Vijay Kumar

Assistant Professor of Physics

National Institute of Technology Srinagar (*An autonomous Institute of National Importance under the aegis of Ministry of Education, Govt. of India*), Hazratbal-190006 J&K (India)

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Education

University of the Free State, South Africa

Post-doc, Phosphors Research Lab — April 2013 - Dec. 2015

Mentor, Hendrik C. Swart. *Solid State Luminescent and Advanced Materials*.

Sant Longowal Institute of Engineering and Technology *(Deemed-to-be-University, Under MHRD, Govt. of India)*

Ph.D. in Physics (Material Science/Polymer Science & Engineering) — Dec. 2008 – Feb. 2013

Advisor, Amarjit Singh Dhaliwal

National Institute of Technology, Jalandhar (Punjab)

Master of Science (MSc.) in Physics — June 2006 – June 2008

Himachal Pradesh University, Shimla, India

Bachelor of Science (BSc.) in Non-Medical — March 2003 – March 2005

Professional Experience

National Institute of Technology Srinagar

Assistant Professor, Department of Physics — 12.10.18-

Chandigarh University, Punjab

Assistant Professor, Department of Physics — Jan. 2016 - Oct. 2018

University of the Free State, South Africa

Post-doctoral Associate, Department of Physics — April 2013 – Dec. 2015

Research Publications

S. No.	Type of publication & their status	No. of Publications
1.	Papers Published in Journals	**85**
2.	Conference Proceedings	**10**
3.	Patent	**03** (*filed*)
4.	Books Edited	**05** *(+04 in progress)*
5.	Book Chapters Published/Accepted/Submitted	**16**
6.	Total Impact Points	**329** (*Av. I.F. 3.8*)
7.	h-index as per Scopus Database (Author ID: 55658056846)	**29**
8.	Total no. of Citation as per Scopus	**2877**
9.	h-index as per Google Scholar	**33 (*i10-index = 67*)**
10.	Total no. of Citation as per Google Scholar	**3300**

Research Projects (Completed/ Ongoing)

I. Received grant-in-aid for the joint center project titled "*Joint Center for generating tissue-engineered organs and controlling cell bhehaviour*" to Raju Kumar Gupta, IIT Kanpur (Indian Nodal PI); Kartikey Verma, IIT Kanpur; **Vijay Kumar, National Institute of Technology Srinagar**; Kashma Sharma, Panjab University Chandigarh; Ali Khademhosseini, Harvard-MIT Division of Health Sciences and Technology, Massachusetts Institute of Technology (MIT), Cambridge (U.S. Nodal PI) and Akhilesh K Gaharwar, Texas A&M University, College Station.

Funded by Indo-US Science and Technology Forum. (IUSSTF-JC-025-2016) (2017-2019) (Rs 49.81 Lakhs)

II. Principle Investigator of Research Project entitled "*Plasmon Enhanced Upconversion Luminescence of $NaYF_4$: Er, Yb Nanocomposite Core Shell for Solar Cell Application*".

Funded by Science and Engineering Research Board (SERB), Department of Science and Technology, New Delhi. (SB/FTP/ETA-215/2014). (2016-2019) (Rs 30.0 Lakhs)

Honors/Awards

- Received award for "*Teacher with Best Research Contribution*" from Hon'ble Chancellor, Chandigarh University on Teachers Day (2017).
- Received award for "*IAAM Best Oral Presentation*" (Certificate No. BOPA-2/2017/IAAM) in the 7th South African Conference on Photonic Materials on 30th March 2017 at Amanzi Game Reserve, Bloemfontein, South Africa.
- Received grant under "*International Travelling Support Scheme*" from SERB/DST, New Delhi to attend 3rd International Conference on Mechanical Properties of Materials (ICMPM 2016) Venice, Italy during December 14-17, 2016.
- Received "*Young Scientist Award (No. ET-2015/2014)*" under the fast track scheme of Department of Science and Technology, New Delhi (2015).
- Received "*Post-Doctoral Fellowship*" from the University of the Free State, South Africa (April 2013-Decemebr 2015).
- Received grant under "*International Travelling Support Scheme*" from DST, New Delhi to attend an International Conference on "Nuclear Tracks in Solids (ICNTS- 2011)" Puebla, Mexico during September 4-9, 2011.
- Received Best Poster Presentation Award in an "*International Symposium on "Accelerator and Radiation Physics (ISARP -2011)*" at Saha Institute of Nuclear Physics (SNIP), Kolkata during February 16-18, 2011.

Patent Filed

i. Title: *Biodegradable packaging film and a process for its preparation thereof*.

Inventors: Vishal Sharma, Kashma Sharma, **Vijay Kumar**, Sonal Chaudhary.

Indian Patent Application No.: 202111018921 (Filed on: 23/04/2021)

ii. Title: *Graphene oxide based solar tiles for maintaining consistent home temperature*.

Inventors: R. P Joshi, H. S Dhami, P. Kumar, A. Pandey, R. Singhal, Shipra, B. C. Joshi, **Vijay Kumar**, K. Sharma, K. Pandey.
Reference No.: UCS&T/PIC/PATENT-27/2018-19/.

iii. Title: *Multi stage water filter made of Graphene aerogel, TiO_2, Rice husk with ocimum tenuiflorum (holy basil or Tulsi), treated with $Al(OH)_3$ and Azadirachta indica (Neem), Air filter made from bamboo-GO fibre, plastic waste and graphene-TiO_2 aerogel and Graphene aerogel based Water filter for army and tribal people*.

Inventors: H. S Dhami, R. P. Joshi, A. Pandey, K. Sharma, P. Kumar, M. Bora, B. C. Joshi, **Vijay Kumar**.

Reference No.: UCS&T/PIC/PATENT-01-02-03/2019-20.

Books Edited

1. Editors: **Vijay Kumar**, S. Kalia, H. C Swart, "Conducting Polymer Hybrids", *Publisher: Springer International Publishing AG Switzerland*, ISBN 978-3-319-46456-5 (2017), ISBN 978-3-319-46458-9 (eBook).
2. Editors: A. Tiwari, P. K. Iyer, **Vijay Kumar**, H. C. Swart, "Advanced Magnetic and Optical Materials" *Publisher: WILEY-Scrivener Publishing LLC, USA*, ISBN: 9781119241911 (2017).
3. Editors: **Vijay Kumar**, B. Chaudhary, V. Sharma, K. Verma, "Radiation Effects in Polymeric Materials", *Publisher: Springer International Publishing AG Switzerland*, ISBN 978-3-030-05769-5 (2019), ISBN 978-3-030-05770-1 (eBook).
4. Editors: V. Dubey, S. Som, **Vijay Kumar**, Luminescent materials in display and biomedical applications, *Publisher: CRC Press Taylor & Francis Group*, ISBN 9780367112127 (2020).
5. Editors: S. K. Tiwari, K. Sharma, V. Sharma, **Vijay Kumar**, Electrospun Nanofibers: Fabrication, Functionalisation and Applications, *Publisher: Springer International Publishing AG Switzerland*, eBook ISBN: 978-3-030-79979-3 (2021), DOI: 10.1007/978-3-030-79979-3 (*In Press*).
6. Editors: **Vijay Kumar**, Sudipta Som, Vishal Sharma, Hendrik C Swart, Metal Oxide Defects: Fundamentals, Design, Development and Applications. Publisher: Elsevier (*Book proposal accepted*).
7. Editors: **Vijay Kumar**, Kashma Sharma, Rakesh Sehgal, Susheel Kalia, Conjugated Polymers for Next Generation of Photovoltaics, Energy Storage and Electronics, Vol I. Publisher: Elsevier (*Book proposal accepted*).
8. Editors: **Vijay Kumar**, Kashma Sharma, Rakesh Sehgal, Susheel Kalia, Conjugated Polymers for Next Generation of Photovoltaics, Energy Storage and Electronics, Vol II. Publisher: Elsevier (*Book proposal accepted*).
9. Editors: **Vijay Kumar**, Vishal Sharma, Hendrik C Swart, Subrata Das, Metal Oxide for Next Generation Optoelectronic, Photonic and Photovoltaic Applications. Publisher: Elsevier (*Book proposal accepted*).

Scientific Publications

Refereed journal publications (**denotes first/corresponding author*).

Published from NIT Srinagar (2019-)

1. V. Sharma, S. Choudhary, P. Mankotia, A. Kumari, K. Sharma, Rakesh Sehgal, **Vijay Kumar**, Nanoparticles as Fingermark Sensors, *TrAC Trends in Analytical Chemistry* 143 (2021) 116378. (I.F. = 12.296)

2. K. Sharma, S. Sharma, S. Thapa, M. Bhagat, **Vijay Kumar***, V. Sharma, Nanohydroxyapatite-, Gelatin-, and Acrylic Acid-Based Novel Dental Restorative Material, *ACS Omega* 5 (2020) 27886-27895. (I.F. = 3.512)

3. Kashma Sharma, Shreya Sharma, Vipasha Sharma, Pawan Kumar Mishra, Adam Ekielski, Vishal Sharma, **Vijay Kumar***, Methylene Blue Dye Adsorption from Wastewater Using Hydroxyapatite/Gold Nanoparticles Composites: Kinetic and Thermodynamics Studies, *Nanomaterials* 11 (2021) 1403. (I.F. = 5.076)

4. S. Sharma, K. Virk, K. Sharma, S. K. Bose, **Vijay Kumar***, V. Sharma, M. L. Focarete, S. Kalia, "Preparation of gum acacia-poly(acrylamide-IPN-acrylic acid) based nanocomposite hydrogels via polymerization methods for antimicrobial applications", *Journal of Molecular Structure* 1215 (2020) 128298. (I.F. = 3.196)

5. S. Choudhary, K. Sharma[#], **Vijay Kumar***, J. K. Bhatia, S. Sharma, V. Sharma[#], "Microwave-Assisted Synthesis of Gum Gellan-cl-poly (acrylic-co- methacrylic acid) Hydrogel for Cationic Dyes Removal", *Polymer Bulletin* 77 (2019) 4917-4935. (I.F. = 2.870).

6. S. Verma, D. Kumar, S. Dutta, V. Sharma, H. C. Swart, **Vijay Kumar***, "A novel near white light emitting phosphor $KSrYSi_2O_7:Dy^{3+}$: Synthesis, characterization and luminescence properties", *Vacuum* 174 (2020) 109179. (I.F. = 3.627)

7. P. Mankotia, S. Choudhary, K. Sharma[#], **Vijay Kumar***, J. K. Bhatia, A. Parmar, S. Sharma, V. Sharma[#], "Neem gum based pH responsive hydrogel matrix: A new pharmaceutical excipient for the sustained release of anticancer drug", *International Journal of Biological Macromolecules* 142 (2020) 742-755. (I.F. = 6.953)

8. R. Chauhan, R. Kumar, **Vijay Kumar**, K. Sharma, V. Sharma, On the discrimination of soil samples by derivative diffuse reflectance UV-Vis-NIR spectroscopy and Chemometric methods, *Forensic Science International* 319 (2021) 110655. (I.F. = 2.395)

Published before Oct. 2019

9. D. Kumar, S. Verma, K. Verma, S. Som, **Vijay Kumar*,** H. C Swart, "Enhanced upconversion study of Er^{3+}-Yb^{3+} codoped $NaYF_4$ phosphors synthesized by the reverse microemulsion method", *Ceramics International* 44 (2018) 13649-13653. (I.F. = 4.527)

10. D. Kumar, K. Verma, S. Verma, B. Chaudhary, S. Som, V. Sharma, **Vijay Kumar***, H. C. Swart, "Recent advances in enhanced luminescence upconversion of lanthanide-doped $NaYF_4$ phosphors", *Physica B: Condensed Matter* 535 (2018) 278-286 (I.F. = 2.436)

11. A. Yousif, B. H. Abbas, **Vijay Kumar**, A. Pandey, H. C. Swart, "Luminescence properties of Eu^{3+} activated Y_2O_3 red phosphor with incorporation of Ga^{3+} and Bi^{3+}

trace hertero-cations in the Y_2O_3 lattice", *Vacuum* 155 (2018) 73-75. (I.F. = 3.627)

12. S. Verma, K. Verma, D. Kumar, B. Chaudhary, S. Som, V. Sharma, **Vijay Kumar***, H. C. Swart, "Recent advances in rare earth doped alkali-alkaline earth borates for solid state lighting applications", *Physica B: Condensed Matter* 535 (2018) 106-113 (I.F. = 2.436)

13. V. Kumar, R. Gupta, J. Ram, P. Singh, **Vijay Kumar**, S. K. Sharma, R. S. Katiyar, R. Kumar, "High energy 120 MeV Ti^{9+} ions beam induced modifications in optical, structural and surface morphological properties of titanium dioxide thin films", *Vacuum* 166 (2019) 323-334. (I.F. = 3.627)

14. P. Singh, J. Ram, S. Gupta, **Vijay Kumar**, S. K. Sharma, R. Kumar, "Electronic energy transfer effects of Ti^{9+} and S^{9+} ions irradiations upon structural, optical and chemical properties of Kapton-H polymer", *Vacuum* 157 (2018) 447-452. (I.F. = 3.627)

15. V. Sharma, R. Kumar, K. Devgan, P. K. Mishra, A. Ekielski, **Vijay Kumar**, V. Kumar, "Multivariate analysis for forensic characterization, discrimination, and classification of marker pen inks", *Spectroscopy Letters* 51 (2018) 205-215. (I.F. = 1.179)

16. D. Kumar, S. Verma, V. Sharma, **Vijay Kumar***, "Synthesis, characterization and upconversion luminescence of core-shell nanocomposites $NaYF_4$: Er/Yb@SiO_2@Ag/Au", *Vacuum* 157 (2018) 492-496. (I.F. = 3.627)

17. V. Hasija, K. Sharma, **Vijay Kumar**, S. Sharma, V. Sharma, "Green synthesis of agar/Gum Arabic based superabsorbent as an alternative for irrigation in Agriculture", *Vacuum* 157 (2018) 458-464. (I.F. = 3.627)

18. A. Das, V. Sharma, **Vijay Kumar**, V. Kumar, K. Verma, H. C. Swart, "Combustion synthesis and characterization of blue long lasting phosphor $CaAl_2O_4$: Eu^{2+}, Dy^{3+} and its novel application in fingerprint and Lip mark detection", *Physica B: Condensed Matter* 535 (2018) 149-156 (I.F. = 2.436)

19. R. Kumar, V. Sharma, N. Verma, P. K. Diwan, V. Kumar, **Vijay Kumar**, "Analysis of writing/printing paper via thermogravemetric analysis: Application in forensic science", *Australian Journal of Forensic Sciences* 51 (2018) 22-39. (I.F. = 1.083)

20. S. K. Tiwari, K. Verma, P. Saren, R. Oraon, A. De Adhikari, G. C. Nayak, **Vijay Kumar***, "Manipulating selective dispersion of reduced graphene oxide in polycarbonate/nylon 66 based blend nanocomposites for improved thermo-mechanical properties", *RSC Advances* 7 (2017) 22145. (I.F. = 3.361)

21. K. Verma, B. Chaudhary, **Vijay Kumar***, V. Sharma, M. Kumar, "Investigation of structural, morphological and optical properties of Mg: ZnO thin films prepared by sol-gel spin coating method", *Vacuum* 146 (2017) 524-529. (I.F. = 3.627)

22. K. Sharma, **Vijay Kumar***, C. Swart-Pistor, B. Chaudhary, H. C. Swart, "Synthesis, characterization and anti-microbial activity of a novel superabsorbent based on agar-poly (methacrylic acid-glycine)", *Journal of Bioactive and Compatible Polymers* 32(1) (2017) 74-91. (I.F. = 1.756)

23. S. Dutta, S. Som, A. K. Kunti, **Vijay Kumar**, S. K. Sharma, H. C. Swart, H. G. Visser, "Structural and luminescence responses of $CaMoO_4$ nano phosphors synthesized by hydrothermal route to swift heavy ion irradiation: Elemental and spectral stability", *Acta Materialia* 124 (2017) 109-119. (I.F. = 8.203)

24. G. Kumar, R. K. Kotnala, J. Shah, **Vijay Kumar**, A. Kumar, P. Dhiman, M. Singh, "Cation distribution: a key to ascertain the magnetic interactions in a cobalt substituted Mg–Mn nanoferrite matrix", *Physical Chemistry Chemical Physics* 19 (2017) 16669-16680 (I.F. = 3.676)

25. D. D. Ramteke, A. Balakrishna, **Vijay Kumar**, H. C. Swart, "Luminescence dynamics and investigation of Judd-Ofelt intensity parameters of Sm^{3+} ion containing glasses", *Optical Materials* 64 (2017) 171-178. (I.F. = 3.08)

26. K. Verma, B. Chaudhary, **Vijay Kumar***, V. Sharma, M. Kumar, "Influence of Fe-doping on the structural, optical and luminescent behavior of ZnO thin films deposited by spin coating technique", *Vacuum* 146 (2017) 478-482. (I.F. = 3.627)

27. **Vijay Kumar***, S. Som, S. Dutta, S. Das, H. C. Swart, "Influence of Ho^{3+} doping in the temperature sensing behavior of Er^{3+}-Yb^{3+} doped $CaLa_2ZnO_5$ phosphor, *RSC Advances* 6 (2016) 84914-84925. (I.F. = 3.361)

28. **Vijay Kumar***, M. Gohain, S. Som, V. Kumar, B. C. B. Bezuindenhoudt, H. C. Swart, "Microwave assisted synthesis of ZnO nanoparticles for lighting and dye removal application", *Physica B: Condensed Matter* 480 (2016) 36-41. (I.F. = 2.436)

29. S. Som, **Vijay Kumar***, V. Kumar, M. Gohain, A. Pandey, M. M. Duvenhage, J. J. Terblanse, H. C. Swart, B. C. B. Bezuindenhoudt, "Dopant distribution and influence of sonication temperature on the pure red light emission of mixed oxide phosphor for solid state lighting", *Ultrasonics Sonochemistry* 28 (2016) 79-89. (I.F. = 7.491)

30. S. K. Tiwari, **Vijay Kumar**, A. Huczko, R. Oraon, A. D Adhikari, G. C. Nayak, "Magical Allotropes of Carbon: Prospects and Applications", *Critical Reviews in Solid State and Materials Sciences* 41 (2016) 257-317. (I.F. = 10.367)

31. **Vijay Kumar***, S. Som, S. Dutta, Subrata Das, and H. C. Swart, "Red-light emitting inorganic La_2CaZnO_5 frameworks with high photoluminescence quantum efficiency: Theoretical approach", *Materials & Design* 93 (2016) 203-215. (I.F. = 7.991)

32. D. D. Ramteke, **Vijay Kumar**, H. C. Swart, "Spectroscopic studies of Sm^{3+}/Dy^{3+} co-doped lithium boro-silicate glasses", *Journal of Non-Crystalline Solids* 438 (2016) 49-58. (I.F. = 3.531)

33. S. Dutta, S. K. Sharma, **Vijay Kumar**, S. Som, H. C. Swart, H. G. Visser, "Ion-induced modification of structural, optical and luminescence behaviour of Gd2MoO6 nanomaterials: A comparative approach", *Vacuum* 128 (2016) 146-157. (I.F. = 3.627)

34. Preeti, S.P. Gairola, **Vijay Kumar**, K. Singh, S. K. Dhawan, "Barium ferrite and graphite integrated with polyaniline as effective shield against electromagnetic interference", *Synthetic Metals* 221 (2016) 326-331. (I.F. = 3.266)

35. K. Sharma, **Vijay Kumar***, V. Kumar, H. C. Swart, "Advances in phosphors based on organic materials for solid state lighting applications", *Physica B: Condensed Matter* 480 (2016) 105-110. (I.F. = 2.436)

36. S. Dutta, S. Som, A. K. Kunti, S. K. Sharma, **Vijay Kumar**, H. C. Swart, H. G. Visser, "Ag^{7+} ion induced modification of morphology, optical and luminescence behaviour of charge compensated $CaMoO_4$ nanophosphor", *Nuclear Instruments and Methods in Physics Research Section B* 384 (2016) 76-85. (I.F. = 1.377)

37. K. Sharma, **Vijay Kumar***, B. Chaudhary, B. S. Kaith, S. Kalia, H. C. Swart, "Application of biodegradable superabsorbent hydrogel composite based on gum ghatti-co-poly(acrylic acid-aniline) for controlled drug delivery", *Polymer Degradation and Stability* 124 (2016) 101-111. (I.F. = 5.03)

38. A. Pandey, V. K. Rai, V. Kumar, **Vijay Kumar**, H. C. Swart, "Upconversion based temperature sensing ability of Er^{3+}-Yb^{3+} codoped $SrWO_4$: An optical heating phosphor", *Sensors and Actuators B: Chemical* 209 (2015) 352-358. (I.F. = 7.46)

39. N. Kumar, **Vijay Kumar**, H.C. Swart, A. K Mishra, J. C. Ngila, V. Parashar, "Controlled microstructural hydrothermal synthesis of strontium selenides host matrices for EuII and EuIII luminescence", *Materials Letters* 146 (2015) 51-54. (I.F. = 3.423)

40. S. Som, S. Dutta, **Vijay Kumar**, A. Pandey, V. Kumar, A. K. Kunti, J. Priya, S. K. Sharma, J. J. Terblans, H. C. Swart, "$CaTiO_3$: Eu^{3+}, a potential red long-lasting phosphor: Energy migration and characterization of trap level distribution", *Journal of Alloys and Compounds* 622 (2015) 1068-1073. (I.F. = 5.316)

41. K. Sharma, **Vijay Kumar***, B. S. Kaith, S. Som, V. Kumar, A. Pandey, S. Kalia, H. C. Swart, "Synthesis of biodegradable Gum ghatti based poly(methacrylic acid-aniline) conducting IPN hydrogel for controlled release of amoxicilin trihydrate", *Industrial & Engineering Chemistry Research* 54 (2015) 1982-1991. (I.F. = 3.72)

42. K. Sharma, **Vijay Kumar***, B. S. Kaith, V. Kumar, S. Som, A. Pandey, S. Kalia, H. C. Swart, "Evaluation of a conducting interpenetrating network based on Gum ghatti-g-poly(acrylic acid-aniline) as a colon-specific delivery system for amoxicilin trihydrate and paracetamol", *New Journal of Chemistry* 39 (2015) 3021-3034. (I.F. = 3.591)

43. K. Sharma, **Vijay Kumar***, B. S. Kaith, V. Kumar, S. Som, S. Kalia, H. C. Swart, "Synthesis, characterization and water retention study of biodegradable gum ghatti-poly(acrylic acid-aniline) hydrogels", *Polymer Degradation and Stability* 111 (2015) 20-31. (I.F. = 5.03)

44. B. S. Kaith, R. Sharma, K. Sharma, S. Choudhary, **Vijay Kumar***, S. P. Lochab, "Effects of O7+ and Ni9+ swift heavy ions on polyacrylamide grafted Gum acacia thin film and sorption of methylene blue", *Vacuum* 111 (2015) 73-82. (I.F. = 3.627)

45. K. Sharma, B. S. Kaith, S. Kalia, **Vijay Kumar***, H. C. Swart, "Gum ghatti based biodegradable and conductive carriers for colon-specific drug delivery", *Colloid and Polymer Science* 293 (2015) 1181-1190. (I.F. = 1.931)

46. S. Som, A. K. Kunti, V. Kumar, **Vijay Kumar**, S. Dutta, M. Chowdhury, S. K. Sharma, J. J. Terblans, H. C. Swart, "Defect correlated fluorescent quenching and electron phonon coupling in the spectral transition of Eu3+ in CaTiO3 for red emission in display application", *Journal of Applied Physics* 115 (2014) 193101. (I.F. = 2.546)

47. V. Kumar, **Vijay Kumar**, S. Som, M. M. Duvenhage, O. M. Ntwaeaborwa, H. C. Swart, "Effect of Eu doping on the photoluminescence properties of ZnO nanophosphors for red emission application", *Applied Surface Science* 308 (2014) 419-430. (I.F. = 6.707)

48. V. Kumar, **Vijay Kumar**, S. Som, J. H. Neethling, M. Lee, O. M. Ntwaeaborwa, H. C.

Swart, "Role of surface and deep-level defect on the emission of tin oxide quantum dots", *Nanotechnology* 25 (2014) 135701 (9pp). ***[Highlighted as a news in the Nanotechnology home page (http://iopscience.iop.org/0957-4484/ labtalk-article/56163) and Journals Sister Website, Nanotechweb.org (http://nanotechweb.org/cws/article/ lab/56163)]***. (I.F. = 3.874)

49. V. Kumar, **Vijay Kumar**, S. Som, A. Yousif, N. Singh, O. M. Ntwaeaborwa, A. Kapoor, H. C Swart, "Effect of annealing on the structural, morphological and photoluminescence properties of ZnO thin films prepared by spin coating", *Journal of Colloid and Interface Science* 428 (2014) 8-15. (I.F. = 8.128)

50. A. Pandey, S. Som, **Vijay Kumar**, V. Kumar, V. K. Rai, H. C. Swart, "Enhanced upconversion and temperature sensing study of Er3+-Yb3+ codoped tungsten-tellurite glass", *Sensors and Actuators B: Chemical* 202 (2014) 1305-1312. (I.F. = 7.46)

51. V. Kumar, S. Som, **Vijay Kumar**, V. Kumar, O. M. Ntwaeaborwa, E. Coetsee, H. C. Swart, "Tunable and white light emission from ZnO: Tb3+ nanophosphors for solid state lightening application", *Chemical Engineering Journal* 255 (2014) 541-552. (I.F. = 13.273)

52. S. Som, P. Mitra, **Vijay Kumar**, V. Kumar, J. J. Terblans, H. C Swart, S. K Sharma, "The energy transfer phenomena and colour tunability in Y2OS:Eu^{3+}/Dy^{3+} micro fibers for white light emission in solid state lighting application", *Dalton Transaction* 43 (2014) 9860. ***[Featured as a front cover page of the journal issue]***. (I.F. = 4.390)

53. V. Kumar, H. C. Swart, M. Gohain, **Vijay Kumar**, S. Som, B. C. B Bezuindenhoudt, O. M. Ntwaeaborwa, "Influence of ultrasonication times on the tunable colour emission of ZnO nanophosphors for lighting applications", *Ultrasonics Sonochemistry* 21 (2014) 1549-1556. (I.F. = 7.491)

54. V. Kumar, **Vijay Kumar**, S. Som, L. P. Purohit, O. M. Ntwaeaborwa, H. C. Swart, "Role of swift heavy ions irradiation on the emission of boron doped ZnO thin films for near white light application", *Journal of Alloys and Compounds* 594 (2014) 32-38. (I.F. = 5.316)

55. V. Kumar, M. Gohain, **Vijay Kumar**, J. H. Van Tonder, B. C. B. Bezuindenhoudt, O. M. Ntwaeaborwa, H. C. Swart, "Synthesis of yellow emitting bis-pyrimidine based purely organic phosphors", *Journal of Luminescence* 149 (2014) 61-68. (I.F. = 3.599)

56. S. Som, S. Dutta, M. Chodhury, **Vijay Kumar**, V. Kumar, H. C. Swart, S. K. Sharma, "A comparative investigation on ion impact parameters and TL response of Y2O3: Tb 3+ nano phosphor exposed to swift heavy ions for space dosimetry", *Journal of Alloys and Compounds* 589 (2014) 5-18. (I.F. = 5.316)

57. S. Som, S. Dutta, **Vijay Kumar**, V. Kumar, H. C. Swart, S. K. Sharma, "Swift heavy ions irradiation induced modification in structural, optical and luminescence properties of Y2O3:Tb3+ nanophosphor", *Journal of Luminescence* 146 (2014) 162-173. (I.F. = 3.599)

58. V. Kumar, A. K. Bedyal, J. Sharma, **Vijay Kumar**, O. M. Ntwaeaborwa, H. C. Swart, "Spectral and surface investigations of $Ca_2V_2O_7$:Eu^{3+} nanophosphors prepared by citrate-gel combustion method: a potential red-emitting phosphor for near UV light-emitting diodes", *Applied Physics A* 116 (2014) 1785-1792. (I.F. = 2.584)

59. V. Kumar, H. C. Swart, S. Som, **Vijay Kumar**, A. Yousif, A. Pandey, S. K. K. Shaat, O. M. Ntwaeaborwa, "The role of growth ambient on the structural and optical quality of defect free ZnO film for strong ultraviolet emission", *Laser Physics* 24 (2014) 105704 (10pp). (I.F. = 1.366)

60. H. C. Swart, J. J. Terblans, O. M. Ntwaeaborwa, R. E. Kroon, E. Coetsee, I. M. Nagpure, **Vijay Kumar**, V. Kumar, V. Kumar, "Applications of AES, XPS and Tof Sims to phosphor materials", *Surface and Interface Analysis* 46 (2014) 1105-1109. (I.F. = 1.607)

61. K. Sharma, B. S. Kaith, **Vijay Kumar**, S. Kalia, V. Kumar, H. C. Swart, "Water rentention and dyes adsorption behaviour of Gg-cl-poly(acrylic-aniline) based conducting hydrogels", *Geoderma* 232-234 (2014) 45-55. (I.F. = 6.114)

62. K. Sharma, **Vijay Kumar***, B. S. Kaith, V. Kumar, S. Som, S. Kalia, H. C. Swart, "A study of biodegradation behaviour of poly(methacrylic acid/aniline) grafted gum ghatti by a soil burial method", *RSC Advances* 4 (2014) 25637. (I.F. = 3.361)

63. K. Sharma, B. S. Kaith, **Vijay Kumar**, S. Kalia, V. Kumar, H. C. Swart, "Synthesis and biodegradation studies of gamma irradiated electrically conductive hydrogels", *Polymer Degradation and Stability* 107 (2014) 166-177. (I.F. = 5.03)

64. B. S. Kaith, K. Sharma, **Vijay Kumar**, S. Kalia, H. C Swart, "Fabrication and characterization of gum ghatti-polymethacrylic acid based electrically conductive hydrogels", *Synthetic Metals* 187 (2014) 61-67. (I.F. = 3.266)

65. K. Sharma, B. S. Kaith, **Vijay Kumar**, S. Kalia, V. Kumar, S. Som, H. C Swart, "Gum ghatti based novel electrically conductive biomaterials: A study of conductivity and surface morphology", *eXPRESS Polymer Letters* 8 (2014) 267-281. (I.F. = 4.161)

66. **Vijay Kumar***, Y. Ali, K. Sharma, V. Kumar, R. G. Sonkawade, A. S. Dhaliwal, H. C. Swart, "Swift heavy ions induced surface modifications in Ag-polypyrrole composite films synthesized by electrochemical route", *Nuclear Instrument and Methods in Physics Research B* 323 (2014) 7-13. (I.F. = 1.377)

67. B. S. Kaith, K. Sharma, **Vijay Kumar***, V. Kumar, H. C. Swart, S. Kalia, "Effects of swift heavy ion irradiation on the structural and morphological properties of poly(methacrylic acid) cross linked gum ghatti", *Vacuum* 101 (2014) 166-170. ***[Rapid Communication]***. (I.F. = 3.627)

68. Y. Ali, **Vijay Kumar***, R. G. Sonkawade, A. S. Dhaliwal, H. C. Swart, "Gamma radiations induced modifications in Au-polypyrrole nanocomposite: Detailed Raman and X-ray studies", *Vacuum* 99 (2014) 265-271. ***[Highlighted as 22nd most downloaded articles: August-October, 2013]***. (I.F. = 3.627)

69. K. Sharma, B. S. Kaith, **Vijay Kumar***, V. Kumar, S. Kalia, B. K. Kapur, H. C. Swart, "A comparative study of the effect of Ni^{9+} and Au^{9+} ion beams on poly(methacrylic acid) grafted gum ghatti films", *Radiation Physics and Chemistry* 97 (2014) 253-261. (I.F. = 2.858)

70. V. Kumar, N. Singh, **Vijay Kumar**, A. Kapoor, L. P. Purohit, O. M. Ntwaeaborwa, H. C. Swart, "Doped zinc oxide window layers for dye sensitized solar cells", *Journal of Applied Physics* 114 (2013) 134506. (I.F. = 2.546)

71. K. Sharma, B. S. Kaith, **Vijay Kumar***, V. Kumar, S. Som, S. Kalia, H. C. Swart,

"Synthesis and properties of poly(acrylamide-aniline)-grafted gum ghatti based nanospikes", *RSC Advances* 3 (2013) 25830-25839. (I.F. = 3.361)

72. Y. Ali, K. Sharma, **Vijay Kumar***, R. G. Sonkawade, A. S. Dhaliwal, "Polypyrrole microspheroidals decorated with Ag nanostructures: Synthesis and their characterization", *Applied Surface Science* 280 (2013) 950-956. (I.F. = 6.707)

73. Y. Ali, **Vijay Kumar***, R. G. Sonkawade, M. D. Shirsat, A. S. Dhaliwal, "Two step electrochemical synthesis of Au nano particles decorated polyaniline nanofiber", *Vacuum* 93 (2013) 79-83. ***[Highlighted as 2nd most downloaded articles: March-August, 2013]***. (I.F. = 3.627)

74. Y. Ali, **Vijay Kumar**, R. G. Sonkawade, A. S. Dhaliwal, "Effects of swift heavy ion beam irradiation on Au-polyaniline composite films", *Vacuum* 90 (2013) 59-64. (I.F. = 3.627)

75. Y. Ali, **Vijay Kumar**, A. S. Dhaliwal, R. G. Sonkawade, "Surface modification of polyaniline nanofiber using silver nanoparticles to enhance sensing properties", *Advanced Materials Letters* 4(5) (2013) 368-372.

76. **Vijay Kumar***, R. G. Sonkawade, A. S. Dhaliwal, "Gamma irradiation induced chemical and structural modifications in PM-355 polymeric nuclear track detector film", *Nuclear Instrument and Methods in Physics Research B* 290 (2012) 59-63. (I.F. = 1.377)

77. **Vijay Kumar***, Y. Ali, R. G. Sonkawade, A. S. Dhaliwal, "Effect of gamma irradiation on the properties of plastic bottle sheets", *Nuclear Instrument and Methods in Physics Research B* 287 (2012) 10-14. (I.F. = 1.377)

78. **Vijay Kumar***, R. G. Sonkawade, A. S. Dhaliwal, "High electronic excitation induced modifications by 100 MeV O7+ and 150 MeV Ni11+ ions in Makrofol KG polycarbonate", *Nuclear Instrument and Methods in Physics Research B* 287 (2012) 4-9. (I.F. = 1.377)

79. **Vijay Kumar***, R. G. Sonkawade, P. Singh, S. K. Chakarvarti, A. S. Dhaliwal, "Carbon ion induced modifications of Optical, Structural and Chemical Properties in PADC and PET Polymers", *Radiation Physics and Chemistry* 21 (2012) 652-658. (I.F. = 2.858)

80. Y. Ali, **Vijay Kumar***, R. G. Sonkawade, A. S. Dhaliwal, "Fabrication of polyaniline nano fibers by chronopotentiometery", *Advanced Materials Letters* 3 (2012) 388-392

81. **Vijay Kumar***, R. G. Sonkawade, S. K. Chakarvarti, P. Kulriya, K. Kant, N. L. Singh, A. S. Dhaliwal, "Study of optical, structural and chemical properties of neutron irradiated PADC film", *Vacuum* 86 (2011) 275-279. (I.F. = 3.627)

82. S. B. Kadam, K. Datta, P. Ghosh, A. B. Kadam, P. W. Khirade, **Vijay Kumar**, R. G. Sonkawade, A. B. Gambhire, M. K. Lande, M. D. Shirsat, "Improvement of ammonia sensing properties of Poly (pyrrol) – Poly (n-methylpyrrole) composite by ion irradiation", *Applied Physics A* 4 (2010) 1083-1088. (I.F. = 2.584)

83. **Vijay Kumar***, R. G. Sonkawade, A. S. Dhaliwal, "Optimization of CR-39 as neutron dosimeter", *Indian Journal of Pure & Applied Physics* 48 (2010) 466. (I.F. = 0.923)

84. R. G. Sonkawade, **Vijay Kumar**, L. Kumar, S. Annapoorni, S. G. Vaijapurkar, A. S.

Dhaliwal, "Effect of gamma and neutron radiation on polyaniline conducting polymer", *Indian Journal of Pure and Applied Physics* 48 (2010) 453-456. (I.F. = 0.923)

85. **Vijay Kumar***, R. G. Sonkawade, A. S. Dhaliwal, R. Mehra, "Study of neutron Induced modifications on optical band gap of CR-39 polymeric Detector", *Asian Journal of Chemistry* 21 (2009) 279-283

Papers Published in Peer Reviewed Conference Proceedings

86. Ankit Kumar, Manoj Kumar, **Vijay Kumar***, S. S. Sehgal, "Microstructure and Mechanical Properties of Nano Y_2O_3 and ZrO_2 Dispersed Austenite Steel", *Materials Today: Proceedings* 21 (2020) 1793-1799.

87. Deepak Kumar, S. K. Sharma, Shefali Verma, Vishal Sharma, **Vijay Kumar***, "A Short Review on Rare Earth Doped $NaYF_4$ Upconverted Nanomaterials for Solar Cell Applications", *Materials Today: Proceedings* 21 (2020) 1868-1874.

88. Pankaj Sharma, **Vijay Kumar**, Gurpreet Singh Sokhal, Gangacharyulu Dasaroju, Vijaya Kumar Bulasara, "Numerical Study on Performance of Flat Tube with Water Based Copper Oxide Nanofluids", *Materials Today: Proceedings* 21 (2020) 1800-1808.

89. Kashma Sharma, Karanpreet Virk, **Vijay Kumar**, S. K. Sharma, Vishal Sharma, "Preparation and Characterizations Graft Copolymer of Poly(acrylamide-aniline)-Grafted Gum Ghatti", *Materials Today: Proceedings* 21 (2020) 1856-1861.

90. **Vijay Kumar***, Y. Ali, R. G. Sonkawade, A. S. Dhaliwal, "Raman spectral study of electrochemically synthesized Au-polyaniline composite films", *AIP Conference Proceeding* 1512 (2013) 664-665.

91. Y. Ali, **Vijay Kumar**, R. G. Sonkawade, A. S. Dhaliwal, "Raman and AFM study of gamma irradiated plastic bottle sheets", *AIP Conference Proceeding* 1512 (2013) 1210-1211.

92. **Vijay Kumar***, R. G. Sonkawade, Y. Ali, A. S. Dhaliwal, "120 MeV Ni ion beam induced modifications in poly(ethylene terephthalate) used in commercial bottled water" *AIP Conference Proceeding* 1447 (2012) 555.

93. **Vijay Kumar**, Y. Ali, V. Kumar, R. G. Sonkawade, A. S. Dhaliwal, H. C. Swart, "Raman spectral analysis of an organometallic composite film synthesized by electrochemical route", *Proceeding of the Annual Conference of the South African Institute of Physics (SAIP)* 2013, 55-60. ISBN: 978-0-620-62819-8.

94. **Vijay Kumar**, S. Som, S. Dutta, H. C. Swart, "Novel zincate phosphors: A new red emitting phosphor for LED applications", *Proceeding of the Annual Conference of the South African Institute of Physics (SAIP)* 2015, 255-260. ISBN: 978-0-620-70714-5.

95. V. Kumar, H. C. Swart, **Vijay Kumar**, A. Pandey, L. P. Purohit, O. M. Ntwaeaborwa, "Effect of doping on ZnO based transparent conducting oxides and down/up conversion phosphor for solar cell application", *Proceeding of Third Southern African Solar Energy Conference* held at Kruger National Park, South Africa during 11 – 13 May 2015.

Book Chapters

1. Nisar Hussain, Irfan Ayoub, Umer Mushtaq, Rishabh Sehgal, Seemin Rubab, Rakesh Sehgal, Hendrik C Swart, **Vijay Kumar***, Introduction to phosphors and Luminescence, Vikas Dubey,

Neha Dubey, Marta Michalska-Domańska, M Jayasimhadri, S.J. Dhoble (Eds.) Rare Earth Activated Phosphors, Elsevier. (**Submitted**)

2. Irfan Ayoub, Umer Mushtaq, Nisar Hussain, Seemin Rubab, Rakesh Sehgal, Hendrik C Swart, **Vijay Kumar***, Rare Earth Activated Phosphors for LED Applications, Vikas Dubey, Neha Dubey, Marta Michalska-Domańska, M Jayasimhadri, S.J. Dhoble (Eds.) Rare Earth Activated Phosphors, Elsevier. (**Submitted**)

3. Umer Mushtaq, Nisar Hussain, Irfan Ayoub, Seemin Rubab, Rakesh Sehgal, **Vijay Kumar***, Inorganic Nanosystems for Imaging Diagnostics, Md Saquib Hasnain, Amit Kumar Nayak, Tejraj M. Aminabhavi (Eds.) Inorganic Nanosystems, Elsevier. (**Submitted**)

4. Priyanka Mankotia, Kartikey Verma, Kashma Sharma, Vishal Sharma, **Vijay Kumar***, Rakesh Sehgal, Mass Spectroscopy in Biomedical Nanotechnology, Ajeet Kaushik, Sesha S. Srinivasan, Yogendra Kumar Mishra (Eds.) Analytical Techniques for Biomedical Nanotechnology. Institute of Physics (IOP). (**Submitted**)

5. Urba Afnan, Kashma Sharma, Rakesh Sehgal, **Vijay Kumar***, Xanthan gum-based Nanocarriers for Therapeutic delivery. Amit Kumar Nayak, Md Saquib Hasnain, Tejraj M. Aminabhavi (Eds.) Theranostic Nanosystems; (Vol. I: Polymeric nanosystems. Elsevier. (**Submitted**)

6. Priyanka Mankotia, Kashma Sharma, Vishal Sharma, Rakesh Sehgal, **Vijay Kumar***, Inorganic Bionancomposites for Bone Tissue Engineering, Dr. Amit Kumar Nayak, Dr. Md Saquib Hasnain, Dr. Tejraj M. Aminabhavi (Eds.) Theranostic Nanosystems; (Vol. I: Polymeric nanosystems. Elsevier. (**Submitted**)

7. Sonal Choudhary, Kashma Sharma, Vishal Sharma, **Vijay Kumar***, Rakesh Sehgal, Marine Collagen for delivery of therapeutics, Sougata Jana (Eds.) Marine Biomaterials: Drug delivery and therapeutic potential. Springer Nature Singapore. (**In Press**)

8. Jyotendra Nath, Kashma Sharma, Shashikant Kumar, Vishal Sharma, **Vijay Kumar**, Rakesh Sehgal, Electrospun nanofibers for waste water treatment, S. K. Tiwari, K. Sharma, Vijay Kumar (Eds.) Fabrication & Functionalization of Electrospun Nanofibers, Publisher: Springer International Publishing AG Switzerland. (**Accepted**)

9. Jagdeep Singh, Sourbh Thakur, Rakesh Sehgal, A. S. Dhaliwal, **Vijay Kumar**, Surface Engineering of Nanofiber Membranes via Electrospinning embedded Nanoparticles for Wastewater Treatment. S. K. Tiwari, K. Sharma, Vijay Kumar, Vishal Sharma (Eds.) Fabrication & Functionalization of Electrospun Nanofibers, Publisher: Springer International Publishing AG Switzerland (**Accepted**)

10. P. Mankotia, Kashma Sharma, Rakesh Sehgal, Vishal Sharma, **Vijay Kumar***, Polymer and ceramics based hollow nanofibers via electrospinning, S. K. Tiwari, K. Sharma, Vijay Kumar, Vishal Sharma (Eds.) Fabrication & Functionalization of Electrospun Nanofibers, Publisher: Springer International Publishing AG Switzerland. (**Accepted**)

11. Jyotendra Nath, Kashma Sharma, Shashikant Kumar, **Vijay Kumar***, Rakesh Sehgal (2022) Polymer/carbon nanocomposites for biomedical applications. In: Hasnain M.S., Nayak A.K., Alkahtani S. (eds) Polymeric and Natural Composites. Advances in Material Research and Technology. Springer, Cham. https://doi.org/10.1007/978-3-030-70266-3_4.

12. S. Choudhary, K. Sharma, V. Sharma, **Vijay Kumar** (2020) Grafting Polymers. In: Gutiérrez T.J. (eds) Reactive and Functional Polymers Volume Two. Springer, Cham. https://doi.org/10.1007/978-3-030-45135-6_8.

13. Priyanka Mankotia, Kashma Sharma, Vishal Sharma, **Vijay Kumar*** (2020) Interpenetrating Polymer Networks in Sustained Drug-Releasing. In: Nayak A., Hasnain M. (eds) Advanced Biopolymeric Systems for Drug Delivery. Advances in Material Research and Technology. Springer, Cham. https://doi.org/10.1007/978-3-030-46923-8_9.

14. K. Sharma, V. Sharma, **Vijay Kumar**, "Synthesis of hydrogels by modification of natural polysaccharides through radiation cross-linking polymerization for use in drug delivery", *Springer Series on Polymer and Composite Materials – Radiation Effects in Polymeric Materials* (2019). DOI: 10.1007/978-3-030-05770-1.

15. S. Som, S. Dutta, **Vijay Kumar**, H. C. Swart, "Swift Heavy Ion Synthesis and Modifications of Nanophosphors for Dosimetric Application: Effect of Swift Heavy Ion Irradiation", *IGI Global - Emerging Synthesis Techniques for Luminescent Materials*, (2018). DOI: 10.4018/978-1-5225-5170-6.ch001.

16. K. Sharma, **Vijay Kumar**, B. S. Kaith, S. Kalia, H. C. Swart, "Conducting Polymer Hydrogels and Their Applications", *Springer Series on Polymer and Composite Materials – Conducting Polymer Hybrids*, p193-221 (2017). DOI 10.1007/978-3-319-46458-9_7.

Mentoring Experience & Students Mentored

Graduate students

[*Current*: 6 Ph.D. *Alumni*: 01 PhD. + 02 M.Tech. + 01 MSc.]

S. No.	*Student Name*	*Degree*	*Years*	*Status*	*Role*
1.	Deepak Kumar	PhD.	**Awarded** (15/07/2020) Title: Upconversion luminescence investigations of rare-earth doped $NaYF_4$ nanocomposites Supervisor(s): Dr. Rajesh Sharma, Dr. Vijay Kumar		Co-supervisor
2.	Ankit Prajapti	MTech.	2016-2018	**Completed**	Main Supervisor
3.	Pankaj Sharma	MTech.	2016-2018	**Completed**	Co-supervisor
4.	Moon Jyoti Kalia	MSc.	2018-2019	**Completed**	Main Supervisor
5.	Shefali Verma	PhD.	2016-	Ongoing	Co-supervisor
6.	Karanpreet Virk	PhD.	2016-	Ongoing	Co-supervisor
7.	Irfan Ayoub	PhD.	2019-	Ongoing	Main Supervisor
8.	Nisar Hussain	Ph.D.	2019-	Ongoing	Co-supervisor
9.	Sonal Choudhary	Ph.D.	2019-	Ongoing	Co-supervisor
10.	Umer Mushtaq	Ph.D.	2020-	Registered	Main Supervisor

Teaching Experience

Statistical Mechanics: MSc. Course (PSPHY203)

Electricity and Magnetism: BSc. Course (SPT-106)

Applied Physics: BTech. Course (APT-113)

Mathematical Physics: MSc. Physics Course (APT-601)

Optoelectronics: MSc. Physics Course (APB-761)

Synergic Activities

Workshop Coordinator/Convener

- TEQIP III Sponsored One Week Short Term Course (Through Online Mode) on "**Recent Advances in Nanoscience and Nanotechnology (RANN-2020)**" held at National Institute of Technology Srinagar during 24-28 August 2020.
- TEQIP III Sponsored short term course on " **Materials Characterization Techniques**" held at National Institute of Technology Srinagar during 24-28 June 2019.
- DST Sponsored workshop on "**Research Software and Analytics**" held at Chandigarh University during 18-22 December 2017.

Conference Chair/Organizing Secretary

- International Conference on Future of Engineering Systems and Technologies (FEST-2019) held at G.L. Bajaj Institute of Technology, Greater Noida during 21-22 December 2019.
- International Symposium on Functional Materials (ISFM-2018): Energy and Biomedical Applications held at Chandigarh during 13-15 April 2018.

Editorial Activities

- Section Topics Board Editors for 'Polymeric Materials' Materials MDPI Journal (I.F. = 3.057)

  https://www.mdpi.com/journal/materials/topic_editors/polymeric_materials
- Guest Editor for a special issue on "Nano Biocomposites for Future Bioeconomy" to be published in Crystals (MDPI Journal, I.F. = 2.404) https://www.mdpi.com/journal/crystals/special_issues/nano_biocomposites
- Lead Guest Editor of a Virtual Special Issue of VACUUM (Elsevier Journal, I.F. = 2.067), having proceedings of International Symposium on "Functional Materials (ISFM-2018): Energy and Biomedical Applications", held at Chandigarh during 13-15 April 2018.

  https://www.sciencedirect.com/journal/vacuum/special-issue/100HVM2DQS1
- Lead Guest Editor of a Special Issue of Materials Today: Proceedings (Elsevier Journal), having proceedings of International Symposium on "Functional Materials (ISFM-2018): Energy and Biomedical Applications", held at Chandigarh during 13-15 April 2018.

  https://www.sciencedirect.com/journal/materials-today-proceedings/vol/21/part/P4

Statutory Body Membership

- Member of Scientific Review Committee for Initiative for Research and Innovation in Science (IRIS) Programme, a public private partnership of Department of Science and Technology (DST) India, Intel Technology India Pvt. Ltd. and The Indo-US Science and Technology Forum (IUSSTF) (2017-2020).

Academic & Other Activities

- Staff Advisor Mess from 22.12.2020 to till date.
- NIRF Committee member for collecting and uploading date on the portal ranking 2021 (13.07.2020).
- NBA Committee member associated with various activities related to Accreditation of the Institute (14.12.2019).
- Nominated member as a departmental coordinators of MIS-TEQIP III, 20.6.2020 to till date.
- Nodal officer for Ek Bharat Shreshtha Bharat (EBSB) for Teacher Exchange for the year 2020 in the Institute (09.01.2020).
- Departmental GeM Coordinator from 20.12.2019 to till date.
- Nominated as Associate Coordinator for MSc. Physics Programme from 17.7.2019 to till date.
- Faculty-in-Charge, Department Time Table, 16.07.2019-till date.
- Coordinator for organizing of Run up activities titled "Yoga-Cum-Marathon at NIT Srinagar on 31st March & 2nd May, 2019.
- Coordinator for celebration of International Day of Yoga (IDY) on 21st June 2019.
- Faculty-in-Charge, Institute (Central) Time Table, 16.02.2019 to till date.
- Member of Departmental Purchase Committee (DPC), 29.11.2018 to till date.
- Acted as Co-coordinator to conduct the Department of Science & Technology, Government of India, sponsored INSPIRE Science Camp at Chandigarh University during 10-14 May 2016.
- Acted as a Local Coordinator for NASI – Summer School 2016, jointly organized by The National Academy of Sciences, India (NASI) and Chandigarh University, Gharuan during 11th – 15th June 2016.

Conference Committee

1) Member of the Organizing Committee of the "International Conference on Materials Research and Technology (ICMRT-2017) held at Aggarwal College, Ballabgarh, Faridabad, Haryana, India, during July 10-11, 2017.
2) Member of the Organizing Committee of the "International Conference on Materials Science & Technology" held at Delhi University during 01-04 March 2016.
3) Member of the Organizing Committee of the "International Conference on Nano Materials & Nanotechnology (ICNANO-2017)" held at Vinoba Bhave Research Institute, Allahabad during 01-04 March 2017.
4) Member of the Organizing Committee of the "National Conference on Advanced Material Processing and Characterization (NCAMPC-2016)" held at Chandigarh University, Gharuan, Mohali, Punjab, India during 27th May 2016.

Session chair

- 58th and 59th Annual conference of the South African Institute of Physics, South

Africa during July 08-12, 2013 & June 28, 2015 to July 3, 2015, respectively.

- International Conference on Contemporary Issues in Engineering, Agriculture, Applied Sciences and Humanities (EAH-2019) at NIT Srinagar during 22-23 June 2019.

Professional Societies

- Member of International Editorial Board of Oriental Journal of Chemistry. Oriental Journal of Chemistry is abstracted and indexed in almost all reputed agencies of the world, mainly like (ISI) Thomson Reuters, etc.
- Editorial Advisory Board Member of "Journal of Materials NanoScience" (http://www.pubs.iscience.in/journal/index.php/jmns/pages/view/editorialboard).
- Editorial Advisory Board Member of "International Research Journal of India" http://www.irji.in/.
- Life Time Member of the Nuclear Track Society (INTS) of India

Extra-Curricular Activities

- Participated in Debate and Declamation contexts in various events.
- Event Coordinator for the National Level Technical Festival, TechNITi'07 held at Dr. B R Ambedkar National Institute of Technology NIT Jalandhar, Punjab.

Reviewer (Research Proposals/Thesis)

- Assessment of Research Proposal for Science & Engineering Research Board (SERB), (A Statutory body under Department of Science & Technology, Government of INDIA).
- Assessment of Research Proposal for the National Research Foundation (NRF), South Africa.
- External Examiner for evaluating Ph.D. Thesis received from foreign and Indian universities.

Reviewer (Journals)

Nature: Nature Scientific Reports

American Chemical Society: ACS Nano; The Journal of Physical Chemistry C; ACS Applied Materials & Interfaces; Industrial & Engineering Chemistry Research

Royal Society of Chemistry: Physical Chemistry Chemical Physics; Dalton Transactions; RSC Advances; New Journal of Chemistry

Science Direct: Colloids and Surfaces B: Biointerfaces; Carbohydrate Polymers; International Journal of Biological Macromolecules; Vacuum; Radiation Physics and Chemistry; Journal of Alloys and Compounds; Journal of Luminescence; Materials Science and Engineering C; Journal of Magnetism and Magnetic Materials; Chemical Physics Letters; Thin Solid Films; Journal of Molecular Liquids; Physica B; Radiation Measurements; Biotechnology Reports; Journal of Advanced Research; Optics and Laser Technology; Results in Physics.

Springer: Colloid and Polymer Science; Journal of Electronic Materials; Iranian Polymer Journal

American Institute of Physics: Journal of Applied Physics

Wiley: Advances in Polymer Technology

Hindawi: Journal of Nanomaterials; Journal of Spectroscopy

Others: Plos One; ECS Journal of Solid State Science and Technology; Journal of Adhesion Science and Technology; Current Drug Delivery Journal; Journal of Nuclear Physics, Material Sciences, Radiation and Applications; Materials Express; Radiation Effects and Defects in Solids; Journal of Adhesion Science and Technology, Journal of Composite Materials, Journal of Nuclear Energy Science & Power Generation Technology; Advanced Materials Letter.

Invited Presentations, Talks and Conferences/ Workshops/ Seminars Attended

1. Delivered invited talk in one week online Faculty Development program on the topic "Advanced Teaching Tools & Methodology for Outcome Based Education" Organized by Internal Quality Assurance Cell Gulzar Group of Institutions, Ludhiana 18th May - 22nd May 2021 through online mode.
2. Delivered invited talk in one week online Short Term Course on "Advanced Functional Materials (AFMAT-2020)" held during Sept. 28 - Oct. 02, 2020, organized by Department of Physics, Sant Longowal Institute of Engineering and Technology, Longowal.
3. Delivered invited talk in One Week Faculty Development Program on "Current Trends in Physical Sciences" Jointly organized by Dr. A.P.J. Abdul Kalam Technical University Uttar Pradesh, Lucknow & Indian Association of Physics Teachers, Regional Council - 4, UP during July 22-28, 2020 through online mode.
4. Delivered invited talk in one-week online Faculty Development Programme on "Recent Trends in Materials Science and Engineering "organized by Department of Physics, School of Basic Sciences & Research, Sharda University Greater Noida, Uttar Pradesh during May 25-31, 2020.
5. Attended an Indian Summer School on Crystal Growth (ISSCG-2020) organized by SSN Research Centre, SSN Institutions (Autonomous) during 14-23 May 2020.
6. Virtual Conference on "Materials for Energy Harvesting and Catalysis" 1st - 3rd May 2020 via Zoom organized by TIFR Mumbai and IISER Kolkata.
7. Attended a Faculty Development Programme (Through Online Mode) On MOOCs: Instructional Design, Development and Learning Analytics during April 4-9, 2020 Organized by Centre for Academic Leadership and Education Management (CALEM), Panjab University, Chandigarh.
8. Development Program on "Outcome Based Education" held at National Institute of Technology Srinagar during May 18-22, 2019.
9. Faculty Development Program on "PADAGOGY" held at National Institute of Technology Srinagar during April 1-5, 2019. 7th South African Conference on Photonic Materials, 27-31 March 2017 Amanzi Game Lodge, South Africa. Oral Presentation.
10. Delivered invited talk in "One Day National Seminar on Advancement in Science and Technology" at PEC University of Technology Chandigarh during 4th March 2017.
11. 3rd International Conference on Mechanical Properties of Materials (ICMPM 2016)

held at Venice, Italy during December 14-17, 2016. Oral Presentation.

12. "Orientation & Faculty Development Program" at Chandigarh University during 1st - 15th July 2016.

13. "National Conference on Advanced Material Processing and Characterization (NCAMPC-2016)" held at Chandigarh University, Gharuan, Mohali, Punjab, India during 27th May, 2016.

14. Annual Conference of the South African Institute of Physics (SAIP-2015) Boardwalk Convention Centre, Port Elizabeth, Nelson Mandela Bay, South Africa during 29 June-03 July 2015. Oral Presentation.

15. "International Conference on Materials Science & Technology (ICMTech-2016)" held at University of Delhi during 01-04 March, 2016. Oral Presentation.

16. 6th South African Conference on Photonic Materials, 5-7 May 2015 Mabula Game Lodge, South Africa.

17. 7th International Symposium on Macro- and Supramolecular Architectures and Materials, Johannesburg, South Africa during November 23-27, 2014. Oral Presentation.

18. SETCOR International Conference on "Smart Materials and Surfaces SMS-2014" Sheraton Grande Sukhumvit Hotel, Bangkok, Thailand during August 26-28, 2014. Oral Presentation.

19. The National Laser Center "BASIC LASER SAFETY COURSE" University of the Free State, South Africa during 14 April 2014.

20. International Conference on "Structural and Physical Properties of Solids (SPPS-2013)" Department of Applied Physics, Indian School of Mines, Dhanbad, India during 18-20 November, 2013. Oral Presentation.

21. 3rd National Conference on "Advanced Materials and Radiation Physics (AMRP-2011)" Sant Longowal Institute of Engineering & Technology (SLIET), Longowal during 22-24 November, 2013.

22. "58th Annual Conference of the South African Institute of Physics (SAIP-2013) Richards Bay Campus, University of Zululand, South Africa during July 08-12, 2013.

23. 57th DAE- Solid State Physics Symposium (DAE-SSPS 2012)" Indian Institute of Technology (IIT) Bombay during December 03-07, 2012.

24. International Conference on "Radiation Environment-Assessment, Measurement and its Impact (RADENVIRON-2012)" Babasaheb Bhimrao Ambedkar University, Lucknow during April 12-14, 2012. Oral Presentation.

25. National Conference on "Material Science-Applications in Energy & Environment" DAV College Jalandhar (Pb.) during 2-3 March 2012.

26. 56th DAE- Solid State Physics Symposium (DAE-SSPS 2011)" SRM University Kattankulathur, Tamilnadu during December 19-23, 2011.

27. 2nd National Conference on "Advanced Materials and Radiation Physics (AMRP-2011)" Sant Longowal Institute of Engineering and Technology (SLIET), Longowal during 4-5 November, 2011.

28. 17th National Symposium on "Solid State Nuclear Track Detectors and Their Applications (SSNTD-17)" M.S. University, Vadodra during 17-19 Oct., 2011.

29. Three-day conference on "Recent Trends in Material Science" JUIT, Solan during 8-10 October, 2011.

30. 25th International conference on "Nuclear Tracks in Solids (ICNTS- 2011)" Puebla, Mexico during September 4-9, 2011.

31. Workshop on "Electronic and Ionic Materials & Devices (WEIMD – 2011)" Banaras Hindu University, Varanasi during March 25-27, 2011.

32. International Symposium on "Accelerator and Radiation Physics (ISARP -2011)" Saha Institute of Nuclear Physics, Kolkata during February 16-18, 2011.

33. International Workshop on "Neutron Dosimetry and Spectrum Unfolding (NDSU-2010)" organized by Health Physics Division, BARC, Mumbai during March 15-19, 2010.

34. Two days National Workshop on "Nano Technology and Applied Sciences" Haryana College of Technology & Management during 28-29 November, 2009.

35. Two days National Conference on "Accelerator and Low Level Radiation Safety (NCALLRS-2009)" Organized by Inter University accelerator Centre (IUAC), New Delhi during November 18-20, 2009. Oral Presentation.

36. 16th National Symposium on "Solid State Nuclear Track Detectors and Their Applications (SSNTD-16)" Guru Nanak Dev University (GNDU), Amritsar during 9-11 October, 2009.

37. National Conference on "Synthesis and Characterization of Smart Materials (SCSM – 2009)" Bareilly College, Bareilly during 12-14 September, 2009.

38. National Conference on "Recent Advances in Condensed Matter Physics" organized by National Institute of Technology (NIT), Hamirpur during May 23-24, 2009.

39. Two days National Conference on "Advanced Materials and Radiation Physics (AMRP-09)" organized by Department of Physics Sant Longowal Institute of Engineering & Technology during March 9-10, 2009.

40. National Conference on "Recent Advances in Innovative Materials (RAIM-08)" organized by Applied Sciences & Humanities Department of NIT Hamirpur during February 16-17, 2008.

41. Participated in the "Second DAE-BRNS Theme Meeting on EXFOR Compilation of Nuclear Data" at Training School Hostel Anushaktinagar, Mumbai during Oct. 29 – Nov.02, 2007.

42. Workshop on "LASER and its Applications" organized by Dr. B R Ambedkar National Institute of Technology Jalandhar in association with DRDO during September 08, 2007.

43. Five days course on "PHP, MySQL & Apache" conducted by Computer Sc. & Engg. Department, NIT Hamirpur during June 06-10, 2007.

44. Five days course on "Introduction to Computer Applications" sponsored by TEQIP at NIT Hamirpur during June 6-10, 2005.

45. Attended Ph.D. Teaching Program, Advanced Lecture Series on "Energy Loss of MeV Ions in Solids" organized by Inter University Accelerator Centre (IUAC), New Delhi during 7th-25th August, 2009.

Webinar conducted

1. Seminar cum demonstration on Raman Spectrophotometer
   Resource Person: Dr. R. P. Joshi, Founder & CEO, RI Instruments & Innovation India
   Dated: 22nd November 2018
2. Basics of Patent System and Process involved in Patent Filing
   Resource Person: Dr. Indra Dwivedy, Former Chief Scientist & Group Leader- Patents, Innovation Protection Unit, CSIR, New Delhi
   Date: 6th August, 2020
3. Enlightening Nitride based Ultraviolet Photodetectors
   Resource Person: Dr. Govind Gupta, Senior Principal Scientist, Head, Sensor Devices & Metrology, CSIR-NPL, New Delhi
   Date: 21st August, 2020
4. On the Innovation capacity from Advanced Materials and Nanotechnology Materials
   Resource Person: Dr. Mikael Syvajarvi, Linkoping University, Sweden
   Date: 8th September 2020
5. Complementary Metal Oxide Semiconductor Technology: Fabrication and Characterization
   Presenter: Dr. Satinder Kumar Sharma, Associate Professor, School of Computing and Electrical Engineering & Coordinator, Indian Institute of Technology (IIT), Mandi (H.P.)
   Date: 18th September 2020
6. Engineering Happiness: Secrets of Mental Fitness for Successful Life
   Speaker: Dr. Arun Bhardwaj, Founder & Chief Mentor | Happiness Technology
   Date: 22nd September 2020
7. Outcome Based Education
   Prof. S. K. Chakravarti, Former Professor & Head, National Institute of Technology Kurukshetra
   Date: 9th January 2021