solid State Nuclear Track Detectors and their Applications, Oct. 18-20, 2013, Aggarwal College, Ballabgarh, Haryana.
25. "Measurement of radon exhalation rates in some soil samples collected from western Haryana"
Nisha Mann, A.K. Garg, Sushil Kumar, R.P. Chauhan
National Conference on Nanoscience and Instrumentation Technology, March 28-29, 2013, National Institute of Technology, Kurukshetra.
24. "Synthesis and characterization of thin film of silver nanoparticles"
Sushil Kumar, M.A. Majeed Khan.
National Conference on Nanoscience and Instrumentation Technology, March 28-29, 2013, National Institute of Technology, Kurukshetra.
23. "Influence of annealing temperature on structural parameters of nanodimensional $\text{ZrO}_2\text{-SnO}_2$ "
Saruchi, Surbhi, Sushil Kumar.
National Conference on Nanoscience and Instrumentation Technology, March 28-29, 2013, National Institute of Technology, Kurukshetra.
22. "X-ray diffraction studies of sol-gel derived $\text{ZrO}_2\text{-SiO}_2$ nanomaterial"
Surbhi, Saruchi, Sushil Kumar.
National Conference on Nanoscience and Instrumentation Technology, March 28-29, 2013, National Institute of Technology, Kurukshetra.
21. "Fabrication and optical properties of selenium nanowires via template synthesis"
Narinder Kumar, Rajesh Kumar, Sushil Kumar, S.K. Chakarvarti.

- National Conference on Nanoscience and Instrumentation Technology, March 28-29, 2013, National Institute of Technology, Kurukshetra.
20. "Ionic transport through conical nanopores prepared by asymmetric track etch technique"
Mukesh Chander, Rajesh Kumar, Sushil Kumar, S.K. Chakarvarti.
National Conference on Nanoscience and Instrumentation Technology, March 28-29, 2013, National Institute of Technology, Kurukshetra.
 19. "Structural and thermal properties of silver nanoparticles prepared by wet chemical route"
Sushil Kumar, M.A. Majeed Khan.
National Conference on Physics of Engineering Materials, March 15-17, 2013, Deenbandhu Chhotu Ram University of Science & Technology, Murthal, Sonapat.
 18. "Investigations on spectral and electrical properties of cobalt nitrate doped poly (m-toluidine)"
Anand Kumar, Sushil Kumar, Pawan S. Rana
National Conference on Physics of Engineering Materials, March 15-17, 2013, Deenbandhu Chhotu Ram University of Science & Technology, Murthal, Sonapat.
 17. "Spectral and electrical properties of cobalt nitrate doped poly (o-toluidine)"
Anand Kumar, Sushil Kumar, Pawan S. Rana
National Conference on Physics of Engineering Materials, March 15-17, 2013, Deenbandhu Chhotu Ram University of Science & Technology, Murthal, Sonapat.
 16. "Characterization of copper nanowires grown by template synthesis technique"
Narinder Kumar, Rajesh Kumar, Sushil Kumar, M.A. Majeed Khan.
National Conference on Advanced Trends in Nanoscience and Nanotechnology, Feb. 25, 2013, Jamia Millia Islamia, New Delhi.
 15. "Synthesis, Photophysical and Microstructural study of 2-(4-Biphenyl)-5-phenyl-1, 3,4-oxadiazole doped rod shaped silica gel material"
Monika Chahar, Vazid Ali, Sushil Kumar, S. P. Khatkar, Gita Rani,
6th National Conference on Thermodynamics of Chemical and Biological Systems, Nov.2-4, 2011, Maharshi Dayanand University, Rohtak.
 14. "Radon exhalation rates from soil and sand samples collected from the vicinity of Yamuna river"
A.K. Garg, R.P. Chauhan, Sushil Kumar
17th SSNTD National Conference on Nuclear Tracks in Solids, Oct. 17-19, 2011, M. S. University, Baroda.
 13. "Radon- thoron monitoring in and around some industrial units using Solid state nuclear track detectors"
A.K. Garg, R.P. Chauhan, Sushil Kumar
17th SSNTD National Conference on Nuclear Tracks in Solids, Oct. 17-19, 2011, M. S. University, Baroda.
 12. "Optical properties of FeSO₄.7H₂O doped poly(o-toluidine)"
Anand Kumar, Vazid Ali, Sushil Kumar, Pawan S. Rana

National Conference on Chemistry in Our Lives, Mar. 29, 2011, Arya P.G. College. Panipat (Haryana)

11. "Morphology and characterization of template synthesized nanostructures"
Narinder Kumar, Rajesh Kumar, Sushil Kumar, S. K. Chakravarty
National Conference on Recent Advances in Science & Technology, Mar.27-28, 2010, Aggarwal College, Ballabhgarh (Haryana)
10. "Estimation of annual effective radiation dose received by some industrial workers"
Ajay Garg, Alka Singhal, Sushil Kumar, R. P. Chauhan
National Conference on Recent Advances in Science & Technology, Mar.27-28, 2010, Aggarwal College, Ballabhgarh (Haryana)
9. "Electrical conductivity and dielectric parameters of polyaniline doped with $\text{CuClO}_4 \cdot 4\text{BN}$ in aqueous DMSO solvent"
Anand Kumar, Sushil Kumar, Kiran Kumari, Vazid Ali
National Conference on Recent Advances in Science & Technology, Mar.27-28, 2010, Aggarwal College, Ballabhgarh (Haryana)
8. "Synthesis and Optical characterization of Kiton red-620 doped silica gel matrix"
Monika Chahar, Vazid Ali, Sushil Kumar, M. Husain
National Symposium on Emerging Trends in Chemistry, Feb. 15-16, 2010, Punjabi University, Patiala.
7. "Radon activity and exhalation rate in sand samples collected from Yamuna river"
A.K. Garg, Sushil Kumar, Monika Gupta, A. K. Narula, R. P. Chauhan.
16th Solid State Nuclear Track Detectors and their Applications, Nov. 9-11, 2009, Guru Nanak Dev University, Amritsar.
6. "Estimation of radioactivity in some sand and soil samples"
Monika Gupta, R. P. Chauhan, Ajay Garg, Sushil Kumar, R. G. Sonkawade.
National Conference on Accelerator and Low Level Radiation Safety, Nov. 18-20, 2009, Inter University Accelerator Centre, New Delhi.
5. "Electrical and spectroscopic properties of Cu^{+1} salt doped polyaniline"
Vazid Ali, Anand Kumar, Kiran Kumari, Sushil Kumar
National Conference on Recent Drifts, Break in Applied Sciences & its Technology for Innovation Management, Aug. 07-09, 2009 Krishna Institute of Engineering & Technology, Ghaziabad, U.P.,
4. "Measurement of α -radioactivity in some Indian building materials"
Ajay Garg, Sushil Kumar, R. P. Chauhan
National Conference on Innovative Technologies, Jun. 18-19, 2009, P.D.M. College of Engineering , Bahadurgarh, Haryana.
3. "Optical properties of Cu^{+1} salt doped polyaniline"
Vazid Ali, Kiran Kumari, Anand Kumar, Sushil Kumar
National Conference on Photonics & Materials Science, Oct. 24-25, 2008, Guru Jambheshwar University of Science & Technology, Hisar
2. "The effect of sintering temperature and sintering time on the band gap of CdSe sintered films"

Monika Sharma, Sushil Kumar, L. M. Sharma, T. P. Sharma, M. Husain
National Conference on Materials and their Applications, Kurukshetra University,
Kurukshetra, March 11-13, 2004.

1. “Optical, electrical and structural studies of $\text{PbTe}_{1-x}\text{S}_x$ alloy semiconductors”
Sushil Kumar, M. Husain
National Workshop on Synthesis, Characterization and Applications of Materials,
National Physical Laboratory, New Delhi, Feb. 6-7, 2002.

(Annexure-E)

Chairing Technical Sessions in International/National Conferences/ Workshops etc.

13. Judge, Working Science Models Making Competition, National Science Day
Celebration, March 01, 2021, JCD PG College, Sirsa, Haryana
12. International Webinar (e-Conference) on Recent Developments in Materials Science,
June 02-03, 2020, St. Andrew's (P.G.) College, Gorakhpur, Uttar Pradesh.
11. National Conference on Recent Developments in Nanoscience and Green Chemistry,
Feb. 1-2, 2020, Gandhi Faiz-e-Aam (P.G.) College, Shahjahanpur, Uttar Pradesh.
10. National Seminar on a 360° Exploration of Paradigms & Innovations in Research,
March 16, 2018, JCD Memorial (P.G.) College, Sirsa, Haryana.
9. International Conference on Emerging materials and Applications, Feb. 20-22, 2017,
University of Allahabad, Allahabad.
8. National Seminar on Emerging Trends in Science and Technology, Feb. 8, 2017, Arya
P.G. College Panipat, Haryana.
7. International Conference on New Scintillations on Materials Horizon, Oct. 21-23,
2016, MJP Rohilkhand University, Bareilly, Uttar Pradesh.

6. Member, Judgement Panel, District Level INSPIRE Award Science Exhibition, Sept. 19-21, 2016, Sirsa, Haryana
5. National Conference on Recent Advancements in Science & Technology, Feb. 27-28, 2016, Arya P.G. College Panipat, Haryana.
4. National Conference on Applied Physics and Materials Science, Feb. 5-6, 2015, M.D. University, Rohtak, Haryana.
3. International Conference on Frontiers in Materials Research & Applications, Oct. 30-31, 2014, Shaheed Bhagat Singh State Technical Campus, Firozpur, Punjab.
2. National Conference on Nanotechnology and Renewable Energy, April 28-29, 2014, Department of Applied Sciences & Humanities, Faculty of Engineering & Technology, Jamia Millia Islamia (A Central University), New Delhi.
1. National Conference on Nanoscience and Instrumentation Technology, March 28-29, 2013, National Institute of Technology, Kurukshetra, Haryana.

(Annexure-F)

Invited Talks in International/National Conferences/Workshops etc.

13. “Modifications in properties of vertically oriented crop of metal nanowires through ion beam irradiation”
National conference on Solid State Nuclear Track Detectors and their Applications (SSNTDs-21), Jan. 29-31, 2021, Ramjas College, Delhi, and Department of Physics & Astrophysics, University of Delhi, Delhi.
12. “The Raman Effect”
National Science Day Celebration, March 01, 2021, JCD PG College, Sirsa, Haryana.
11. “Material’s Behaviour at Nanoscale”
International Webinar (e-Conference) on Recent Developments in Materials Science, June 02-03, 2020, St. Andrew’s (P.G.) College, Gorakhpur, Uttar Pradesh.
10. “Nanostructures: Synthesis, Properties and Applications” (Keynote Address)
National Conference on Recent Developments in Nanoscience and Green Chemistry, Feb. 1-2, 2020, Gandhi Faiz-e-Aam (P.G.) College, Shahjahanpur, Uttar Pradesh.
9. “Science & Technology at nanodimension”
Technology, Humanities and Commerce, JCD Memorial (P.G.) College, Sirsa, Haryana, 21.02.2019.

8. “Nanowires Array: Synthesis, Properties & Applications”
International Conference on Efficient Solar Power Generation and Energy Harvesting (ESPGEH-2019), Feb. 12-14, 2019, Amity University, Noida.
7. “Nanostructures: Synthesis, Characterization and Applications”
National Seminar on a 360⁰ Exploration of Paradigms & Innovations in Research, March 16, 2018, JCD Memorial (P.G.) College, Sirsa, Haryana.
6. “Growth and Characterization of Semiconductor Nanowires”
National Seminar on Nanochemistry, Jan. 19, 2018, C.M.K. National (P.G. College, Sirsa, Haryana
5. “Investigations on the properties of semiconductor nanowire arrays synthesized by template electrodeposition”
International Conference on Emerging Materials and Applications, Feb. 20-22, 2017, University of Allahabad, Allahabad.
4. “Study on ionic transport through pH regulated cylindrical nanopores of polycarbonate membrane”
National Seminar on Emerging Trends in Science and Technology, Feb. 18, 2017, Arya College Panipat, Haryana.
3. Investigation on ion current rectification through track etched conical nanopores of PET membrane”
International Conference on New Scintillations on Materials Horizon, Oct. 21-23, 2016, MJP Rohilkhand University, Bareilly, Uttar Pradesh.
2. “Microstructure and spectroscopic investigation of Al and Fe doped ZnO thin films”
National Conference on Recent Advancements in Science & Technology, Feb. 27-28, 2016, Arya P.G. College, Panipat, Haryana.
1. “Microstructure and spectroscopic studies of Ag and Si nanometric thin films”,
International Conference on Frontiers in Materials Research & Applications, Oct. 30-31, 2014, Shaheed Bhagat Singh State Technical Campus, Firozpur, Punjab.

(Annexure-G)

Extension Lectures delivered in Universities/Colleges

8. “Nanotechnology: Prospects and Challenges”
Amity Institute of Renewable and Alternate Energy, Amity University, NOIDA, Uttar Pradesh
7. “Remarkable change in materials properties at nanodimension”
Refresher Course in Physics, University of Allahabad, Allahabad, Nov. 23, 2020.
6. “Recent Advances in Science & Technology”
Inter Collegiate Science Quiz Competition, Feb. 28, 2019, Janta Firls (P.G.) College, Ellenabad, Sirsa, Haryana.

5. “Challenges and Future Aspects of Nanoscience & Nanotechnology”, Feb.22, 2019
Manohar Memorial (P.G.) College, Fatehabad, Haryana.
4. “Nanoscience”, April 04, 2018, Government National College, Sirsa, Haryana
3. “Template assisted electro-deposition of nanowires and their applications”, March 23,
2018, J.C.D. Memorial (P.G.) College, Sirsa, Haryana.
2. “Modifications in the properties of metal nanowire arrays by ion beam irradiation”
Nov. 15, 2016, Department of Physics, MJP Rohilkhand University, Bareilly, Uttar
Pradesh.
1. “Nanotechnology”, Nov. 10, 2016, Janta Girls P.G. College, Ellenabad, Sirsa, Haryana.