DR. VIR SINGH RANGRA

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Department of Physics ⋄ H.P. University Shimla
Shimla-5 ⋄ Himachal Pradesh, INDIA 171005

EDUCATION

Ph.D. in Physics (Condensed Matter Physics, Experimental) *2003, Awarded*
Himachal Pradesh University, Summer Hill, Shimla
Thesis Title: Molecular Association in the Binary Mixtures with Acetone as one of the Constituents from Microwave Absorption Data

M.Phil. in Physics *1992*
Himachal Pradesh University, Summer Hill, Shimla
Dissertation Title: X-Ray studies of Different Materials

Masters in Science (M.Sc.), Physics *1989*
Himachal Pradesh University, Summer Hill, Shimla

Bachelors in Science (B.Sc.), Non Medical *1987*
Himachal Pradesh University, Summer Hill, Shimla

EMPLOYMENT RECORDS

Professor in Physics *March 2012 - Till Date*
Himachal Pradesh University, Summer Hill, Shimla
Specialisation: Condensed Matter Physics, Experimental

Associate Professor in Physics *July 2010 - March 2012*
Himachal Pradesh University, Summer Hill, Shimla

Assistant Professor in Physics *July 1999-July 2010*
Himachal Pradesh University, Summer Hill, Shimla

PROJECTS UNDERTAKEN

Synthesis of Newer Materials by Transient Shock Waves and their Characterization by various Spectroscopic methods & Development of Pyrophoric Devices. 2008
Defence Research and Development Organisation, DRDO, New Delhi *Co-Principal Investigator*

- No. ERIP/ER/0703665/M/01/044
- Funds Sanctioned - 45 Lakhs

Effect of swift heavy ion irradiation on the luminescence properties of ZrO_2 based Nano-Phosphors 2018
Inter-University Accelerator Centre (IUAC), New Delhi *Principal Investigator*

- Ref:IUAC/XIII.7/UFR-65306
- Funds Sanctioned - 6.5 Lakhs

RESEARCH GUIDANCE

Ph.D. Students Guided 14

· Chalcogenide Glasses ; Graphene ; Metal Oxides

M.Phil. Students Guided 45

· Metal Oxides

SKILLS AND TECHNIQUES

Nanomaterial synthesis and fabrication
Material Characterisation
Clean Room Experience
Light Microscopy, Transmission and Reflection

ACADEMIC COURSES INSTRUCTOR

Classical Mechanics
Classical Electrodynamics
Atomic and Molecular Physics
Electronics
Opto-Electronics
Material Science
Experimental Techniques in Physics
Advanced Techniques for Materials Characterization

PROFESSIONAL & ADMINISTRATIVE ASSOCIATIONS

- **Head of the Department (Chairperson)** , Department of Physics, Himachal Pradesh University, Shimla-5 (H.P.), for the period of two years (2019-2021).
- **Incharge of University Science Instrumentation Centre (USIC)**, Himachal Pradesh University, Shimla-5 (H.P.), for the period of four years (2008-2012).
- **Member of the "High Powered Committee"** for upgradation of the University vide General administration section notification No. 1-78/94-HPU(Genl.)-Vol-VI dated 13-09-2021
- **Chairman of the "Administrative Reforms Committee"**, to streamline various activities of the Teaching Departments/ Institutes and Non-Teaching Wings, Branches and Sections of the University.
- **Convener Internal Quality Assurance Cell (IQAC)**, for the cell of the Department of Physics, Himachal Pradesh University, Shimla-5, for the period of two years (2019 - 2021).
- **Convener for National Assessment and Accreditation Council (NAAC)**, from Department of Physics, Himachal Pradesh University, Shimla-5, for the period of two years (2019 - 2021).
- **Convener for National Institutional Ranking Framework (NIRF)** & **Annual Quality Assurance Report (AQAR)**, from Department of Physics, Himachal Pradesh University, Shimla-5, for the period of two years (2019 - 2021).

- **Member of the Inspection Committee (V.C.'s Nominee, NSCBM Govt. College, Hamirpur, Distt. Hamirpur, H.P.)**, as constituted by Vice-Chancellor (H.P. University, Shimla) in terms of provision of Ordinances 38.7 and 38.15 of the First Ordinances of the H.P. University, Shimla-5.
- **Member of the Inspection Committee (V.C.'s Nominee, Govt. College, Bhoranj (Tarkwari), Distt. Hamirpur, H.P.)**, as constituted by Vice-Chancellor (H.P. University, Shimla) in terms of provision of Ordinances 38.7 and 38.15 of the First Ordinances of the H.P. University, Shimla-5.
- **Member of the Inspection Committee (V.C.'s Nominee, Govt. College, Barsar, Distt. Hamirpur, H.P.)**, as constituted by Vice-Chancellor (H.P. University, Shimla) in terms of provision of Ordinances 38.7 and 38.15 of the First Ordinances of the H.P. University, Shimla-5.
- **Member of the Inspection Committee (Subject Expert, Physics(PG), NSCBM Govt. College, Hamirpur, Distt. Hamirpur, H.P.)**, as constituted by Vice-Chancellor (H.P. University, Shimla) in terms of provision of Ordinances 38.7 and 38.15 of the First Ordinances of the H.P. University, Shimla-5, for the period 2021-2022.
- **Member of the Inspection Committee (Subject Expert, Physics(UG), Govt. College, Bhoranj (Tarkwari), Distt. Hamirpur, H.P.)**, as constituted by Vice-Chancellor (H.P. University, Shimla) in terms of provision of Ordinances 38.7 and 38.15 of the First Ordinances of the H.P. University, Shimla-5, for the period 2018-2019 & 2021-2022.
- **Member of the Inspection Committee (Subject Expert, Physics(UG), Govt. College, Barsar, Distt. Hamirpur, H.P.)**, as constituted by Vice-Chancellor (H.P. University, Shimla) in terms of provision of Ordinances 38.7 and 38.15 of the First Ordinances of the H.P. University, Shimla-5, for the period 2018-2019 & 2021-2022.
- **Member of the Syllabus Committee (UG)**, Department of Physics, Himachal Pradesh University, Shimla-5
- **Member of Inspection Committee constituted by the Vice-Chancellor (Himachal Pradesh University)** as per the provision of Ordinances 38.7 & 38.15 in respect of Govt. College, Dharamshala, Distt. Kangra.
- **Member of the Board of Studies in the Subject of Physics for Post Graduate Classes** as per provision of Ordinances 25.3 & 25.7, Himachal Pradesh University, Shimla-5 (H.P.).
- **Subject Matter Expert (Member) of Central University of Himachal Pradesh**, Dharamshala, Distt. Kangra – 176215 (H.P.).
- **Member of the Board of Studies in the Subject of Physics for Post Graduate Classes** as per provision of Ordinances 25.3 & 25.7,Himachal Pradesh University, Shimla-5 (H.P.).
- **UGC member of the Advisory Committee**, Department of Physics, Kumaun University, Nainital, 2018
- **Member of the Research advisory Committee** constituted by the Institute for the PhD work of Mr. Saty Prakash Bharati, Research scholar in the Department of Physics (Broad area of research: Condensed matter Physics) admitted in the academic year 2017-18 by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab- 144011.
- **Subject Expert member of the ad-hoc Board of Studies**, constituted by the Vice-Chancellor of Himachal Pradesh Technical University, Hamirpur-177001.
- **Collaborative partner with Centre for Materials for Electronics Technology (C-MET), Government of India** for the cause of uplifting the Scheduled castes/Scheduled tribes (SC/ST) community of District Chamba, dated:04-10-2018

- **Member of Technical/ Advisory/Purchase Committee constituted by the Vice-Chancellor for University Science Instrumentations Centre**, Department of Physics, Himachal Pradesh University Shimla-5 (H.P.).
- Attended Advisory Committee meeting of SAP (CAS-I) Programme at Department of Physics, DSB Campus, Kumaun University, Nainital, dated:08-05-2019

LIST OF PUBLICATIONS

Journal Publications

1. **Effect of Ba ions substitution on multiferroic properties of $BiFeO_3$ perovskite ; A Gautam, VS Rangra ;** Crystal Research and Technology 45 (9), 953-956 (2010)

2. **Far-infrared study of amorphous $Ge_{0.17}Se_{0.83-x}Sb_x$ chalcogenide glasses ; P Sharma, VS Rangra, P Sharma, SC Katyal ;** Journal of Alloys and Compounds 480 (2), 934-937 (2009)

3. **Effect of antimony addition on the optical behaviour of germanium selenide thin films ; P Sharma, VS Rangra, P Sharma, SC Katyal ;** Journal of Physics D: Applied Physics 41 (22), 225307 (2008)

4. **Dielectric and magnetic properties of $Bi_{1-x}Y_xFeO_3$ ceramics ; A Gautam, P Uniyal, KL Yadav, VS Rangra ;** Journal of Physics and Chemistry of Solids 73 (2), 188-192 (2012)

5. **Thermal stability and crystallization kinetics of Se–Te–Sn alloys using differential scanning calorimetry ; R Kumar, P Sharma, PB Barman, V Sharma, SC Katyal, VS Rangra ;** Journal of thermal analysis and calorimetry 110 (3), 1053-1060 (2012)

6. **Resistivity dependent dielectric and magnetic properties of nanoparticles ; KC Verma, RK Kotnala, N Thakur, VS Rangra, NS Negi** Journal of Applied Physics 104 (9), 093908 (2008)

7. **Dielectric relaxation studies of binary mixtures of acetone and N, N-dimethylacetamide in the benzene solutions using microwave absorption data ; VS Rangra, DR Sharma** NISCAIR-CSIR, India (2003)

8. **Synthesis and use of low-band-gap ZnO nanoparticles for water treatment ; S Kumar, A Thakur, VS Rangra, S Sharma** Arabian Journal for Science and Engineering 41 (7), 2393-2398 (2016)

9. **Kinetic studies of bulk $Se_{92}Te_{8-x}Sn_x(x = 0, 1, 2, 3, 4and5)$ semiconducting glasses by DSC technique ; R Kumar, P Sharma, VS Rangra** Journal of thermal analysis and calorimetry 109 (1), 177-181 (2012)

10. **Effect of Sn addition on physical properties of Se-Te glassy semiconductors ; R Kumar, P Sharma, P Sharma, VS Rangra ;** Journal of Non-Oxide Glasses Vol 3 (2), 45-54 (2011)

11. **Dielectric relaxation studies of binary mixtures of N-methylacetamide and acetonitrile in benzene solutions using microwave absorption studies ; R Kumar, VS Rangra ;** ZeitschriftfürPhysikalischeChemie 219 (2), 169-180 (2004)

12. **Dielectric relaxation studies of binary mixtures of acetone and N-methylacetamide in benzene solution using microwave absorption data ; VS Rangra, DR Sharma ;** NISCAIR-CSIR, India (2003)

13. **Effect of Sb substitution on thermal behaviour of Te–Se–Ge glassy system ; AV Nidhi, V Modgil, VS Rangra ;** Journal of Thermal Analysis and Calorimetry 121 (2), 559-565 (2015)

14. **Assessment of physical parameters for quaternary antimony substituted Ge-Se-Te alloys ; A Kaistha, VS Rangra, P Sharma ;** Glass Physics and Chemistry 41 (2), 175-179 (2015)

15. **Effect of Sn addition on thermal and optical properties of glass ; V Modgil, VS Rangra ;** Journal of Materials (2014)Article ID 318262, 8 pages

16. **The Study of the theoretical parameters of Ge-Sn substituted Pb based quaternary chalcogenide glasses at their rigidity percolation threshold ; V Modgil, VS Rangra ;** Hindawi Publishing Corporation, Journal of Optoelectronics and Advanced Materials 13 (1-2), 158-164 (2011)

17. **A study of Sn addition on bonding arrangement of Se-Te alloys using far infrared transmission spectroscopy ; R Kumar, P Sharma, SC Katyal, P Sharma, VS Rangra ;** Journal of Applied Physics 110 (1), 013505 (2011)

18. **Compositional dependence of physical parameters in Ge17Se83-xSbx (x= 0, 3, 6, 9, 12, 15) glassy semiconductors ; P Sharma, VS Rangra, SC Katyal, P Sharma ;** Optoelectronics and advanced materialsrapid communications 1, 363-367(2007)

19. **The Effect of Compositional Variation on Physical Properties of Te9Se72Ge19-XSbx (X= 8, 9, 10, 11, 12) Glassy Material ; AV Nidhi, V Modgil, VS Rangra ;** New Journal of Glass and Ceramics 3 (03), 91 (2013)

20. **Investigation of conduction and dielectric behaviors of a-Pb9Se71Ge20 xSnx (8 x 12) chalcogenide glass ; V Modgil, VS Rangra ;** Physica B: Condensed Matter 445, 14-23 (2014)

21. **Molecular associations in binary mixture of pyridine and nitrobenzene in benzene solution using microwave absorption data ; S Kumar, DR Sharma, N Thakur, NS Negi, VS Rangra ;** ZeitschriftfürPhysikalischeChemie 219 (12), 1649-1654 (2005)

22. **Condensed Matter: Electronic Structure, Electrical, Magnetic and Optical Properties-Dielectric relaxation studies of binary mixtures of tetrahydrofuran and N, N- dimethylacetamide in benzene solutions using microwave absorption data. ; R Kumar, R Kumar Chaudhary, VS Rangra ;** Indian Journal of Pure and Applied Physics 49 (1), 42 (2011)

23. **Dielectric relaxation studies of binary mixtures of tetrahydrofuran and N-methylacetamide in benzene solutions using microwave absorption data. ; R Kumar, V Sharma, VS Rangra ;** NISCAIR Online Periodicals Repository, CSIR (June 2010)

24. **Molecular associations in binary mixtures of pyridine and chlorobenzene in benzene solution using microwave absorption data, S Kumar, DR Sharma, N Thakur, NS Negi, VS Rangra ;** Journal of molecular liquids 130 (1-3), 70-73 (2007)

25. **Dielectric relaxation study of binary mixtures of ethyl alcohol and N, N-dimethylformamide in benzene solution from microwave absorption data. ; V Sharma, N Thakur, DR Sharma, NS Negi, VS Rangra ;** NISCAIR Online Periodicals Repository,CSIR (2007)

26. **Structural Characterization and Compositional Dependence of Optical Properties of Ge16Se52Te32x Sb x (x = 0, 2, 4, 6, 8) Glassy Alloys. ; A Kaistha, V Modgil, VS Rangra ;** Journal of Electronic Materials 44 (12), 4747-4753 (2015)

27. **Synthesis of reduced graphene oxide (rGO) via chemical reduction ; A Thakur, S Kumar, VS Rangra ;** AIP Conference Proceedings 1661 (1), 080032 (2015)

28. **The characterization and study of physical parameters of Ge modified Se-Sn-Pb chalcogenide system ; P Kumar, V Modgil, VS Rangra ;** New Journal of Glass and Ceramics 3 (04), 116 (2013)

29. **Dielectric relaxation studies of binary mixtures of N-methylacetamide and N-methylformamide in benzene solutions using microwave absorption data ; R Kumar, VS Rangra, DR Sharma, N Thakur, NS Negi ;** Physics and Chemistry of Liquids 45 (6), 631-639 (2007)

30. **Dielectric relaxation studies of binary mixtures of ethyl alcohol and tetramethylurea in the benzene solution from microwave absorption data. ; V Sharma, N Thakur, DR Sharma, VS Rangra, NS Negi ;** ZeitschriftfürPhysikalischeChemie 220 (3), 325-333 (2006)

31. **Dielectric relaxation of pyridine in benzene solution from microwave absorption studies. ; S Kumar, DR Sharma, N Thakur, VS Rangra, NS Negi ;** ZeitschriftfürPhysikalischeChemie 219 (10), 1431-1436 (2005)

32. **Optical, electrical and antimicrobial studies of chemically synthesized graphite oxide and reduced graphene oxide. ; A Thakur, S Kumar, M Sharma, VS Rangra ;** Advanced Materials 7 (12), 1029-1034 (2016)

33. **Composition and thickness dependant optical study of a-Pb–Se–Ge–Sn glassy thin films. ; V Modgil, VS Rangra ;** Journal of Materials Science: Materials in Electronics 25 (12), 5428-5432 (2014)

34. **Calorimetric study of Sb-modified Ge–Se–Te glassy alloys ; A Kaistha, V Modgil, VS Rangra ;** Journal of Thermal Analysis and Calorimetry 129 (3), 1323-1331 (2017)

35. **Effect of antimony addition on the optical behaviour of SnSeSb thin films. ; LK Abhilashi, P Sharma, VS Rangra, P Sharma ;** Journal of Non-Oxide Glasses Vol 8 (1), 17-23 (2016)

36. **Influence of Ti on multiferroic properties of $Bi_{0.8}Ba_{0.2}Fe_{1-x}Ti_xO_3$ ceramics ; A Gautam, VS Rangra, P Uniyal, KL Yadav ;** Applications of Ferroelectrics (ISAF/PFM), 2011 International Symposium)

37. **Piezoresponse Force Microscopy and Nanoscale Phenomena in Polar Materials Dielectric Relaxation Study of Ethanol in Benzene from Microwave Absorption Data ; V Sharma, N Thakur, DR Sharma, NS Negi, VS Rangra ;** ZeitschriftfürNaturforschung A 62 (7-8), 406-408 (2007)

38. **Dielectric relaxation studies of binary mixtures of N-methylacetamide and N, N-dimethylacetamide in benzene solutions using microwave absorption data ; R Kumar, VS Rangra, DR Sharma, N Thakur, NS Negi ;** International Journal of Physics and Chemistry of Liquids45 (6), 631-639 (2007)

39. **Dielectric behavior of a-Sn-Se-Pb-Ge chalcogenide glass ; P Kumar, V Modgil, S Choudhary, AV Nidhi, VS Rangra ;** AIP Conference Proceedings 1661 (1), 090006 (2015)

40. **Compositional Dependence of Physical Parameters in Sn-Se-In Chalcogenide Glasses ; AK Dixit, P Sharma, A Thakur, V Mishra, P Sharma, VS Rangra ;** Chalcogenide Letters 12 (5), 249-256 (2015)

41. **Structural Characterization of Te9Se72Ge19-xSbx (8x12) Glass using Far-Infrared spectra. ; AV Nidhi, V Modgil, VS Rangra ;** Chalcogenide Letters 11 (8) (2014)

42. **The Far-infrared Study of Ge Modified Sn–Se-Pb Chalcogenide Glasses ; P Kumar, V Modgil, VS Rangra ;** Journal of Non-Oxide Glasses Vol 6 (2), 27-35 (2014)

43. **Effect of indium incorporation on the optical properties of Ge-Se glassy semiconductors ; R Kumar, D Sharma, VS Rangra ;** Optoelectronics and Advanced Materials-Rapid Communications 5 (10), 1065-1068 (2011)

44. **Dielectric relaxation studies of binary mixtures of ethyl alcohol and N, N-dimethylacetamide in the benzene solution from microwave absorption data ; V Sharma, N Thakur, DR Sharma, VS Rangra, NS Negi ;** NISCAIR Online Periodicals RepositoryCSIR (2008)

45. **Molecular associations in binary mixture of pyridine and N, N-dimethylacetamide in benzene solution using microwave absorption data ; S Kumar, DR Sharma, N Thakur, NS Negi, VS Rangra ;** NISCAIR Online Periodicals RepositoryCSIR (2006)

46. **Optical and Calorimetric Study of Pb9Se71Ge20-xSnx (8 x 12) Glass ; V Modgil, VS Rangra ;** Journal of Non-Oxide Glasses Vol 6 (4), 69-78 (2014)

47. **The Study of Physical Parameters of Pb Modified Germanate Chalcogenide Glass ; P Kumar, V Modgil, S Chand, VS Rangra ;** Journalof Nano- and Electronic Physics,5 (4), 04076(6pp) (2013)

48. **Structural study of the quaternary Se68Te19 xSn13Bix (x= 8, 9, 10, 11, 12) chalcogenide crystals through X-ray diffraction ; V Modgil, A Kaistha, VS Rangra ;** AdvApplSci Res 4, 254-263

49. **Molecular Association between N-methylacetamide and Dimethylsulphoxide Using Dielectric Relaxation Measurements in the Microwave Region ; R Kumar, VS Rangra ;** AIP Conference Proceedings 1349 (1), 517-518 (2011)

50. **Dielectric relaxation studies of binary mixtures of tetrahydrofuran and N, N-dimethylacetamide in benzene solutions using microwave absorption data ; R Kumar, RK Chaudhary, VS Rangra ;** NISCAIR-CSIR, India (2011)

51. **Structural Study of Se-Te-Zn system using XRD Spectra ; V Modgil, P Sharma, VS Rangra ;** Journal of Ovonic Research Vol 6 (3), 125-133 (2010)

52. **Dielectric Relaxation of Binary Mixtures of Tetrahydrofuran and N-Methylformamide in Benzene Solution Using Microwave Absorption Studies ; R Kumar, VS Rangra ;** ZeitschriftfürNaturforschung A 65 (1-2), 141-144 (2009)

53. **Dielectric relaxation studies of binary mixtures of N-methylformamide and benzonitrile in benzene solution using microwave absorption data ; R Kumar, N Thakur, DR Sharma, VS Rangra, NS Negi ;** NISCAIR-CSIR (2007)

54. **An investigation on molecular dynamics of binary mixtures of N-methylacetamide and tetramethylurea in microwave region ; RK Chaudhary, R Kumar, VS Rangra ;** Indian Journal of Pure Applied Physics (IJPAP) 56 (11), 896-901 (2018)

55. **Synthesis of RGO–ZnO Composites for Thermal, Electrical and Antibacterial Studies ; A Thakur, S Kumar, P Pathania, D Pathak, VS Rangra ;** Surface Review and Letters 24 (07), 1750095 (2017)

56. **Dielectric Dispersion in Te9Se72Ge19-xSbx (x= 8, 9, 10, 11, 12) Chalcogenide Glassy Alloy ; AV Nidhi, V Modgil, VS Rangra ;** Chalcogenide Letters 13 (8), 359-371 (2016)

57. **Thickness dependant Optical Study OF Te9Se72Ge19-xSbx (8 x 12) Chalcogenide Glassy Thin Films ; AV Nidhi, V Modgil, VS Rangra ;** Journal of Non-Oxide Glasses Vol 8 (3), 67-72 (2016)

58. **Thermal and Optical Characterization of a Sn-Se-Pb-Ge Glassy Alloy ; P Kumar, V Modgil, VS Rangra ;** Journal of Electronic Materials 45 (1), 486-492 (2016)

59. **Investigation of basic physical properties and dielectric behavior of a-Se-Sn-Ge-Sb system ; S Chaudhary, V Modgil, AV Nidhi, P Kumar, VS Rangra ;** AIP Conference Proceedings 1661 (1), 090003 (2015)

60. **Thickness and compositional dependant optical study of Pb9Se71Ge20-xSnx (8 x 12) glass ; V Modgil, VS Rangra ;** AIP Conference Proceedings 1661 (1), 090008 (2015)

61. **Investigation of basic thermal behavior of a-Te-Se-Ge-Sb glassy system ; AV Nidhi, V Modgil, S Chaudhary, P Kumar, VS Rangra ;** AIP Conference Proceedings 1661 (1), 090011 (2015)

62. **Dielectric Dispersion and Conduction Behavior in Sn-Se-Pb-Ge Glass Alloys ; P Kumar, V Modgil, VS Rangra ;** Journal of Non-Oxide Glasses Vol 7 (4), 65-81 (2015)

63. **The study of thermal and optical properties of Sn added Pb-Se-Ge chalcogenide glass ; V Modgil, P Kumar, AV Nidhi, VS Rangra ;** AIP Conference Proceedings 1591 (1), 839-841 (2015)

64. **Effect of Sn Addition on Thermal and Optical Properties of Pb9 Se71 Ge20-xSn ; V Modgil, VS Rangra ;** Hindawi Publishing Corporation, Journal of Materials, Volume 2014, Article ID 318262, 8 pages

65. **The effect of Sn addition on structure and glass transition temperature in Pb-Ge-Se chalcogenide glass ; V Modgil, VS Rangra ;** Optoelectronics and Advanced Materials-Rapid Communications 7 (1-2), 30-36 (2013)

66. **Dielectric relaxation studies of binary mixtures of tetrahydrofuran and N, N-dimethylformamide in benzene solutions using microwave absorption data ; R Kumar, RK Chaudhary, VS Rangra ;** Indian Journal of Physics 86 (7), 635-640 (2011)

67. **FTIR and DSC study of Se92Te8-xSnx (x= 0, 3 and 5) chalcogenide glasses ; R Kumar, P Sharma, VS Rangra ;** Materials Science Forum 710, 745-750 (2012)

68. **Dielectric Relaxation of N, N-dimethylacetamide in Benzene Solution from Microwave Absorption Studies ; R Kumar, VS Rangra ;** National Conference on Recent Advances in Innovative Materials (RAIM-08), 85 (2008)

69. **Dielectric Relaxation Studies of Mixtures of N-Methylacetamide and Ethanol in Benzene Solutions Using Microwave Absorption Technique ; R Kumar, VS Rangra, DR Sharma, N Thakur, NS Negi ;** ZeitschriftfürNaturforschung A 62 (3-4), 213-217 (2007)

70. **Condensed Matter: Structure, Mechanical and Thermal Properties-Dielectric relaxation studies of binary mixtures of ethyl alcohol and N, N-dimethylformamide in benzene solution ; V Sharma, N Thakur, DR Sharma, NS Negi, VS Rangra ;** Indian Journal Of Pure & Applied Physics 45 (2), 163(2007)

71. **Original Communications-Dielectric Relaxation Studies of Mixtures of N-Methylacetamide and Ethanol in Benzene Solutions Using Microwave Absorption Technique ; R Kumar, VS Rangra, DR Sharma, N Thakur, NS Negi ;** Zeitschrift fur Naturforschung A-Journal of Physical Sciences 62 (3-4), 213-217 (2007)

72. **Dielectric relaxation studies of binary mixtures of N-methylformamide and dimethylsulphoxide in benzene solution using microwave absorption data ; R Kumar, N Thakur, DR Sharma, VS Rangra, NS Negi ;** Indian Journal of Physics 79(12),1415-1418 (2005)

73. **Joint IEEE Int'l Symp on Applications of Ferroelectrics/Int'l Symp on Piezoresponse Force Microscopy** & **Nanoscale Phenomena in Polar Materials ; A Gautam, VS Rangra, P Uniyal, KL Yadav** (2011)

74. **A Study of Physical Properties of Ge-Se-In Glassy Semiconductors ; R Kumar, A Kumar, VS Rangra ;** Optoelectronics & Advanced Materials, 4 (10), 1554-1558 (2010)

Conferences/ Seminars/Workshops attended

1. Workshop-Cum-Seminar on Microscopic Techniques in Nano-Science (WSMTN -2011)Department of Physics, Himachal Pradesh University, Shimla-5 (H. P.).
2. Attended National Seminar on Experimental & Computational Techniques in Material Science (ECTMS-2012)Department of Physics, Himachal Pradesh University, Shimla-5 (H. P.)

DECLARATION

It is certified that the information produced above is true to the best of my knowledge.

Dr. Vir Singh Rangra
(Professor)

Department of Physics,
H.P. University, Shimla-05,
Himachal Pradesh, INDIA