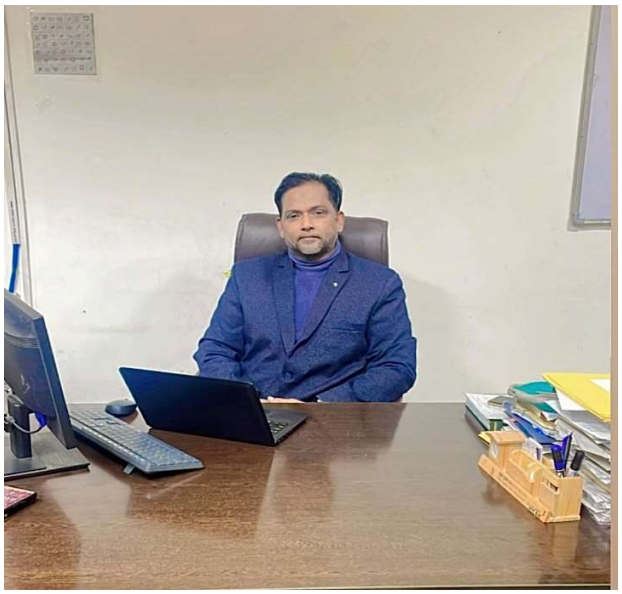
CURRICULUM VITAE – ACADEMIC



DR. AURANGZEB KHURRAM HAFIZ

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ACADEMIC RECORD

- **DOCTOR OF PHILOSOPHY (Ph.D.)**, 2006, School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India.

  Thesis Title: *Study of Some Coherent Processes involving Nonlinear Interactions of Light with Matter.*
  Supervisor: Prof. Rupamanjari Ghosh.

- **Pre-Ph.D.** Courses in Physics, 2000, School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India.

- **CSIR JRF/NET,** December 1999, in Physical Sciences.

- **GATE** 1999.

- **M.Sc.** Physics, 1999, School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India.
  4th Semester Project Title: *Study of Period-doubling and Bifurcation leading to Chaos in a Driven Nonlinear Oscillator.*

- **B.Sc.** (Physics Honors), 1995, Presidency College, Calcutta University, Kolkata, India.

Teaching Experience: **UG: 17 Years** **PG: 15 Years**

Research Experience: **22 Years**

Fields of Specialization: **Quantum Optics, Nanophotonics, Material Science.**

EMPLOYMENT PROFILE

- **March 03, 2020 – Till date: Professor**, Centre for Nanoscience and Nanotechnology, Jamia Millia Islamia, New Delhi.
- **November 29, 2019 – Till date: Officiating Director,** Centre for Nanoscience and Nanotechnology, Jamia Millia Islamia, New Delhi.
- **March 2017 – March 2020: Associate Professor**, Centre for Nanoscience and Nanotechnology, Jamia Millia Islamia, New Delhi.
- **December 2006 – March 2017: Assistant Professor**, Department of Physics, Jamia Millia Islamia, New Delhi.
- **August 2005 – November 2006: Lecturer**, Department of Applied Sciences, Amity School of Engineering and Technology, under GGSIPU, New Delhi.
- **August 2003 – July 2005: Senior Research Fellow, CSIR.**
- **August 2000 – July 2003: Junior Research Fellow, CSIR.**

TECHNICAL EXPERTISE

- Developing low cost temperature controller, current controller circuits and other laser drive electronics.
- Developing electronically controlled laser pulsing techniques.
- Developing low-noise detection system.
- Building up external as well as extended cavities for diode laser systems to study tunability as well as instabilities.
- Building Coincidence Detection setup and Correlator setup for fast detection.
- Developing GPIB interface programmes for remote operations.
- Working with Diode lasers, Photon Counter, Digital Oscillscope, Photomultiplier Tubes, Power Meter and Photo-diodes, Monochromators, Programmable Function Generator, Lock-in-Amplifiers and various other electronic and optical components used in optical experiments.
- Numerical study using FORTRAN and C.
- Proficient in MATLAB and MATHEMATICA software.

RESEARCH GUIDANCE

Ph.D. Awarded

- **Firas Sabeeh Mohammed (2012)**
  Thesis Title: *Study of instabilities in an external cavity diode laser system*

- **Tho-Alfiqar A. Zaker (2012)**
  Thesis Title: *Carrier dynamics in quantum well lasers in magnetic field*

- **Shereena Joseph (2014)**
  Thesis Title: *Light matter interactions inside nonlinear periodic nanostructures*

- **Rayees A Zargar (2016)**
  Thesis Title: *Synthesis and characterization of pure and doped iron chalcogenide superconductors*

- **Rizwan Husain (2016)**
  Thesis Title: *Study of second and third-order nonlinear interactions inside photonic crystals.*

- **Santosh Chackrabarti (2016)**
  Topic of Research: Study on the properties of pure and doped wide-band gap semiconductor films

- **Poonam Rani (2019)**
  Topic of Research: *Improving the granular coupling of high T_c Cuprates and Pnictides superconductors by suitable metallic composites*

- **Jyoti Bansal (2020)**
  Topic of Research: *Investigation of the properties of noble / transition metal - doped titanium dioxide for varied applications.*

- **Ishtihadah Islam (2022)**
  Topic of Research: *Synthesis, Characterization and physical properties of transition metal doped oxide semiconductors: Bulk and Nanoparticles.* (Co-supervisor)

- **Farhan Ahmad (2023)**
  Topic of Research: *Study of structural, morphological and optical properties of tricomposite nanolayers for optical sensing applications*

- **Vandana Nagal (2023)**
  Topic of Research: *Investigation of semiconductor nanostructures for optoelectronics and electrochemical sensor applications.*

- **Navjyoti Boora (2023)**
  Topic of Research: *Study of Metal/Metal-oxide doping on Colossal magneto resistance of LCMO based composites.*

- **Shafaque Rahman (2023)**
  Topic of Research: *Performance Analysis of Nanomaterials-Based Heterostructures for Optoelectronic Applications*

Ph.D. Thesis submitted

- **Md Imran**
  Topic of Research: *Photocatalytic wastewater treatment using zinc indium sulfide ($ZnIn_2S_4$) and its nanocomposites*

Ph. D. in Progress

- **Tuiba Mehraj**

  Topic of Research: *Fabrication of lead-free inorganic/organic perovskite material for high performance photovoltaic devices.*

- **Kajal**
  Topic of Research: *Study of Quantum Dot's Investigated via Ultrafast Spectroscopy for Energy Storage Applications.*

- **Mushyada Khanam**
  Topic of Research: *Study on the Effect of Magnetic Field and Injection Current on Spectral Characteristics of Multiple Quantum Well Laser*

- **Mohammad Azim**
  Topic of Research: *Synthesis and Characterization of 2D materials for Optoelectronic Applications.*

RESEARCH PUBLICATIONS

Refereed Journals

1. *Ecofriendly blue emissive ZnO-graphene nanocomposite and its application as superior catalytic reduction of methyl orange and congo red*, Shafi Ul Islam, Urosa Latief, Iftkhar Ahmad, Javid Ali, **A. K. Hafiz**, M. Ajmal Khan and Mohd. Shahid Khan, **Journal of Sol-Gel Science and Technology (2023) 108, 411–422, DOI: 10.1007/s10971-023-06192-w**.

2. *Breaking Boundaries in LED Technology: Exploring theRevolutionary Diode Characteristics of Screen Printed (TiO2)1−x(CuO)x Thick Films*, R. A. Zargar, Santosh Chackrabarti,Tuiba Mearaj, I. M. Ashraf, and **A. K. Hafiz**, **ECS Journal of Solid State Science and Technology**, (2023) **12** 076008, DOI: 10.1149/2162-8777/ace284

3. *Sol-gel synthesis of ZrFeO3 nanoparticles and study of optical nonlinearity and multiferroicity of its nanocrystalline thin films*, Imran Ahmad Salmani, Mohd. Shahid Khan, Javid Ali, **Aurangzeb Khurram Hafiz**, Mohd. Mehkoom, S. M. Afzal, Mohd. Saleem Khan, **Journal of Sol-Gel Science and Technology (2023) 107:742–753,** DOI: 10.1007/s10971-023-06160-4

4. *Growth and characterization of screen printed TiO2–CuO thick films for optoelectronic applications*, Tuiba Mearaj, R. A. Zargar, M Arora, M. Faizan, I. M. Ashraf, **A. K. Hafiz**, **Physica B: Condensed Matter 665, (2023)**, 415062. https://doi.org/10.1016/j.physb.2023.415062

5. *Slow Cooling and Transfer Dynamics of Hot Excitons in CsPbBr3Perovskite Quantum Dots/g-CN Nanosheet Heterostructures: Implications for Optoelectronic Applications,* Vandana Nagal, Virendra Kumar, Manjari Jain, Saurabh K. Saini, Mahesh Kumar, Kedar Singh, Saswata Bhattacharya, Rafiq Ahmad and **Aurangzeb Khurram Hafiz**, **ACS Applied Nano Materials**, (2023) **6**, 8894–8906. **DOI: 10.1021/acsanm.3c01374**

6. *Investigation of UV-Vis Photoresponse of WO 3 /RGO Heterostructure-Based Optical Sensor*, Shafaque Rahman, Rana Tabassum and **Aurangzeb Khurram Hafiz**, **IEEE Sensors Journal**, **23**, 6742-6749 (2023). DOI: 10.1109/JSEN.2023.3244633

7. *Role of temperature on CdS and MoS2 doped SnO2 nanostructures: Potential applications in photodetection and temperature dependent current-voltage characteristics*, Shafaque Rahman, Mohd Azharuddin, Jyoti Bansal, Mohd Bilal, Rana Tabassum and **Aurangzeb Khurram Hafiz, Journal of Alloys and Compounds, 941,** 168901 (2023),

https://doi.org/10.1016/j.jallcom.2023.168901.

8. *Insight into Hot Carrier Kinetics of CsPbBr3/ZnO Heterostructures for Photodetector Application,* Vandana Nagal, Virendra Kumar, Shafaque Rahman, Kapil Kumar, Kedar Singh, Mahesh Kumar, Rafiq Ahmad, **Aurangzeb Khurram Hafiz**, **ACS Applied Optical Materials 1**, 779-787 (2023).

9. *Third-order optical nonlinearity and multiferroicity of nanoparticles thin films of isovalent rare earth Y3+ ion substituted BiFeO3*, Imran Ahmad Salmani, Mohd. Shahid Khan, Javid Ali, **Aurangzeb Khurram Hafiz**, Mohd. Mehkoom, S. M. Afzal, Mohd. Saleem Khan, **Physica B: Condensed Matter 655,** 414750 (2023).

10. *Lattice-Distortion-Induced Change in the Magnetic Properties in Br-Defect Host CsPbBr 3 Perovskite Quantum Dots*, Virendra Kumar, Harish Chandr Chauhan, Vandana Nagal, **Aurangzeb Khurram Hafiz** and Kedar Singh, **Journal of Physical Chemistry Letters**, **14**, 888–896 (2023).

11. *Understanding of temperature-dependent photoluminescence in graphite and SixZnO(1-x) tri-composite nanostructure*, Farhan Ahmad, Mohd Azharuddin, Jyoti Bansal, Rana Tabassum, **Aurangzeb Khurram Hafiz, Optical Materials 134**, 113165 (2022).

12. *Low-cost synthesis of lanthanides (Eu3+and Sm3+)-intercalated TiO2 nanostructures: a detailed study on structural, optical and photocatalytic applications*, R. A. Zargar, M. Imran, M. Arora, V. Nagal, Tuiba Mearaj, M. Aslam Manthramme, Mohd Shkir, and **A. K. Hafiz**, **Journal of Material Science: Material in Electronics, 33**, 26931-26942 (2022).

13. *Towards Improved Detectivity and Responsivity Using Graphene Nanoribbons with Width of 10–15 nm for Photodetection Applications*, Shafaque Rahman, Mohd Faizan, Navjyoti Boora, Rana Tabassum, **A. K. Hafiz**, **Journal of Electronics Materials, 51,** 6815–6826 (2022).

14. *Synthesis and Performance Analysis of Photocatalytic Activity of ZnIn2S4 Microspheres Synthesized Using a Low-Temperature Method*, Mohammd Imran, Waseem Ashraf, **Aurangzeb Khurram Hafiz** and Manika Khanuja, **ACS Omega DOI: 10.1021/acsomega.2c00945**

15. *Impact of NiO nano-particles on colossal magneto-resistance of La 0.70 Ca 0.30 MnO 3 composite*, Navjyoti Boora, Prince Sharma, Asrar Alam, Shafaque Rahman, Rafiq Ahmad, V. Awana and **Aurangzeb Khurram Hafiz**, **Materials Letter X, DOI:10.1016/j.mlblux.2022.100147**

16. *Performance optimization of silicon-doped titanium dioxide and multiwalled carbon nanotubes tricomposite nanostructures for electrical and optical applications*, Shafaque Rahman, Farhan Ahmad, Jyoti Bansal, Rana Tabassum and **Aurangzeb Khurram Hafiz**, **Journal of Materials Science: Materials in Electronics 33(8):**1-22 (2022)

17. *Wide-Linear Range Cholesterol Detection Using Fe 2 O 3 Nanoparticles Decorated ZnO Nanorods Based Electrolyte-Gated Transistor*, Marya Khan, Vandana Nagal, Sakeena Masrat, Talia Tuba, Nirmalya Tripathi, Mohammad K. Parvez, Mohammed S. Al-Dosari, Ajit Khosla, Hidemitsu Furukawa, **Aurangzeb Khurram Hafiz** and Rafiq Ahmad, **Journal of The Electrochemical Society 169(2):**027512 (2022).

18. *A Non-Enzymatic Electrochemical Sensor Composed of Nano-Berries Shaped Cobalt Oxide Nanostructures on Glassy Carbon Electrode for Uric Acid Detection*, Vandana Nagal, Talia Tuba, Virendra Kumar, Shamshad Alam, Akil Ahmad, **Aurangzeb Khurram Hafiz**, Mohammed B Alshammari, Rafiq Ahmad, **New Journal of Chemistry DOI: 10.1039/D2NJ01961B**

19. *Enhanced Refractive Index Sensing Performance Using Hydrothermally Prepared Tricomposite Nanoflower Structure of Ta2O5:Si:Graphite*, Farhan Ahmad, Shafaque Rahman, Rana Tabassum and **Aurangzeb Khurram Hafiz**, DOI: 10.21203/rs.3.rs-1021085/v1

20. *Power Dependent Hot Carrier Cooling Dynamics in Trioctylphosphine Capped CsPbBr3 Perovskite Quantum Dots Using Ultrafast Spectroscopy*, Virendra Kumar, Vandana Nagal, Shubhda Srivastava, Mahesh Kumar, Bipin Kumar, **Aurangzeb Khurram Hafiz** and Kedar Singh, **ChemistrySelect 6(38),** 10165-10177 (2021).

21. *Highly sensitive uric acid biosensor based on vertically arranged ZnO nanorods on ZnO nanoparticles seeded electrode*, Vandana Nagal, Virendra Kumar, Marya Khan, Suliman Alomar, Nirmalya Tripathy, Kedar Singh, Ajit Khosla, Naushad Ahmad, **Aurangzeb Khurram Hafiz** and Rafiq Ahmad, **New Journal of Chemistry DOI: 10.1039/D1NJ03744G (2021).**

22. *Nanoencapsulation of Polyphenols as Drugs and Supplements for Enhancing Therapeutic Profile A Review*, Saima Khatoon, Nida Kalam, Mohd. Farooq Shaikh, M. Saquib Hasnain, **Aurangzeb Khurram Hafiz** and Mohammed Tahir Ansari, **Current Molecular Pharmacology 14 DOI: 10.2174/1874467214666210922120924 (2021).**

23. *CsPbBr3 Nanoplatelets: Synthesis and Understanding of Ultraviolet Light-Induced Structural Phase Change and Luminescence Degradation*, Vandan Nagal, Virendra Kumar, Rahul Kumar, Kedar Singh, Ajit Khosla, Rafiq Ahmad and **Aurangzeb Khurram Hafiz, ECS Journal of Solid State Science and Technology 10(9)**, DOI: 10.1149/2162-8777/ac2078 (2021).

24. *Room Temperature Synthesis of Colossal Magneto-Resistance of* $La_{2/3}Ca_{1/3}MnO_3$ *:* $Ag_{0.10}$ *Composite*, Navjyoti Boora, Rafiq Ahmad, Poonam Rani, Pankaj Kumar Maheshwari, Ajit Khosla, Sonia Bansal, V. P. S. Awana and **A. K. Hafiz**, **ECS Journal of Solid State Science and Technology 10**, 027006 (2021).

25. *Understanding the stability concerns and electronic structure of CsYbX3 (X=Cl,Br) halidoperovskites for optoelectronic applications*, Shakeel Ahmad Khandy, Saamin Gowhar Vaid, Ishtihadah Islam, **Aurangzeb Khurram Hafiz**, Jeng-Da Chai, **Journal of Alloys and Compounds 867**, 158966 (2021).

26. *Growth and characterization of crystalline BaSnO3 perovskite nanostructures and the influence of heavy Mn doping on its properties*, Ishtihadah Islam, Shakeel Ahmad Khandy, M. Burhanuz Zaman, **Aurangzeb K. Hafiz**, Azher M. Siddiqui, Jeng-Da Chai, **Journal of Alloys and Compounds 867**, 158900 (2021).

27. *Review—Emerging Applications of g-C3N4 Films in PerovskiteBased Solar Cells*, Vandana Nagal, Virendra Kumar, Rafiq Ahmad, Marya Khan, Zishan H. Khan, Kedar Singh, Hidemitsu Furukawa, Ajit Khosla, Yoon Bong Hahn and **Aurangzeb Khurram Hafiz**, **ECS Journal of Solid State Science and Technology 10**, 065001 (2021).

28. *ZnO for stable and efficient perovskite bulk heterojunction solar cell fabricated under ambient atmosphere*, Sultan Ahmad, Hasan Abbas, Mohd. Bilal Khan, Vandana Nagal, **A. K. Hafiz**, Zishan H. Khan, **Solar Energy 216**, 164-170 (2021).

29. *Sol-gel syringe spray coating: A novel approach for Rietveld, optical and electrical analysis of CdO Film for optoelectronic applications*, R.A. Zargar, S. Chackrabarti, M.H. Malik, **A. K. Hafiz**, **Physics Open 7**, 100069 (2021)

30. *Influence of Rate of Radiation Energy on Charge-Carrier Kinetics Application of All-Inorganic CsPbBr3 Perovskite Nanocrystal*, Virendra Kumar, Vandana Nagal, Rahul Kumar, Shubhda Srivastava, Bipin Kumar Gupta, Mahesh Kumar, **Aurangzeb Khurram Hafiz**, Kedar Singh, **RSC Advances 10**, 34651–34657 (2020).

31. *Encapsulation of Cu-doped TiO2 nanocomposites with the understanding of weak photocatalytic properties for sunscreen applications*, Jyoti Bansal, Sanjay Kumar Swami, Rana Tabassum, Shailesh Narain Sharma and **Aurangzeb Khurram Hafiz**, **Journal of Dispersion Science and Technology**, DOI: 10.1080/01932691.2020.1841653 (2020).

32. *Screen printed TiO2 film: A candidate for photovoltaic applications*, Rayees Ahmad Zargar, Navjyoti Boora, Malik Mubasher Hassan, Aslam Khan and **Aurangzeb Khurram Hafiz**, **Materials Research Express 7**, 065904 (2020).

33. *A comparative study of micro- and nano-ZnO films fabricated by sol-gel syringe spray method*, Rayees Ahmad Zargar, Malik Mubasher Hassan, Navjyoti Boora, Imran Ahmed, Sajaad Ahmed, Khair-un Nissa, Sushma Kumari and **Aurangzeb Khurram Hafiz**, **International Journal of Ceramic Engineering and Science 2**, 169-176 (2020).

34. *Performance analysis of anomalous photocatalytic activity of Cr-doped TiO_2 nanoparticles [$Cr_{(x)}$ $TiO_{2(1-x)}$]*, Jyoti Bansal, Rana Tabassum, Sanjay Kumar Swami, Swati Bishnoi, Pargam Vashishtha, Govind Gupta, S. N. Sharma and **A. K. Hafiz**, **Applied Physics A 126,** 363 (2020).

35. *Photoreduction of Dye with Noble Metal Gold Permeated with Metal Oxide Titania*, Jyoti Bansal, **A. K. Hafiz** and Shailesh Narain Sharma, **Journal of Nanoscience and Nanotechnology 20 (6)**, 3896-3901, **ISSN:** 1533-4880 (2020).

36. *Eu doped NaYF4@Er:TiO2 nanoparticles for tunable ultraviolet light based anti- counterfeiting applications*, Anoop Singh, Sandeep Arya, ManikaKhanuja, **Aurangzeb Khurram Hafiz**, Ram Datt, Vinay Gupta & Ajit Khosla, **Microsystem Technologies** DOI 10.1007/s00542-019-04734-3 (2020).

37. *Electronic structure, thermomechanical and Phonon Properties of Inverse Perovskite Oxide (Na_3OCl): An ab initio Study*, Shakeel Ahmad Khandy, Ishtihadah Islam, Amel Laref, Mathias Gogolin, **Aurangzeb K. Hafiz**, Azher M. Siddiqui, **International Journal of Energy Research** DOI: 10.1002/er.4982, **ISSN:** 1099-114X (2019).

38. *Investigation of fundamental and higher harmonic AC magnetic susceptibility of FeSe0.5Te0.5 Superconductor*, A Pal, P Rani, **A K Hafiz**, Ashok Rao and V P S Awana, **Materials Research Express 6(9)**, 096004, **ISSN:** 20531591 (2019).

39. *Apparatus-dependent sol-gel synthesis of TiO2 nanoparticles for dye-sensitized solar cells*, Jyoti Bansal, Sanjay Kumar Swami, Akanksha Singh, Tarnija Sarao, Viresh Dutta, **A. K. Hafiz** & Shailesh Narain Sharma, **Journal of Dispersion Science and Technology,** DOI: 10.1080/01932691.2019.1699427, **ISSN:** 0193-2691 (2019).

40. *Influence of pH and Fe doping on structural and physical properties of Mg0.95Mn0.05- Fe O (x = 0, 0.04) nanoparticles*, Ishtihadah Islam, Azher M. Siddiqui, **Aurangzeb Khurram Hafiz**, Javid Ali and Shakeel Ahmad Khandy, **Journal of Physics and Chemistry of Solids**, DOI: 10.1016/j.jpcs.2019.05.030 (2019).

41. *Broad Inhibition of Transmission Frequency in Multilayered Dielectric One Dimensional Photonic Crystal Nanostructure*, Vinod Chacko, Sonia Bansal and **Aurangzeb Khurram Hafiz, International Journal of Science and Engineering 13(1),** 7-11 (2019).

42. *Effect of anisotropy on the spectral characteristics of one-dimensional porous silicon photonic crystal microcavity for optical sensing applications*, Vinod Chacko, Sonia Bansal and **Aurangzeb Khurram Hafiz**, **Journal of Nanophotonics 13(1),** 016012 (2019).

43. *Enhancement of omnidirectional bandgap in graphene based quasi-periodic one dimensional photonic crystal heterostructures*, Vinod Chacko, Sonia Bansal and **Aurangzeb Khurram Hafiz, Journal for Foundations and Applications of Physics 5 (2)**, 128-140, **ISSN:** 2394-3688 (2018).

44. *Effect of dispersion on omnidirectional reflection band in zinc oxide-based one- dimensional photonic crystal heterostructures*, Vinod Chacko, Sonia Bansal and **Aurangzeb Khurram Hafiz, Journal of Nanophotonics 12(2),** 026012 (2018).

45. *A Comprehensive Review of Properties of Screen-Printed Pure and Doped ZnO and CdO Thick Films*, Santosh Chackrabarti, **Aurangzeb K. Hafiz**, Rayees A. Zargar, **Current Alternative Energy, DOI: 10.2174/2405463102666180704111918 (2018).**

46. *Thermally Activated Flux Flow and Upper Critical Field of* $SmFeAsO_{0.8}F_{0.2}$ *Pnictide Superconductor*, Poonam Rani, **A. K. Hafiz** and V. P. S. Awana, **Asian Journal of Advanced Basic Sciences 6 (3)**, 73-76, **ISSN:** 2347-4114 (2018).

47. *Omnidirectional reflection band in multi-layered graphite film based one-dimensional photonic crystal nanostructure*, Vinod Chacko, Sonia Bansal and **Aurangzeb Khurram Hafiz, Journal for Foundations and Applications of Physics 5(1)**, 35-48, **ISSN:** 2394- 3688 (2018).

48. *Effect of 3d transition metal doping (Co, Ni and Cu) on structural, optical, morphological and dielectric properties of sol–gel assisted auto-combusted* $Mg_{0.95}Mn_{0.05}O$ *nanoparticles*, Ishtihadah Islam, Shakeel Ahmad Khandy, M. Burhanuz Zaman, Dinesh C. Gupta, **Aurangzeb Khurram Hafiz** & Azher Majid Siddiqui, **Journal of Materials Science: Materials in Electronics 29 (5)**, 3952-3956, **ISSN:** 0957-4522 (2018).

49. *Magnetic susceptibility and high field magneto-transport of silver added Bi-2223 superconductor: A Revisit*, P. Rani, R. S. Meena, **A. K. Hafiz**, V. P. S. Awana, **Journal of Superconductivity and Novel Magnetism 30 (7)**, 1737-1747, **ISSN:** 1557-1947 (2017).

50. *Realization of band gap shrinkage to the spectral characteristics of high-luminous- efficiency 658 nm AlGaInP/GaInP multiple quantum well lasers at room temperatures*, Santosh Chakrabarti, Rayees A Zargar, Jyoti Bansal, Tho-Alfiqar A. Zaker, **A. K. Hafiz**, **Optical Materials 58**, 426-431, **ISSN:** 0925-3467 (2016).

51. *Realization of structural and optical properties of CdZnO composite coated films for photovoltaic cell applications*, S. Chackrabarti, R. A. Zargar, S. Joseph, M. Arora, A. Aziz, **A. K. Hafiz**, **Optik 127**, 9966-9973, **ISSN:** 0030-4026 (2016).

52. *Optical properties of ZnO/SnO2 composite coated film*, R A Zargar, M A Bhatt, I R Parrey, M. Arora, J. Kumar, **A. K. Hafiz**, **Optik 127**, 6997-7001, **ISSN:** 0030-4026 (2016).

53. *Improvement in granularity of $NdFeAsO_{0.8}F_{0.2}$ superconductor through Ag_x doping (x=0.0-0.3)*, Poonam Rani, **A. K. Hafiz**, V. P. S. Awana, **Physica C 520,**1, **ISSN:** 0921- 4534(2016).

54. *An Intercomparison of the Upper Critical fields (H_{c2})of different Superconductors – $YBa_2Cu_3O_7$, MgB_2 , $NdFeAsO_{0.8}F_{0.2}$, $FeSe_{0.5}Te_{0.5}$ and Nb_2PdS_5*, R. Sultana, P. Rani, **A. K. Hafiz**, Reena Goyal and V.P.S. Awana, **Journal of Superconductivity and Novel Magnetism 29**, 1399-1404, **ISSN:** 1557-1947 (2016).

55. *Experimental study on the mechanism governing spectral shifts inlow power 670nm AlGaInP multiple quantum well (MQW) laser diodes at temperature range (5°C - 45°C)*, Santosh Chackrabarti, Dhrub Sharma, Shereena Joseph, Tho-Alfiqar A. Zaker, **Aurangzeb Khurram Hafiz**, Ram Kafle, **Canadian Journal of Physics 94**, 640-644, DOI: 10.1139/cjp-2015-0588, **ISSN:** 1208-6045 (2016).

56. *Investigation on the physical properties of $Zn_{0.94}Cu_{0.06}O$ coated film*, S. Chackrabarti, R.Zargar, D. Ali, M. Arora, A. Aziz and **A. K. Hafiz**, **Optik 127,** 2911, **ISSN:** 0030- 4026 (2016).

57. *Structural and optical characteristics of transparent conducting yttrium doped ZnO films using screen printing technology*, S. Chakrabarti, R. A. Zargar, A. Aziz and **A. K. Hafiz**, **Journal of Materials Science: Materials in Electronics 27**, 5271-5276, ISSN: 0957- 4522 (2016).

58. *Synthesis, characterization and interpretation of screen-printed nanocrystalline CdO thick film for optoelectronic applications*, Rayees Ahmad Zargar, Santosh Chackrabarti, Manju Arora, **Aurangzeb Khurram Hafiz, International Nano Letters 6,** 99-104, **ISSN:** 2008-9297 (2016).

59. *Alcohol Vapor Sensing By Cadmium Doped Zinc Oxide Thick Films Based Chemical Sensor***,** R.A. Zargar, M. Arora, S. Chackrabarti, S. Ahmad, M. Ganaie and **A. K. Hafiz, Modern Physics Letters (B) 30**, 1650244, DOI: 10.1142/s0217984916502444, **ISSN:** 1793-6640 (2016).

60. *Compression of ultra-short pulses due to cascaded second order nonlinearities in photonic bandgap structures*, Shereena Joseph, Mohd. Shahid Khan and **Aurangzeb Khurram Hafiz, European Physical Journal D 70**, 1, **ISSN:** 1434-6060 (2016).

61. *Novel Composites of $Zn_{1-x}Cd_xO$ (x = 0, 0.05, 0.1) Thick Films for Optoelectronic Device Application*, R .A. Zargar, S. Chackrabarti, M. Shahabuddin, J. Kumar, M. Arora and **Aurangzeb Khurram Hafiz, Journal of Materials Science: Materials in Electronics 26**,120027, **ISSN:** 0957-4522 (2015).

62. *Investigation of Physical Properties of Screen Printed nanosized ZnO Films for Optoelectronic Applications*, R. A. Zargar, M. Arora and **Aurangzeb Khurram Hafiz**, **European Physical Journal Applied Physics 70,** 10403, **ISSN**: 1286-0042 (2015).

63. *Synthesis and Characterization of Screen Printed ZnO Films for Solar Cell Applications*, R. A. Zargar, S. Chackrabarti, S. Joseph, R.Husain and **A. K. Hafiz**, **Optik 126**, 4171, **ISSN:** 0030-4026 (2015).

64. *Synthesis and Characterization of Vanadium Doped Zinc Oxide Thick Film for Chemical Sensor Application*, R. A. Zargar, M. Arora, M. Ahmad and **Aurangzeb Khurram Hafiz**, **Journal of Materials** DOI: 10.1155/2015/196545, **ISSN** 1996-1944 (2015).

65. *Omnidirectional reflector using one-dimensional dispersive Photonic Heterostructure*, Shereena Joseph and **Aurangzeb Khurram Hafiz**, **Optik 125,** 2734, **ISSN:** 0030-4026 (2014).

66. *Parameters for efficient growth of second harmonic field in nonlinear photonic crystals*, Shereena Joseph, Mohd. Shahid Khan and **Aurangzeb Khurram Hafiz**, **Physics Letter A 378**, 1296, ISSN: 0375-9601(2014).

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LECTURES / TALKS / PAPERS PRESENTED

- *Blue shift in a one-dimensional photonic crystal due to interference of second- and third- order nonlinearities*, at the Seventh International Conference on Optoelectronics, Fiber Optics and Photonics: Photonics-2004*, Kochi, India*, *December 2004.*
- *Study of some coherent nonlinear optical interactions*, at Indo-French CEFIPRA workshop for young scientists on Laser Physics and Quantum Optics, 4 to 8 January, 2006, RRI, Bangalore, India.
- *Quantum noise properties of a two-mode laser,* at the 2nd International Conference on "Current Developments in Atomic, Molecular and Optical Physics", *New Delhi, India, March 2006*.
- *Atomic memory effect in a two-mode laser*, at the 2nd International Conference on "Current Developments in Atomic, Molecular and Optical Physics", *New Delhi, India, March 2006*.
- *Careers in Physics*, Physics Association Lecture Series, Department of Physics, JMI, January 28, 2008.
- *Light-Matter interaction inside periodic nanostructures*, Physics Association Lecture Series, Department of Physics, JMI, June 09, 2008.
- *Photonic Crystals: Moulding the flow of light*, Physics Association Lecture Series, Department of Physics, JMI, August 13, 2008.
- *Chandrayan I: Mission to the Moon*, Physics Association Lecture Series, Department of Physics, JMI, November 19, 2008.
- *Multiple Quantum Well laser systems*, Physics Association Lecture Series, Department of Physics, JMI, February 13, 2009.
- *Photonic Crystals: Road to Nanophotonics*, Physics Association Lecture Series, Department of Physics, JMI, August 29, 2014.
- *Retrospection*, Physics Association Lecture Series, Department of Physics, JMI, October 29, 2014.
- *Photonic structure based devices*, Seminar on 'Smart Materials and Integrated Circuits', organized by YMCAUST, Faridabad, November 08, 2016.
- *Effect of Self interaction of an ultra short pulse in a one-dimensional Nonlinear Chalcogenide based Photonic Crystal*, National Conference on Advanced Materials and Nanotechnology (AMN-2018), Organized by: Jaypee Institute of Information Technology, Noida, India, March 15 – 17, 2018.
- *Technological Emergence between Academia and Industry*, NSTC Nanotech 2018 Industry Innovations, Organized by: STM Conferences, November 28, 2018

- Lecture on '*Nanotechnology*', 124th 4-week OP organized by the UGC-HRDC, JMI, March 05, 2019.
- *Light – Matter interaction at the Nanoscale: Photonic Crystal microcavity for optical sensing applications*, Webinar on Zoom organized by PES University, Bengaluru, July 09, 2020.
- *Emerging Trends in Nanoscience and Nanotechnology and Potential application in Medical Sciences*, Webinar on Zoom organized by Society for Brain Mapping & Therapeutics (SBMT), CA, USA, November 26, 2020.
- *2D photonic structures for advanced optical sensing applications*, Webinar on Google Meet organized by Tezpur University, Assam, Session 14 of FDP on *Progress in Novel Two-dimensional Materials*, October 08, 2021.
- *Effect of magnetic field and injection current on spectral characteristics of multiple quantum well laser*, **30th International Conference on Advanced Laser Technology (ALT 23), Samara, Russia, 18-23 September 2023.**

CONFERENCES / SYMPOSIUM / WORKSHOPS ATTENDED

- Seventh International Conference on Optoelectronics, Fiber Optics and Photonics: Photonics-2004*, Kochi, India*, *December 2004*.
- Indo-French CEFIPRA workshop for young scientists on Laser Physics and Quantum Optics, 4 to 8 January, 2006, RRI, Bangalore, India.
- 2nd International Conference on "Current Developments in Atomic, Molecular and Optical Physics", *New Delhi, India, March 2006*.
- Symposium on Quantum Information, School of Physical Sciences, JNU, New Delhi, March 2007.
- National Seminar on Nano-Materials & Devices, held at JMI on January 30, 2008.
- Natural Science Info-Fest, JMI, March 03-05, 2008.
- National Seminar on Condensed Matter, High Energy and Nuclear Physics, Department of Physics, JMI, New Delhi-25, March 23-24, 2009.
- National Workshop on FIBER OPTICS & APPLICATIONS held at South Campus, Delhi University, New Delhi, November 28-29, 2009.
- National Seminar on Advances in Materials and Devices held at ITM University, Gurgaon, on May 15, 2010.
- XV International Workshop on the Physics of Semiconductor Devices (IWPSD-2009) held at JMI, New Delhi, December 15-19, 2009.
- National Seminar on Developments in Materials, Theoretical and High Energy Physics held at JMI during February 19-20, 2010.
- "SPS@25", Organized by School of Physical Sciences, JNU, March 10-11, 2011.
- 7th Dynamics Day Delhi, School of Physical Sciences, JNU, December 13, 2011.

- 8th Dynamics Day Delhi, Centre for Theoretical Physics, JMI, November 10, 2012.
- National Conference on Role of Science and Technology Towards 'Make in India' (RSTTMI-2016), organized by J. C. Bose University (formerly YMCAUST), Faridabad,, March 05-07, 2016.
- National Seminar on 'Smart Materials and Integrated Circuits', organized by J. C. Bose University (formerly YMCAUST), Faridabad, November 08, 2016.
- Global Meet on Advances in Design, Materials & Thermal Engineering (GMADMT – 2018), organized by Saraswati College of Engineering, Navi Mumbai, January 11-12, 2018.
- National Conference on Advanced Materials and Nanotechnology (AMN-2018), organized by Jaypee Institute of Information Technology (JIIT) University, Noida, March 15 – 17, 2018.
- NSTC Nanotech 2018, Industry Innovations, organised by STM Conferences, New Delhi, November 28, 2018.
- National Conference on Nano-polysachcharides for Environmental Sustainability, organised by Department of Chemistry, JMI, September 25, 2019.

SEMINARS & CONFERENCES ORGANISED

- **Joint Secretary:** National Seminar on Condensed Matter, High Energy and Nuclear Physics, Department of Physics, JMI, New Delhi-25 (March 23-24, 2009).
- **Member Local Organizing Committee:** International Workshop on **Physics of Semiconductor Devices**, IWPSD-2009 Jamia Millia Islamia, December 15-19, 2009.
- **Organizing Committee Member:** Salaam Memorial Lectures (2007-2015).
- **Organized** Extension Lectures, Jamia Physics Association (2007-2010, 2013-2014).
- **Treasurer:** ***International Conference on Advanced Materials*** **(ICAM 2019)**, organized by Centre for Nanoscience and Nanotechnology, Jamia Millia Islamia, New Delhi, March 06-07, 2019.

ORIENTATION PROGRAMME / REFRESHER COURSE

- 5th Three-week Special Summer School, UGC-HRDC, JMI, New Delhi (May 26 – June 15, 2016).
- 3rd Refresher Course in Basic Sciences (Interdisciplinary), UGC-HRDC, JMI, New Delhi (May 9-30, 2013).
- 102nd Orientation Programme, UGC-HRDC, JMI, New Delhi, (Oct. 10 – Nov. 09, 2012).
- Faculty Development Program I, Academic Staff College, Amity University, Noida, 2006.

- Faculty Development Program II, Academic Staff College, Amity University, Noida, 2006.

CONTRIBUTION TO CORPORATE LIFE

- Officiating Director, Centre for Nanoscience and Nanotechnology, JMI (Nov. 2019 – till date).
- Hony. Deputy Director, Games & Sports, JMI (Nov. 2015 – Feb. 2019).
- Advisor, Jamia Physics Association (2007-2010, 2013-2015).

MEMBERSHIP OF ACADEMIC AND PROFESSIONAL BODIES

- Life Member, Optical Society of India