Detailed CV

Dr. Vijay Kumar
Assistant Professor
Department of Physics, National Institute of Technology (NIT) Srinagar

Adjunct Faculty
Center for Energy & Environmental Research (CEER), NIT Srinagar

Email: vijaykumar@nitsri.ac.in / vj.physics@gmail.com
Tel: +91 6005 495506

https://nitsri.ac.in/Pages/FacultyList.aspx?nDeptID=q
https://scholar.google.com/citations?user=y33FIowAAAAJ&hl=en

Appointments

12.10.2018 – Till date: **Senior Assistant Professor of Physics**, NIT Srinagar (J&K), India

04.01.2016 – 11.10.2018: **Assistant Professor of Physics**, Chandigarh University, Punjab**,** India

01.04.2013 – 31.12.2015: **Post-Doctoral Fellow**, University of the Free State, South Africa

Education

2008 – 2013: **PhD** in **Physics** (Mat. Science), SLIET Longowal (Punjab), INDIA

2006 – 2008: **MSc** in **Physics**, National Institute of Technology, Jalandhar (Punjab)

2003 – 2005: **BSc** in Non-Medical, Himachal Pradesh University, Shimla (H.P.)

Awards and Honors

2024: Nominated as a member of the Subject Expert Committees (SECs) by the Department of Science and Technology (DST) to evaluate proposals under the Women in Science and Engineering (WISE)–Societal Challenges with Opportunities (SCOPE) Fellowship program of the WISE-KIRAN Division for a term of three years (October 2024 to October 2027).

2023: Included in the list of **Top 2% Researchers** globally database, compiled by Stanford University in Association with Elsevier based on research publications, 2023 & 2024.

2023: Elected as **Joint Secretary** of the Electron Microscope Society of India (EMSI), North Zone.

2023: Inducted as a Member of the **Indian National Young Academy of Sciences (INYAS)** for five years (2023-2027).

2023: Selected as an **Early Career Advisory Board** member of Vacuum (Elsevier, I.F. = 4.0).

2022: Selected for the **SERB International Research Experience (SIRE)** Fellowship for three months, extended by the Science and Engineering Research Board, Department of Science and Technology, Government of India, at the Smart Materials Group, Mads Clausen Institute, University of Southern Denmark (05/11/2022 to 05/02/2023).

2021: Visiting research fellow in the **Department of Physics at the University of the Free State, South Africa** (Host: Prof. Hendrik C Swart) [1st Oct. 2021 to 30th Sep. 2024].

2017 Received the “Teacher with Best Research Contribution” award from Hon'ble Chancellor, Chandigarh University, on Teachers Day (2017).

2017: Received the award for “**IAAM Best Oral Presentation**” (Certificate No. BOPA-2/2017/IAAM) at the 7th South African Conference on Photonic Materials on March 30th, 2017 at Amanzi Game Reserve, Bloemfontein, South Africa.

2017: Nominated as a member of the **Scientific Advisory Committee** under the Initiative for Research and Innovation in Science (IRIS) by DST (2017-2020).

2016: Received a grant under the "**International Travelling Support Scheme**" from SERB/DST, New Delhi, to attend the 3rd International Conference on Mechanical Properties of Materials (ICMPM 2016) in Venice, Italy, from December 14–17, 2016.

2015: Received the "**Young Scientist Award**" under the fast-track scheme offered by the Department of Science and Technology (Ministry of Science and Technology, Govt. of India), New Delhi.

2013: Received a "**Post-Doctoral Fellowship**" from the University of the Free State, South Africa.

2011: Received a grant under the "**International Travelling Support Scheme**" from DST, New Delhi, to attend an international conference on "Nuclear Tracks in Solids (ICNTS-2011)" in Puebla, Mexico, during September 4–9, 2011.

2011: Received the "**Best Poster Presentation Award**" at an International Symposium on Accelerator and Radiation Physics (ISARP -2011) at the Saha Institute of Nuclear Physics (SNIP), Kolkata, on February 16–18, 2011.

Research Grants

2023: NPK-based moisture retention superabsorbent fertilizer: An efficient biodegradable and cost-effective tool for agriculture sustainability, *Role: Principal Investigator*, **Cost: ~5.8 Lacs**, funded by J&K Science Technology & Innovation Council, Department of Science & Technology, Government of Jammu & Kashmir (*Ongoing*).

2023: Development of organic-inorganic nanosorbent for extraction of harmful polycyclic aromatic hydrocarbons from air, soil, and industrial wastewater. *Role: Principal Investigator*, **Cost: ~28.5 Lacs**, funded by Council of Scientific and Industrial Research (CSIR)-Human Resource Development Group – Extra Mural Research-II (*Ongoing*).

2022: Grant under the fund for the improvement of S&T infrastructure (FIST Program 2021), *Role: Principal Investigator*, **Cost: 1.35 Crore**, funded by Department of Science & Technology, New Delhi (*Ongoing*).

2022: A cost-effective and reusable hydrogel-based superabsorbent for water filtration, *Role: Principal Investigator*, **Cost: 14.9 Lacs**, funded by AWaDH- SpINe, IIT Ropar (*Ongoing*).

2017: Joint Center for generating tissue-engineered organs and controlling cell behavior, *Role: Principal Investigator*, **Cost: 49.81 Lacs**, funded by Indo-US Science and Technology Forum (*Completed*).

2016: Plasmon Enhanced Upconversion Luminescence of $NaYF_4$: Er, Yb Nanocomposite Core-Shell for Solar Cell Application, *Role: Principal Investigator*, **Cost: 30 Lacs**, funded by Science and Engineering Research Board (SERB), Department of Science and Technology, New Delhi (*Completed*).

Supervision Activities at Various Levels

Ph.D. Supervision: 12 (Awarded - 04; Submitted – 03; On-going - 05)

S. No.	Student Name	Uni./ Institute	Status	Role
1.	Latief Mohi Ud Din	NIT Srinagar	**Submitted** (11/10/2024)	Sole Supervisor
	Title: *Synthesis and Characterization of Metal-Doped Zirconia Nanocrystals* *Supervisor:* ***Dr. Vijay Kumar***			
2.	Priyanka Mankotia	Panjab University Chandigarh	**Submitted**	Co-supervisor

			(12/08/2024)	
	Title: *Novel Superabsorbent: Application towards Drug Release and Detection* *Supervisor(s): Dr. Vishal Sharma,* ***Dr. Vijay Kumar***			
3.	Nisar Hussain	NIT Srinagar	**Submitted** (14/08/2024)	Co-supervisor
	Title: *Synthesis, Characterization, and Luminescence Properties of Rare Earth-Activated Phosphors for Near UV-Emitting LEDs* *Supervisor(s): Prof. Seemin Rubab,* ***Dr. Vijay Kumar***			
4.	Irfan Ayoub Itoo	NIT Srinagar	**Defended** (14/08/2024)	Sole Supervisor
	Title: *Synthesis, Characterization, and Luminescent Properties of Ternary Metal Oxides-Based Phosphors* *Supervisor(s):* ***Dr. Vijay Kumar***			
5.	Sonal Choudhary	Panjab University Chandigarh	**Defended** (12/08/2024)	Co-supervisor
	Title: *Synthesis and Characterization of Novel Superabsorbent: Application in Removal and Detection of Toxic Organic Dyes and Oil Spill in Water* *Supervisor(s): Dr. Vishal Sharma,* ***Dr. Vijay Kumar***			
6.	Shefali Verma	Chandigarh University	**Defended** (22/04/2023)	Co-supervisor
	Title: *Synthesis and Spectroscopic Studies of Luminescence-Based Materials for UV LED Applications* *Supervisor(s): Dr. Gagan Kumar,* ***Dr. Vijay Kumar****, Dr. Vishal Sharma*			
7.	Deepak Kumar	Chandigarh University	**Awarded** (15/07/2020)	Co-supervisor
	Title: *Upconversion luminescence investigations of rare-earth doped $NaYF_4$ nanocomposites* *Supervisor(s): Dr. Rajesh Sharma,* ***Dr. Vijay Kumar***			
8.	Umer Mushtaq	NIT Srinagar	Ongoing	Main Supervisor
9.	Samiksha Gautam	NIT Srinagar	Ongoing	Main Supervisor
10.	Jyotendra Nath	NIT Srinagar	Ongoing	Co-supervisor
11.	Mohd Iqbal	NIT Srinagar	Ongoing	Main Supervisor
12.	Asma Shahzadi	NIT Srinagar	JRA in JK DST Project	Main Supervisor

MSc./M.Tech. Dissertation Supervision: 11 (Awarded-08; On-going-03)

S. No.	Student Name	Degree	Uni./ Institute	Years	Status	Role
1.	Sagar	MSc.	NIT Srinagar	2022-2024	Ongoing	Main Supervisor
2.	Syed Syed Faiqa Manzoor	MSc.	NIT Srinagar	2022-2024	Ongoing	Main Supervisor
3.	Sabreena Jan	MSc.	NIT Srinagar	2022-2024	Ongoing	Main Supervisor
4.	Nair Abhigith	MSc.	NIT Srinagar	2021-2023	Completed	Main Supervisor

5.	Yogesh Kumawat	MSc.	NIT Srinagar	2021-2023	Completed	Main Supervisor
6.	Asif Maqbool	MSc.	NIT Srinagar	2020-2022	Completed	Main Supervisor
7.	Sameer Ahmad Lone	MSc.	NIT Srinagar	2020-2022	Completed	Main Supervisor
8.	Peerzada Faizan Shafi	MSc.	NIT Srinagar	2020-2022	Completed	Main Supervisor
9.	Moon Jyoti Kalia	MSc.	NIT Srinagar	2018-2019	Completed	Main Supervisor
10.	Ankit Prajapati	M.Tech	Chandigarh University	2016-2018	Completed	Main Supervisor
11.	Pankaj Sharma	M.Tech	Chandigarh University	2016-2018	Completed	Co-supervisor

Patent Filed/ Granted

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; Published on: 10/03/2023; Granted on: 13/03/2024)

ii. **Title: *Sodiumdodecylsulfate hydrogel-based sorbent for waste-water-treatment, and derived soot for immediate oil-spill-remediation and its preparation process***

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

Indian Patent Application No.: 202311058908 (Filed on: 02/09/2023; Published on: 17/11/2023; Granted on: 17/07/2024)

iii. **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*

Indian Patent Application No.: 201911017675 (Filed on: 03/05/2019) (Published on: 03/09/2021)

iv. **Title: *Graphene oxide-based Li-ion/ Li sulfur battery with replaceable electrodes***

Inventors: *R. P. Joshi, H. S Dhami, A. Pandey, P. Kumar, B. P. Joshi, Vijay Kumar, K. Sharma, V. Sharma, S. Sharma, V. Mehta*

Indian Patent Application No.: 201911019351 (Filed on: 15/05/2019) (Published on: 03/09/2021)

Peer-Reviewed Publications Summary

Total publications > 100	**Scholar Google (11.10.2024)**
1 Advanced Science (IF=14.3)	
1 Chemical Engineering Journal (IF=13.3)	**All** / **Since 2019**
1 TrAC Trends in Analytical Chemistry (IF=11.8)	**Citations** 6060 / 3935
1 Critical Reviews in Solid State and Materials Sciences (IF=10.8)	**h-index** 42 / 34
1 Journal of Colloid and Interface Science (IF=9.4)	**i10-index** 96 / 82
1 Nano Materials Science (IF=12.6)	***30 Publications with IF > 5***
1 ACS Applied Materials & Interfaces (IF=8.3)	
1 Acta Materialia (IF=8.3)	***Total Impact Points = 518.2***
1 Chemosphere (IF=8.1)	***Av. I.F. = 4.35***
2 Sensors and Actuators B: Chemical (IF=8.0)	
1 Materials & Design (IF=7.6)	
2 Ultrasonics Sonochemistry (IF=8.7)	
2 International Journal of Biological Macromolecules (IF=7.7)	
Materials Today Bio (IF=8.7)	
1 Environmental Technology & Innovation (IF=6.7)	
2 Applied Surface Science (IF=6.3)	
Books Edited	**14** *(+04 under progress)*
Book Chapters Published/Accepted	**34**

**Impact Factor 2022 (ISI Web of Science)*

List of Publications (*Lead and Corresponding Author)**

1. Irfan Ayoub, Umer Mushtaq, M.Y.A. Yagoub, Sudipta Som, Hendrik C. Swart, **Vijay Kumar***, Structural, optical, and color-tunable luminescence of Dy^{3+}-doped $Ca_3Ga_4O_9$ phosphors for white-light emitting diode applications, *Materials Science and Engineering: B* 310 (2023) 117724 (I.F. = 3.9)

2. Jyotendra Nath, Shashikant Kumar, **Vijay Kumar***, Fabrication and characterization of Fenugreek-g-poly(acrylic acid) hydrogel for effective adsorption of crystal violet dye, *Adsorption* (Accepted) (I.F. = 3.0)

3. Sonal Choudhary, Kashma Sharma, **Vijay Kumar***, Vishal Sharma, Efficient Oil Spill Cleanup from water: Investigating the Effectiveness of a Sustainable Anti-Swelling Hydrogel for Rapid Water Repellency and Oil Absorption, *Chemosphere* 364 (2024) 143123 (I.F. = 8.1)

4. Sonal Choudhary, Kashma Sharma, **Vijay Kumar***, Vishal Sharma, RSM-CCD directed modeling and optimization of a low-cost adsorbent based on sodium dodecyl sulfate for the selective removal of malachite green and methylene blue dyes: Kinetics, isotherm, and thermodynamics analysis, *Microchemical Journal* 205 (2024) 111158 (I.F. = 4.8)

5. Shabnum Saleem, Kashma Sharma, Amit Kumar Sharma, Vishal Sharma, Vaneet Kumar, **Vijay Kumar***, Development of Biodegradable Gum Guggul-based Hydrogel as an Efficient Moisture-Retaining Agent for Agricultural Applications, *Adsorption* 30 (2024) 1749-1769 (I.F. = 3.0)

6. Umer Mushtaq, Irfan Ayoub, MYA Yagoub, NJ Shivaramu, E. Coetsee, H C Swart, **Vijay Kumar***,* Effect of Li^+ monovalent ion on the structural and optical properties of Dy^{3+} doped

$ZnGa_2O_4$ phosphor, *Applied Physics A* 130 (2024) 494 (I.F. = 2.5)

7. Irfan Ayoub, Umer Mushtaq, MYA Yagoub, R E Kroon, Yogendra Kumar Mishra, H C Swart, **Vijay Kumar***, Upconversion luminescence and temperature sensing in novel $CaLa_2ZnO_5:Ho^{3+}/Yb^{3+}$ phosphors, *Inorganic Chemistry Communications* 166 (2024) 112681 (I.F. = 4.4)

8. Irfan Ayoub, **Vijay Kumar***, Ho^{3+}-doped $BaGd_2ZnO_5$ green-emitting phosphor for solid-state lighting: Synthesis, characterization and photoluminescence properties, *Luminescence* 39 (2024) e4705 (I.F. = 3.2)

9. Latief Mohi Ud Din, **Vijay Kumar***, d^0 Ferromagnetic Display of Zirconia Nanocrystallites and the Impact of Gold Doping on their Structural, Optical, and Magnetic Properties, *Modern Physics Letters B* (2024) 24440002 (I.F. = 1.8)

10. Irfan Ayoub, Umer Mushtaq, MYA Yagoub, Sudipta Som, E. Coetsee, Yogendra Kumar Mishra, H C Swart, **Vijay Kumar***, Structural, Optical and Photoluminescence Properties of $BaLa_2ZnO_5$: Eu^{3+} phosphor: A Prospective Red-Emitting Phosphor for LED Applications, *Optical Materials* 148 (2024) 114797 (I.F. = 3.8)

11. Umer Mushtaq, Irfan Ayoub, **Vijay Kumar***, Vishal Sharma, Hendrik C Swart, Elham Chamanehpour, Horst-Günter Rubahn, Yogendra Kumar Mishra, Persistent luminescent nanophosphors for applications in cancer theranostics, biomedical, imaging and security, *Materials Today Bio* 23 (2023) 100860 (I.F. = 8.7)

12. Sajeela Awasthi, Srikanta Moharana, Vaneet Kumar, Nannan Wang, Elham Chmanehpour, Anupam Deep Sharma, Santosh K. Tiwari, **Vijay Kumar***, Yogendra Kumar Mishra, Progress in Doping and Crystal Deformation for Polyanions Cathode Based Lithium-Ion Batteries, *Nano Materials Science* (Accepted) (I.F. = 12.6)

13. Umer Mushtaq **Vijay Kumar***, Effect of Eu^{3+} doping on the structural, optical, and photoluminescent properties of $LiGa_5O_8$ phosphor, *New Journal of Chemistry* 47 (2023) 21553-21567 (I.F. = 2.7)

14. Umer Mushtaq **Vijay Kumar***, Host-Sensitized Colour-Tunable Emission and Judd-Ofelt Analysis for Dy^{3+}-doped $ZnGa_2O_4$ Phosphor through Exciton-Mediated Energy Transfer, *Optical Materials* 146 (2023) 114554 (I.F. = 3.8)

15. Latief Mohi Ud Din, Umer Mushtaq, Irfan Ayoub, Vishal Sharma, H.C. Swart, **Vijay Kumar***, Luminescence properties of ZrO_2: Dy^{3+} phosphor for solid-state lighting applications, *Physica B: Condensed Matter* 671 (2023) 415459 (I.F. = 2.8)

16. Nisar Hussain, Irfan Ayoub, Sudipta Som, Vishal Sharma, Seemin Rubab, Hendrik C. Swart, **Vijay Kumar***, Synthesis and photoluminescence properties of novel orange-emitting $Ba_2Gd_8(SiO_4)_6O_2$: Sm^{3+} phosphors for white LED applications, *Physica B: Condensed Matter* 670 (2023) 415385 (I.F. = 2.8)

17. Nisar Hussain, Seemin Rubab, **Vijay Kumar***, Structure, photoluminescence, Judd-Ofelt analysis, and thermal stability studies of Eu^{3+}-doped $Ba_2Tb_8(SiO_4)_6O_2$ red phosphor with high color purity, *Materials Science and Engineering: B* 298 (2023) 116878 (I.F. = 3.9)

18. Irfan Ayoub, **Vijay Kumar***, Synthesis, photoluminescence, Judd-Ofelt analysis, and thermal stability studies of Dy^{3+}-doped $BaLa_2ZnO_5$ phosphors for solid-state lighting applications, *RSC Advances* 13 (2023) 13423-13437 (I.F. = 3.9)

19. Umer Mushtaq, Irfan Ayoub, MYA Yagoub, Sudipta Som, H C Swart, **Vijay Kumar***, Structural and photoluminescent properties of Gd3+ doped Barium Aluminate phosphor, *Physica B: Condensed Matter* 669 (2023) 415296 (I.F. = 2.8)

20. Irfan Ayoub, Umer Mushtaq, MYA Yagoub, Sudipta Som, H C Swart, **Vijay Kumar***,

Structural and Optical Characteristics of Green-Emitting $BaGd_2ZnO_5:Tb^{3+}$ Phosphor for LED Applications, *Physica B: Condensed Matter* 669 (2023) 415299 (I.F. = 2.8)

21. Nisar Hussain, Seemin Rubab, **Vijay Kumar***, Spectroscopic characterizations and investigation of Judd-Ofelt intensity parameters of Dy^{3+}-doped $Ba_2La_8(SiO_4)_6O_2$ near white emitting phosphor, *Ceramics International* 49 (2023) 15341-15348 (I.F. = 5.1)

22. Shefali Verma, Irfan Ayoub, Sudipta Som, Vishal Sharma, Gagan Kumar Bhargava, Hendrik C Swart, **Vijay Kumar***, Spectroscopic characterization of Eu^{3+}-doped $KSrYSi_2O_7$ phosphor for NUV LEDs: Estimation of the Judd Ofelt parameter, *Optical Materials* 136 (2023) 113416 (I.F. = 3.8)

23. Samiksha Gautam, **Vijay Kumar***, Synthesis and Characterizations of a Novel Hydrogel for Adsorptive Removal of Crystal Violet Dye from Wastewater, *Modern Physics Letters B* (Accepted) (I.F. = 1.8)

24. Priyanka Mankotia, Kashma Sharma, Yogendra Kumar Mishra, Vishal Sharma, **Vijay Kumar***, CCD-optimized Moringa oleifera-based hydrogel for the targeted and controlled release of the anti-cancer drug Raloxifene: evaluation of hemocompatible, cytotoxic and antioxidant properties, *New Journal of Chemistry* 48 (2024) 12516 (I.F. = 2.7).

25. Yogesh Kumar Kumawat, Abhigith Nair, Sonal Choudhary, Jyotendra Nath, Kashma Sharma, Tanveer Rasool, Vishal Sharma, Yogendra Kumar Mishra, **Vijay Kumar***, Novel hydrogel based on natural hybrid backbones: optimized synthesis and effective adsorbent for the removal of malachite green dye from an aqueous solution, *Journal of Polymer Research* 31 (2024) 128 (I.F. = 2.6)

26. Kibrya Farooq, **Vijay Kumar**, Vishal Sharma, Madhulika Bhagat, Vaneet Kumar, Kashma Sharma, Synthesis, Optimization, and Multifunctional Evaluation of Amla-Based Novel Biodegradable Hydrogel, *Polymer Bulletin* 81 (2024) 10681–10705 (I.F. = 3.1).

27. Priyanka Mankotia, Kashma Sharma, Vishal Sharma, Yogendra Kumar Mishra, **Vijay Kumar***, Development of collagen and nano-hydroxyapatite-based novel self-healing cartilage, *Frontiers of Materials Science* (Accepted). (I.F. = 2.5).

28. Jyotendra Nath, Shashikant Kumar, **Vijay Kumar***, Response surface methodology-based modeling and optimization of fenugreek gum-based hydrogel for efficient removal of malachite green dye, *Journal of Molecular Structure* 1293 (2023) 136234 (I.F. = 4.0)

29. Abhigith Nair, Yogesh Kumar Kumawat, Sonal Choudhary, Jyotendra Nath, Kashma Sharma, Tanveer Rasool, Vishal Sharma, **Vijay Kumar***, Malachite Green Dye Adsorption from Wastewater Using Pine Gum-Based Hydrogel: Kinetic and Thermodynamic Studies, *Journal of Molecular Structure* 1295 (2023) 136671 (I.F. = 4.0)

30. Priyanka Mankotia, Kashma Sharma, Vishal Sharma, Yogendra Kumar Mishra, **Vijay Kumar***, Curcumin-loaded Butea monosperma gum-based hydrogel: A new excipient for controlled drug delivery and anti-bacterial applications, *International Journal of Biological Macromolecules* 242 (2023) 124703 (I.F. = 7.7)

31. Sonal Choudhary, Kashma Sharma, Vishal Sharma, **Vijay Kumar***, Performance Evaluation of Gum Gellan-Based Hydrogel as a Novel Adsorbent for the Removal of Cationic Dyes: Linear Regression Models, *ACS Applied Materials & Interfaces* 15 (2023) 5942-5953 (I.F. = 8.3)

32. Sonal Choudhary, Kashma Sharma, Pawan Kumar Mishra, **Vijay Kumar***, Vishal Sharma, Development and characterization of biodegradable Agarose/Gum neem/nanohydroxyapatite/polyoxyethylene sorbitan monooleate based edible bio-film for applications towards a circular economy, *Environmental Technology & Innovation* 29 (2023) 103023 (I.F. = 6.7)

33. Irfan Ayoub, Umer Mushtaq, M.Y.A. Yagoub, Sudipta Som, Hendrik C Swart, **Vijay Kumar***, Structural, Optical, and Color-Tunable Luminescence of Dy^{3+}-Doped $Ca_3Ga_4O_9$ Phosphors for White-Light Emitting Diode Applications, *Materials Science and Engineering: B* 310 (2024) 117724 (I.F. = 3.9)

34. Latief Mohi Ud Din, **Vijay Kumar***, Oxygen-deficient Low band gap black zirconia nanoparticle synthesis and tailoring its band gap/photoluminescence via silver doping, *Physica B: Condensed Matter* 652 (2023) 414626 (I.F. = 2.8)

35. Santosh K. Tiwari, Raunak Pandey, Nannan Wang, **Vijay Kumar**, Olusegun J. Sunday, Michał Bystrzejewski, Yanqiu Zhu, Yogendra Kumar Mishra, Progress in Diamanes and Diamanoids Nanosystems for Emerging Technologies, *Advanced Science* 9 (2022) 2105770 (I.F. = 14.3)

36. Sonal Choudhary, Kashma Sharma, Manpreet S. Bhatti, Vishal Sharma, **Vijay Kumar***, DOE-based synthesis of Gellan gum-acrylic acid-based biodegradable hydrogels: Screening of significant process variable and in situ field studies, *RSC Advances* 12 (2022) 4780-4794 (I.F. = 3.9)

37. Karanpreet Virk, Kashma Sharma, Shikha Kapil, Vinod Kumar, Vishal Sharma, Sadanand Pandey, **Vijay Kumar***, Synthesis of gum acacia-silver nanoparticles based hydrogel composites and their comparative anti-bacterial activity, *Journal of Polymer Research* 29 (2022) 118 (I.F. = 2.6)

38. Irfan Ayoub, **Vijay Kumar***, Rishabh Sehgal, Vishal Sharma, Rakesh Sehgal, Reza Abolhassani, Hendrik C Swart, Yogendra Kumar Mishra, Advances in ZnO: Manipulation of Defects for Enhancing their Technological Potentials, *Nanotechnology Reviews* 11 (2022) 575-619 (I.F. = 6.1)

39. Raunak Pandey, Prabhav Thapa, **Vijay Kumar**, Yanqiu Zhu, Nannan Wang, Michał, Bystrzejewski, Santosh K. Tiwari, Updates in Phase Change Materials for Thermoelectric Devices: Status and Challenges, *Materialia* 21 (2022) 101357 (I.F. = 3.0)

40. 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. = 11.8)

41. Archana Gupta, Vishal Sharma, Kashma Sharma**, Vijay Kumar**, Sonal Choudhary, Priyanka Mankotia, Brajesh Kumar, Harshita Mishra, Amitava Moulick, Adam Ekielski, and Pawan Kumar Mishra, A Review of Adsorbents for Heavy Metal Decontamination: Growing Approach to Wastewater Treatment, *Materials* 14 (2021) 4702. (I.F. = 3.1)

42. 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. = 3.7)

43. 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. = 4.4)

44. 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. = 4.0)

45. 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. = 3.1).

46. 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. = 3.8)

47. 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. = 7.7)

48. 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. = 2.2)

49. 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. = 5.1)

50. 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. = 2.8)

51. 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. = 3.8)

52. 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. = 2.8)

53. 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. = 3.8)

54. 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. = 3.8)

55. 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. = 1.7)

56. 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. = 3.8)

57. 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. = 3.8)

58. 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. = 2.8)

59. 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. = 1.0)

60. 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. = 3.9)

61. 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. = 3.8)

62. 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. = 2.1)

63. 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. = 8.3)

64. 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. = 2.9)

65. 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. = 3.8)

66. 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. = 3.8)

67. **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. = 3.9)

68. **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. = 2.8)

69. 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. = 8.7)

70. 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. = 10.8)

71. **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. = 7.6)

72. 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. = 3.2)

73. 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. = 3.8)

74. 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. = 4.0)

75. 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. = 2.8)

76. 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. = 1.4)

77. 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. = 6.3)

78. 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. = 8.0)

79. 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. = 2.7)

80. 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. = 5.8)

81. 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. = 3.8)

82. 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. = 2.7)

83. 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. = 6.3)

84. B. S. Kaith, R. Sharma, K. Sharma, S. Choudhary, **Vijay Kumar***, S. P. Lochab, “Effects of O^{7+} and Ni^{9+} swift heavy ions on polyacrylamide grafted Gum acacia thin film and sorption of methylene blue”, *Vacuum* 111 (2015) 73-82. (I.F. = 3.8)

85. 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. = 2.2)

86. 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. = 2.6)

87. 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. = 6.3)

88. 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. = 2.9)

89. 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. = 9.4)

90. A. Pandey, S. Som, **Vijay Kumar**, V. Kumar, V. K. Rai, H. C. Swart, "Enhanced upconversion and temperature sensing study of Er^{3+}-Yb^{3+} codoped tungsten-tellurite glass", *Sensors and Actuators B: Chemical* 202 (2014) 1305-1312. (I.F. = 8.0)

91. V. Kumar, S. Som, **Vijay Kumar**, V. Kumar, O. M. Ntwaeaborwa, E. Coetsee, H. C. Swart, "Tunable and white light emission from ZnO: Tb^{3+} nanophosphors for solid state lightening application", *Chemical Engineering Journal* 255 (2014) 541-552. (I.F. = 13.3)

92. 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 $Y_2OS:Eu^{3+}/Dy^{3+}$ 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. = 3.5)

93. 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. = 8.7)

94. 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. = 5.8)

95. 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. = 3.3)

96. 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 Y_2O_3: Tb^{3+} nano phosphor exposed to swift heavy ions for space dosimetry", *Journal of Alloys and Compounds* 589 (2014) 5-18. (I.F. = 5.8)

97. 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. = 3.3)

98. 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. = 2.5)

99. 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. = 1.2)

100. 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. = 3.3)

101. 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. = 5.6)

102. 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. = 3.9)

103. 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. = 6.3)

104. 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. = 4.0)

105. 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. = 3.3)

106. **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. = 1.4)

107. 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. = 3.8)

108. 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. = 3.8)

109. 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. = 2.8)

110. 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. = 2.6)

111. 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. = 3.9)

112. 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. = 6.3)

113. 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. = 3.8)

114. 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. = 3.8)

115. **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. = 1.4)

116. **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. = 1.4)

117. **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. = 1.4)

118. **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. = 2.8)

119. **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. = 3.8)

120. 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. = 2.5)

Conference Proceedings

1. **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. = 0.87)

2. 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. = 0.87)

3. **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

4. 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.

5. 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.

6. 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.

7. 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.

8. **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.

9. 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.

10. **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.

11. **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.

12. **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.

13. 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.

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). https://link.springer.com/book/10.1007/978-3-319-46458-9

[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). https://onlinelibrary.wiley.com/doi/book/10.1002/9781119241966

[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). https://doi.org/10.1007/978-3-030-05770-1

[4]. Editors: V. Dubey, S. Som, **Vijay Kumar**, Luminescent materials in display and biomedical applications, *Publisher: CRC Press Taylor & Francis Group,* ISBN: 9780367112127 (2020). https://doi.org/10.1201/9780429025334

[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). https://doi.org/10.1007/978-3-030-79979-3

[6]. Editors: **Vijay Kumar**, Kashma Sharma, Rakesh Sehgal, Susheel Kalia, Conjugated Polymers for Next-Generation Applications: Synthesis, Properties and Optoelectrochemical Devices Volume 1. *Publisher: Elsevier*, ISBN: 9780128234426 (2022). https://doi.org/10.1016/C2020-0-00254-9

[7]. Editors: **Vijay Kumar**, Kashma Sharma, Rakesh Sehgal, Susheel Kalia, Conjugated Polymers for Next-Generation Applications: Energy Storage Devices Volume 2. *Publisher: Elsevier*, ISBN: 9780128240946 (2022). https://doi.org/10.1016/C2020-0-01559-8

[8]. Editors: **Vijay Kumar**, Sudipta Som, Vishal Sharma, Hendrik C Swart, Metal Oxide

Defects: Fundamentals, Design, Development and Applications. *Publisher: Elsevier*, Paperback ISBN: 9780323855884 (2022). https://www.sciencedirect.com/book/9780323855884/metal-oxide-defects

[9]. Editors: Santosh Kr Tiwari, **Vijay Kumar**, Sabu Thomas, Nanoparticles Reinforced Metal Nanocomposites - Mechanical Performance and Durability, *Publisher: Springer Nature Singapore*, ISBN: 978-981-19-9729-7 (2023). https://doi.org/10.1007/978-981-19-9729-7

[10]. Editors: Santosh K Tiwari, Michał Bystrzejewski, **Vijay Kumar**, Biomass-Based Functional Carbon Nanostructures for Supercapacitors, *Publisher: Springer Nature Singapore*, ISBN: 978-981-99-0995-7 (2023). https://link.springer.com/book/10.1007/978-981-99-0996-4

[11]. Editors: **Vijay Kumar**, Vishal Sharma, Hendrik C Swart, Subrata Das, Metal Oxide for Next Generation Optoelectronic, Photonic and Photovoltaic Applications, *Publisher: Elsevier,* ISBN: 9780323991438 (2023).

[12]. Editors: **Vijay Kumar**, Vishal Sharma, Hendrik C Swart, Advanced Materials for Solid State Lighting. Publisher, *Springer Nature Singapore,* ISBN: 978-981-99-4145-2 (2023). https://link.springer.com/book/9789819941445

[13]. Editors: **Vijay Kumar**, Irfan Ayoub, Hendrik C Swart, Rakesh Sehgal, Upconversion Nanoparticles (UCNPs) for Functional Applications, *Publisher: Springer Nature Singapore*, ISBN: 978-981-99-3913-8 (2023). https://link.springer.com/book/9789819939121

[14]. Editors: **Vijay Kumar**, Irfan Ayoub, Vishal Sharma, Hendrik C Swart, Optical Properties of Metal Oxide Nanostructures, *Publisher: Springer Nature Singapore,* ISBN: 978-981-99-5640-1 (2023). https://link.springer.com/book/9789819956395

[15]. Editors: Kashma Sharma, Santosh Kumar Tiwari, **Vijay Kumar**, Susheel Kalia, Novel Bio-nanocomposites for Emerging Biomedical Technologies, *Publisher: Springer International Publishing AG Switzerland*, ISBN: 978-3-031-69654-1 (2024). https://link.springer.com/book/9783031696534

[16]. Editor(s): **Vijay Kumar**, Irfan Ayoub, Yogendra Kumar Mishra, Hendrik C Swart, Persistent Luminescence: Fundamentals, Mechanisms and Applications, *Publisher: Springer Nature Singapore,* ISBN: 978-981-97-4943-0 (2024). https://link.springer.com/book/9789819749423

[17]. Editor(s): **Vijay Kumar**, Yogendra Kumar Mishra, Soft Materials for Functional Applications, *Publisher: Springer Nature Singapore,* ISBN: 978-981-97-9468-3 (2024). https://link.springer.com/book/9789819794676

Book Chapters

[1]. Sharma K., **Kumar V.**, Kaith B.S., Kalia S., Swart H.C. (2017) Conducting Polymer Hydrogels and Their Applications. In: Kumar V., Kalia S., Swart H. (eds) Conducting Polymer Hybrids. Springer Series on Polymer and Composite Materials. Springer, Cham. https://doi.org/10.1007/978-3-319-46458-9_7

[2]. Som S., Dutta S., **Kumar, V.**, Swart H.C. (2018). Swift Heavy Ion Synthesis and Modifications of nanophosphors for Dosimetric Application: Effect of Swift Heavy Ion Irradiation. In R. Tiwari, V. Dubey, & S. Dhoble (Ed.), Emerging Synthesis Techniques for Luminescent Materials (pp. 1-25). IGI Global. https://www.igi-global.com/gateway/chapter/204642

[3]. Sharma K., Sharma V., **Kumar V.** (2019) Synthesis of Hydrogels by Modification of Natural Polysaccharides Through Radiation Cross-Linking Polymerization for Use in Drug Delivery. In: Kumar V., Chaudhary B., Sharma V., Verma K. (eds) Radiation Effects in Polymeric Materials. Springer Series on Polymer and Composite Materials. Springer, Cham. https://doi.org/10.1007/978-3-030-05770-1_8

[4]. Choudhary S., Sharma K., Sharma V., & **Kumar V.** (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

[5]. Mankotia P., Sharma K., Sharma V., **Kumar V.** (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

[6]. Nath J., Sharma K., Kumar S., Sharma V., **Kumar V.**, Sehgal R. (2021) Electrospun Nanofibers for Wastewater Treatment. In: Tiwari S.K., Sharma K., Sharma V., Kumar V. (eds) Electrospun Nanofibers. Springer Series on Polymer and Composite Materials. Springer, Cham. https://doi.org/10.1007/978-3-030-79979-3_4

[7]. Singh J., Thakur S., Sehgal R., Dhaliwal A.S., **Kumar V.** (2021) Surface Engineering of Nanofiber Membranes via Electrospinning-Embedded Nanoparticles for Wastewater Treatment. In: Tiwari S.K., Sharma K., Sharma V., Kumar V. (eds) Electrospun Nanofibers. Springer Series on Polymer and Composite Materials. Springer, Cham. https://doi.org/10.1007/978-3-030-79979-3_10

[8]. Mankotia P., Sharma K., Sharma V., Sehgal R., **Kumar V.** (2021) Polymer and Ceramic-Based Hollow Nanofibers via Electrospinning. In: Tiwari S.K., Sharma K., Sharma V., Kumar V. (eds) Electrospun Nanofibers. Springer Series on Polymer and Composite Materials. Springer, Cham. https://doi.org/10.1007/978-3-030-79979-3_9

[9]. Nath J., Sharma K., Kumar S., **Kumar V.**, Sehgal R. (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

[10]. Choudhary, S., Sharma, K., Sharma, V., **Kumar, V.**, Sehgal, R. (2022). Marine Collagen for Delivery of Therapeutics. In: Jana, S., Jana, S. (eds) Marine Biomaterials. Springer, Singapore. https://doi.org/10.1007/978-981-16-5374-2_4

[11]. Nisar Hussain, Irfan Ayoub, Umer Mushtaq, Rishabh Sehgal, Seemin Rubab, Rakesh Sehgal, Hendrik C. Swart, **Vijay Kumar***, 1 - Introduction to phosphors and luminescence, Editor(s): Vikas Dubey, Neha Dubey, Marta Michalska Domańska, M. Jayasimhadri, Sanjay J. Dhoble, Rare-Earth-activated Phosphors, Elsevier, 2022, Pages 3-41, ISBN 9780323898560. https://doi.org/10.1016/B978-0-323-89856-0.00008-0

[12]. Irfan Ayoub, Umer Mushtaq, Nisar Hussain, Seemin Rubab, Rakesh Sehgal, Hendrik C. Swart, **Vijay Kumar***, 7 - Rare-earth-activated phosphors for LED applications, Editor(s): Vikas Dubey, Neha Dubey, Marta Michalska Domańska, M. Jayasimhadri, Sanjay J. Dhoble, Rare-Earth-activated Phosphors, Elsevier, 2022, Pages 179-214, ISBN 9780323898560. https://doi.org/10.1016/B978-0-323-89856-0.00009-2

[13]. Jagdeep Singh, A.S. Dhaliwal, Kashma Sharma, Rakesh Sehgal, **Vijay Kumar**, 14 - Conductive polymer-based composite photocatalysts for environment and energy applications, Editor(s): Vijay Kumar, Kashma Sharma, Rakesh Sehgal, Susheel Kalia, In Woodhead Publishing Series in Electronic and Optical Materials, Conjugated Polymers for Next-Generation Applications, Woodhead Publishing, Volume 1, 2022, Pages 505-538, ISBN 9780128234426. https://doi.org/10.1016/B978-0-12-823442-6.00011-8

[14]. Irfan Ayoub, Rishabh Sehgal, **Vijay Kumar***, Rakesh Sehgal, Hendrik C Swart, Nanotechnology enabled next-generation LED lights, Anh Nguyen, T., & Gupta, R.K. (Eds.). (2022). Nanotechnology for Light Pollution Reduction (1st ed.). CRC Press. eBook ISBN: 9781003185109. https://www.taylorfrancis.com/chapters/edit/10.1201/9781003185109-14/

[15]. Kumawat, Y.K., Sehgal, R., Ayoub, I., Sehgal, R., **Kumar, V.** (2023). Recent Progress in the Development of Metallic Composite for Advanced Technologies. In: Tiwari, S.K., Kumar, V., Thomas, S. (eds) Nanoparticles Reinforced Metal Nanocomposites. Springer, Singapore. ISBN: 978-981-19-9729-7. https://doi.org/10.1007/978-981-19-

9729-7_3

[16]. Kumar, S. Kumar, B., Sehgal, R., Wani, M.F., Kumar, D., Sharma, M.D., Singh, V., Sehgal, R., **Kumar V.** (2023). Advantages and Disadvantages of Metal Nanoparticles. In: Tiwari, S.K., Kumar, V., Thomas, S. (eds) Nanoparticles Reinforced Metal Nanocomposites. Springer, Singapore. ISBN: 978-981-19-9729-7. https://doi.org/10.1007/978-981-19-9729-7_7

[17]. Umer Mushtaq, Nisar Hussain, Irfan Ayoub, Seemin Rubab, Rakesh Sehgal, **Vijay Kumar**, Chapter 19 - Inorganic nanosystems for imaging diagnostics, Editor(s): Md Saquib Hasnain, Amit Kumar Nayak, Tejraj M. Aminabhavi, Inorganic Nanosystems, Academic Press, 2023, Pages 549-588, ISBN 9780323857840, https://doi.org/10.1016/B978-0-323-85784-0.00002-9

[18]. Urba Afnan, Kashma Sharma, Rakesh Sehgal, **Vijay Kumar**, Chapter 12 - Xanthan gum-based nanocarriers for therapeutic delivery, Editor(s): Md Saquib Hasnain, Amit Kumar Nayak, Tejraj M. Aminabhavi, Polymeric Nanosystems, Academic Press, 2023, Pages 333-365, ISBN 9780323856560, https://doi.org/10.1016/B978-0-323-85656-0.00008-5

[19]. Priyanka Mankotia, Kashma Sharma, Vishal Sharma, Rakesh Sehgal, **Vijay Kumar**, Chapter 20 - Inorganic bionanocomposites for bone tissue engineering, Editor(s): Md Saquib Hasnain, Amit Kumar Nayak, Tejraj M. Aminabhavi, Inorganic Nanosystems, Academic Press, 2023, Pages 589-619, ISBN 9780323857840, https://doi.org/10.1016/B978-0-323-85784-0.00013-3

[20]. Irfan Ayoub, Rishabh Sehgal, Hendrik C. Swart, Rakesh Sehgal, Vishal Sharma, **Vijay Kumar**, 12 - Viable defect engineering with templates into metal oxides, Editor(s): Vijay Kumar, Sudipta Som, Vishal Sharma, Hendrik C. Swart, In Metal Oxides, Metal Oxide Defects, Elsevier, 2023, Pages 355-385, ISBN 9780323855884, https://doi.org/10.1016/B978-0-323-85588-4.00011-8

[21]. Jyotendra Nath, Virender Pratap Singh, Rishabh Sehgal, Shashikant Kumar, **Vijay Kumar**, Rakesh Sehgal, 14 - Utilization of magnetic nanoferrite-based photocatalysts for elimination of organic pollutants from wastewater, Editor(s): Susheel Kalia, Rohit Jasrotia, Virender Pratap Singh, In Woodhead Publishing Series in Composites Science and Engineering, Magnetic Nanoferrites and their Composites, Woodhead Publishing, 2023, Pages 317-350, ISBN 9780323961158, https://doi.org/10.1016/B978-0-323-96115-8.00008-8

[22]. Irfan Ayoub, Rishabh Sehgal, Hendrik C. Swart, Rakesh Sehgal, Vijay Kumar, 20 - Perovskite-based LEDs and lasers, Editor(s): Srikanta Moharana, Tanmaya Badapanda, Santosh Kumar Satpathy, Ram Naresh Mahaling, Rajneesh Kumar, In Metal Oxides, Perovskite Metal Oxides, Elsevier, 2023, Pages 519-548, ISBN 9780323995290, https://doi.org/10.1016/B978-0-323-99529-0.00015-1.

[23]. Ayoub, I., Sehgal, R., Sharma, V., Sehgal, R., Swart, H.C., **Kumar, V.** (2023). Rare-Earth Doped Inorganic Materials for Light-Emitting Applications. In: Kumar, V., Sharma, V., Swart, H.C. (eds) Advanced Materials for Solid State Lighting. Progress in Optical Science and Photonics, vol 25. Springer, Singapore. https://doi.org/10.1007/978-981-99-4145-2_1

[24]. Ayoub, I., Sehgal, R., Sharma, V., Sehgal, R., Swart, H.C., **Kumar, V.** (2023). Rare-Earth-Doped Ternary Oxide Materials for Down-Conversion and Upconversion. In: Kumar, V., Sharma, V., Swart, H.C. (eds) Advanced Materials for Solid State Lighting. Progress in Optical Science and Photonics, vol 25. Springer, Singapore. https://doi.org/10.1007/978-981-99-4145-2_5

[25]. Mushtaq, U., Ayoub, I., Hussain, N., Sharma, V., Swart, H.C., **Kumar, V.** (2023). Luminescence Properties of Rare-Earth-Doped CaO Phosphors. In: Kumar, V., Sharma, V., Swart, H.C. (eds) Advanced Materials for Solid State Lighting. Progress in Optical Science and Photonics, vol 25. Springer, Singapore. https://doi.org/10.1007/978-981-99-4145-2_6

[26]. Mushtaq, U., Sehgal, R., Sharma, V., Sehgal, R., Swart, H.C., **Kumar, V.** (2023). Organic Material-Based Phosphors. In: Kumar, V., Sharma, V., Swart, H.C. (eds) Advanced Materials for Solid State Lighting. Progress in Optical Science and Photonics, vol 25. Springer, Singapore. https://doi.org/10.1007/978-981-99-4145-2_11

[27]. 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). (**Accepted**). https://iopscience.iop.org/book/edit/978-0-7503-3379-5/chapter/bk978-0-7503-3379-5ch8

[28]. Ayoub, I. et al. (2023). Optical and Electrical Switching of Thermochromic Metal Oxide Nanostructures. In: Kumar, V., Ayoub, I., Sharma, V., Swart, H.C. (eds) Optical Properties of Metal Oxide Nanostructures. Progress in Optical Science and Photonics, vol 26. Springer, Singapore. https://doi.org/10.1007/978-981-99-5640-1_2

[29]. Mushtaq, U., Sharma, V., Swart, H.C., **Kumar, V.** (2023). Functionality of Metal Oxide-Based Core-Shell Nanoparticles. In: Kumar, V., Ayoub, I., Sharma, V., Swart, H.C. (eds) Optical Properties of Metal Oxide Nanostructures. Progress in Optical Science and Photonics, vol 26. Springer, Singapore. https://doi.org/10.1007/978-981-99-5640-1_6

[30]. Ayoub, I., Sehgal, R., Sharma, V., Sehgal, R., Swart, H.C., **Kumar, V.** (2023). Applications of Upconversion Nanoparticles in Bio-Imaging. In: Kumar, V., Ayoub, I., Swart, H.C., Sehgal, R. (eds) Upconversion Nanoparticles (UCNPs) for Functional Applications. Progress in Optical Science and Photonics, vol 24. Springer, Singapore. https://doi.org/10.1007/978-981-99-3913-8_15

[31]. Jyotendra Nath, Kashma Sharma, Rishabh Sehgal, Shashiknat Kumar, Vishal Sharma, Rakesh Sehgal, **Vijay Kumar** (2024) Polysaccharide based superabsorbent hydrogels, Shakeel Ahmed, Akbar Ali (Eds), Polysaccharides based Hydrogels, Publisher: Elsevier. https://doi.org/10.1016/B978-0-323-99341-8.00009-0

[32]. Shabnum Saleem, Kashma Sharma, Vishal Sharma, Vaneet Kumar, Rakesh Sehgal, **Vijay Kumar** (2024) Polysaccharide-based super moisture absorbent hydrogels in sustainable agricultural applications, Shakeel Ahmed, Akbar Ali (Eds), Polysaccharides based Hydrogels, Publisher: Elsevier. https://doi.org/10.1016/B978-0-323-99341-8.00017-X

[33]. Jyotendra Nath, Kashma Sharma, Shashikant Kumar, Vijay Kumar, 3 - Ionotropic cross-linking methods for different types of biopolymeric hydrogels, Editor(s): Amit Kumar Nayak, Md Saquib Hasnain, Ionotropic Cross-Linking of Biopolymers, Elsevier, 2024, Pages 63-98, ISBN 9780323961165, https://doi.org/10.1016/B978-0-323-96116-5.00010-7

[34]. Kibrya Farooq, Kashma Sharma, Vishal Sharma, Vaneet Kumar, **Vijay Kumar**, Grafted Biopolymers in Drug Delivery, Amit Kumar Nayak, Md Saquib Hasnain, Tejraj M. Aminabhavi (Eds), Engineered Biomaterials for Drug Delivery, Publisher: Elsevier. (**Submitted**).

Editorial Board of Journals

- Lead Guest Editor of a Virtual Special Issue of *Results in Surfaces and Interfaces* for the 8th Edition of the International Conference on Nanotechnology for Better Living (8E-ICNBL) held at NIT Srinagar from May 24–29, 2023.
- Lead Guest Editor of a Special Issue of Materials Today: Proceedings (Elsevier Journal), featuring the proceedings of the 8th Edition of the International Conference on Nanotechnology for Better Living (8E-ICNBL) held at NIT Srinagar from May 24–29, 2023.
- Associate Editor in Frontiers in Energy Research under Section Nano Energy (I.F. = 3.858)
- Early Career Advisory Board (ECAB) member of Vacuum (Elsevier, I.F. = 4.0).
- Advisory board member of Results in Surfaces and Interfaces, an open-access journal by

Elsevier.

- Section Topics Board Editors for 'Polymeric Materials' in the Materials MDPI Journal (I.F. = 3.057)
- Guest Editor for a special issue on “Nano Biocomposites for Future Bioeconomy” published in Crystals (MDPI Journal, I.F. = 2.404)
- Lead Guest Editor of a Virtual Special Issue of VACUUM (Elsevier Journal, I.F. = 2.067), featuring the proceedings of the International Symposium on “Functional Materials (ISFM-2018): Energy and Biomedical Applications”, held in Chandigarh during from 13–15, 2018. https://www.sciencedirect.com/journal/vacuum/special-issue/100HVM2DQS1
- Lead Guest Editor of a Special Issue of Materials Today: Proceedings (Elsevier Journal), featuring the proceedings of the International Symposium on “Functional Materials (ISFM-2018): Energy and Biomedical Applications”, held in Chandigarh from April 13–15, 2018. https://www.sciencedirect.com/journal/materials-today-proceedings/vol/21/part/P4

Reviewer for grants from NRF-South Africa, SERB/DST Govt. of India, Ministry of AYUSH, Govt. of India, etc.

External examiner for Ph.D. thesis from University of South Africa (South Africa); Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (India).

Expert opinion on book proposals from Wiley VCH, Springer, Elsevier, and others

Professional Memberships

- Member of the Indian National Young Academy of Sciences (INYAS) for five years (2023-2027)
- Lifetime member of the Electron Microscope Society of India (Membership No.: LM2088)
- Early Career Advisory Board (ECAB) member of Vacuum (Elsevier, I.F. = 4.0).
- Advisory board member of Results in Surfaces and Interfaces, an open-access journal by Elsevier.
- Lifetime member of the Asian Polymer Association (Membership No.: L-674)
- Member of the International Editorial Board of the Oriental Journal of Chemistry.
- Life Time Member of the Nuclear Track Society (INTS) of India

Overseas Visits

S. No.	Place (Country Visited)	Purpose of Visit	Dates of Visit
1.	Warsaw University of Technology - Poland	Attended E-MRS 2023 Fall Meeting	Sept. 18, 2023– Sept. 21, 2023
2.	University of Southern Denmark (Denmark)	To carry out research under the SERB "International Research Experience (SIRE)" fellowship	Nov. 7, 2022 – Feb. 02, 2023
3.	Texas & AM University (USA)	To carry out advanced research under the Joint Center awarded by the IUSSTF	Sept. 27 - Oct. 2019
4.	Amanzi Private Reserve (South Africa)	To attend the 7th South African Conference on Photonic Materials	March 27 -31, 2017
5.	Venice (Italy)	To attend the 3rd International Conference on Mechanical Properties of Materials	December 14-17, 2016

6.	Nelson Mandela Bay (South Africa)	To attend the annual conference of the South African Institute of Physics	June 29 – July 03, 2015
7.	Mabula Game Lodge (South Africa)	To attend the 6th South African Conference on Photonic Materials	May 5-7, 2015
8.	Johannesburg (South Africa)	To attend the 7th International Symposium on Macro- and Supramolecular Architectures and Materials	November 23-27, 2014
9.	Thailand (Bangkok)	To attend the International Conference on Smart Materials and Surfaces	August 26-28, 2014
10.	Puebla (Mexico)	To attend the International Conference on Nuclear Tracks in Solids	September 4-9, 2011

Research Collaborations

Prof. Hendrik Swart: *Department of Physics, University of the Free State, South Africa*

Prof. Yogendra K Mishra: *Smart Materials, NanoSYD, Mads Clausen Institute, University of Southern Denmark, Denmark*

Prof. Sanjay Mathur: *Institute of Inorganic Chemistry, University of Cologne, Germany*

Prof. Yang Li: *School of Biomedical Engineering, Guangzhou Medical University, Guangzhou, China*

Dr. Vishal Sharma: *Institute of Forensic Science & Criminology, Panjab University, Chandigarh*

Dr. Kashma: *DAV College, Sector – 10, Chandigarh*

Dr. Santosh K. Tiwari: *Faculty of Chemistry, Warsaw University, Warsaw, Poland*

Dr. Subrata Das: *Materials Science and Technology Division, CSIR – National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram, Kerala, India*

Dr. Sudpta Som: *Shiv Nadar University Chennai, Tamil Nadu, India*

Statutory Body Membership

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

Academic & Other Activities

- Adjunct Faculty at the Center for Energy & Environmental Research (CEER) from 01.02.2024 to date.
- Incharge of Guest House from 03.11.2023 to date.
- Member of Institute Level Socio-Cultural Committee from 11.09.2023 to date.
- Permanent member of the Central Research Facility Center (CRFC) of the Institute since 20.06.2022.
- Member of the Intellectual Property Rights (IPR) Cell of the Institute from 11.10.2021 to till date.
- Departmental Ph.D. Programmes Coordinator since 20.09.2021 to date.
- Departmental Outreach Programmes Coordinator since 20.09.2021 to date.
- Departmental In-Charge Alumni since 20.09.2021 to date.

- Departmental In-charge of Physics Innovation Cell from 20.09.2021 to date.
- Staff Advisor to the Mess from 22.12.2020 to till date.
- NIRF Core Committee member for collecting and uploading data on the portal ranking for 2021 & 2022 (13.07.2020 & 27.09.2021).
- NBA Core Committee member associated with various activities related to the Accreditation of the Institute (14.12.2019).
- Nominated member as a departmental coordinator of MIS-TEQIP III, 20.6.2020 to date.
- Nodal officer for Ek Bharat Shreshtha Bharat (EBSB) for Teacher Exchange for 2020 in the Institute (09.01.2020).
- Departmental GeM Coordinator from 20.12.2019 to date.
- Nominated as Associate Coordinator for MSc. Physics Programme from 17.7.2019 to date.
- In charge of the Engineering Physics Lab from 16.07.2019 to date.
- Faculty-in-Charge, Department Time Table, 16.07.2019-till date.
- Coordinated run-up activities titled "Yoga-Cum-Marathon" at NIT Srinagar on March 31 and May 2, 2019.
- Coordinated the International Day of Yoga (IDY) celebration on June 21, 2019.
- Faculty-in-Charge, Institute (Central) Time Table, 16.02.2019 to date.
- Member of the Departmental Purchase Committee (DPC), 29.11.2018.
- Acted as co-coordinator to conduct the Department of Science & Technology, Government of India, sponsored INSPIRE Science Camp at Chandigarh University from 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 from 11 – 15 June 2016.

Session Chair

- 58th and 59th Annual Conference of the South African Institute of Physics, South Africa, from 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 from June 22-23, 2019.

Extra-Curricular Activities

- Participated in debate and declaration contexts at 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.

Organization of Scientific Meetings

Main (Co)-Organizer: *Capacity Building Conferences/Shor-term Courses/Workshops/FDPs*

2024: A two-day workshop on "Role of Academic Driven Startups in the Developing Economy of J&K (RASE-2024)" was held at NIT Srinagar with the Department of Holistic Education from 29-30 June 2024.

2023: 8th Edition of the International Conference on "Nanotechnology for Better Living (NBL-

2023)" held at NIT Srinagar in association with the Indian Institute of Technology (BHU) Varanasi from May 25–29, 2023.

2022: SERB sponsored a high-end workshop on "3D Printing, Nano-Tribology, and Characterization of Materials," organized by the Department of Mechanical Engineering, NIT Srinagar, from August 29 to September 3, 2022.

2022: DST supported the STUTI training program on "Material Characterization Techniques" organized by the Department of Physics, Mechanical Engineering Department, NIT Srinagar, in association with the Department of Physics, Aligarh Muslim University, Aligarh as PMU, from June 28 to July 4, 2022.

2022: DST supported a STUTI training program on "R&D Equipment: Material Processing & Advanced Functional Material Characterization Techniques," organized by the Department of Physics and the Central Research Facility Centre (CRFC), NIT Srinagar, in association with SAIF/CIL Panjab University, Chandigarh, as the PMU, from May 30 to June 5, 2022.

2022: A one-day workshop on "Awareness of the I-STEM Portal for Use of the R&D Resources" in association with the Indian Science, Technology, and Engineering Facilities Map was organized on May 23, 2022, at NIT Srinagar.

2020: TEQIP III sponsored a one-week short-term course (through online mode) on "Recent Advances in Nanoscience and Nanotechnology (RANN-2020)" held at the National Institute of Technology Srinagar from August 24-28, 2020.

2019: TEQIP III sponsored a short-term "Materials Characterization Techniques" course held at the National Institute of Technology Srinagar from June 24-28, 2019.

2019: International Conference on "Future of Engineering Systems and Technologies (FEST 2019)" was held on December 21 and 22, 2019, at the G.L. Bajaj Institute of Technology in Greater Noida.

2018: International Symposium on Functional Materials (ISFM-2018): Energy and Biomedical Applications, held at Chandigarh from April 13–15, 2018.

2017: DST sponsored a “Research Software and Analytics” workshop held at Chandigarh University from 18 to 22 December 2017.

Teaching Activities

Applied Physics: B.Tech. Course (APT-113)

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

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

Optoelectronics: MSc. Physics Course (APB-761)

Statistical Mechanics: MSc. Course (PSPHY203)

Referee Contributions

Referee for >50 peer-reviewed magazines (high-rank materials science 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

Elsevier: 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: Advanced Functional Materials, 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.

Scientific Speeches (Worldwide Institutes & Conferences)

1. Delivered an invited talk titled "Ternary Metal-Oxide-Based Phosphors for Solid State Lighting Applications" at the International Symposium on Semiconductor Materials & Devices (ISSMD-2024 organized by the Department of Physics, University of Kashmir during September 4-6, 2024.
2. Delivered an invited talk titled "Synthesis and Photoluminescence Properties of Rare-earth Doped Ternary Metal-Oxide-Based Phosphors" at the International Conference on Engineered Materials for Sustainable Development (EMSD 2024) organized by the Department of Physics, Punjab Engineering College Chandigarh during July 24-26, 2024.
3. Delivered an invited talk titled "Color Tunable Phosphors for Display Device Applications" at a One-Week FDP on "Energy Harvesting Materials and Technology" in online mode from April 29, 2024, to May 3, 2024, organized by the Applied Science Department, National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh.
4. Delivered an invited talk titled ‘Ternary Metal-Oxide-Based Phosphors for Solid-State Lighting Applications’ at the International Conference on Physics for Sustainable Development organized by the Department of Physics, Central University Jammu, from 4-5 April 2024.
5. Delivered an invited talk titled ‘Synthesis and Photoluminescence Properties of Rare-Earth Doped Ternary Oxide Phosphors for Solid-State Lighting Applications’ at the International Conference on Green Energy for Sustainable Future: Innovations, Policies, and Global Collaborations, MCM DAV College Kangra (H.P.) during 21-23 March 2024.
6. Delivered an invited talk titled ‘Hydrogels: Smart Materials with Multifunctional Applications’ at Prof. R.C. Paul National Symposium on Chemistry for Innovation and Sustainable Growth organized by the Department of Chemistry, Panjab University Chandigarh during 15-16 February 2024.
7. Delivered an invited talk titled 'Sustainable Anti-Swelling Hydrogel for Rapid and Effective Oil Spill Cleanup in Challenging Environments: An Experimental Study of Water Repellency and Oil Absorption' at the 3rd International Conference on Water Technologies 2023 (ICWT 2023), organized by the Water Innovation Center: Technology, Research & Education, IIT Bombay, held from December 4-7, 2023.
8. Delivered an invited talk entitled "Color Conversion Phosphors: Properties and Solid-State Lighting Applications" in the 5 days’ short-term course on "Emerging Materials and their Societal Impact" organized by the Department of Physics, NIT

Patna from 6-10 November 2023.

9. Delivered a talk titled 'Synthesis and Photoluminescence Properties of Rare-Earth-Doped Ternary Oxide-Based Phosphors for Solid-State Lighting Application' at the E-MRS 2023 Fall Meeting held at the University of Technology in Warsaw, Poland, from September 18 to 21, 2023.
10. Delivered an invited talk on the “Role of color Conversion Phosphors, their properties, and applications” in 5 days at National FDP on Advancement in Material Science and Machine Learning Applications from 1-5 August 2023, organized by the Department of Applied Sciences, Chitkara University Institute of Engineering & Technology, Chitkara University, Punjab.
11. Delivered Expert Talk on Laser & Fiber Optics at Gulzar Group of Institutions, Ludhiana on 28th June 2021.
12. Delivered invited talk in a one-week online Faculty Development program on the topic “Critical Thinking: Outcome-based Education” Organized by Internal Quality Assurance Cell Gulzar Group of Institutions, Ludhiana from 18th May - 22nd May 2021 through online mode.
13. Delivered an invited lecture on Research & Ethics at the Department of Nanotechnology, University of Kashmir (J&K) on 10th May 2021.
14. Delivered guest lectures on Introduction to Nanotechnology from December 10-31, 2020, for MSc 3rd Semester Students of Biotechnology, Microbiology, and Biochemistry at the School of Biotechnology, University of Jammu, Jammu.
15. Delivered invited talk titled “Color Conversion Phosphors: Properties and Solid State Lighting Applications” in one week online Short Term Course on “Advanced Functional Materials (AFMAT-2020)” held from Sept. 28 - Oct. 02, 2020, organized by the Department of Physics, Sant Longowal Institute of Engineering and Technology, Longowal.
16. Delivered an invited lecture on Research Methodology at the Department of Nanotechnology, University of Kashmir (J&K) on 19th October 2020.
17. Delivered invited talk titled “Oxide-based nano phosphors for solid-state lighting” 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.
18. Delivered a talk on Scientific Discovery and Innovation on a Webinar structured around PHYSICS AND ASTRONOMY organized by Fair Director IRIS National Fair on 7th July 2020.
19. Delivered an invited lecture (Online) on “How to Write a Research Proposal" organized by the Office of Research and Development, Sri Sai University Palampur (Himachal Pradesh) on 23rd June 2020.
20. Delivered a guest lecture (Online) on How to Write A Research Project at CT Group of Institutions on 15th June 2020.
21. Delivered invited lecture on Research Methodology: Basics to Sampling Design Techniques at the Institute of Forensic Science & Criminology, Panjab University Chandigarh on 26th May 2020.
22. Delivered invited talk on “Rare-earth-doped oxide-based nanophosphors for solid-state lighting and forensic applications” in a one-week online Faculty Development Programme on "Recent Trends in Materials Science and Engineering “organized by the Department of Physics, School of Basic Sciences & Research, Sharda University Greater Noida, Uttar Pradesh during May 25-31, 2020.
23. Delivered lecture on Scientific Discovery and Innovation at Dr. Vijay Memorial Senior Secondary School Dharampur, Distt. Mandi (Himachal Pradesh) on 6th June

2018.

24. Delivered invited talk on “Luminescent behavior of RE-doped ions in different oxide-based hosts” in “One Day National Seminar on Advancement in Science and Technology” at PEC University of Technology Chandigarh on 4th March 2017.

Conferences/ Workshops/ Seminars Attended

1. Attended a 03-day National Workshop on the Implementation of the National Education Policy 2020, organized by the Central University of Himachal Pradesh and Shiksha Sanskriti Utthan Nyas at the National Institute of Technology, Hamirpur, Himachal Pradesh on 16-18 June 2022.
2. Attended the Indian Summer School on Crystal Growth (ISSCG-2020) organized by SSN Research Centre, SSN Institutions (Autonomous) from 14-23 May 2020.
3. Virtual Conference on "Materials for Energy Harvesting and Catalysis" held on 1st - 3rd May 2020 via Zoom, organized by TIFR Mumbai and IISER Kolkata.
4. Attended a Faculty Development Programme (Through Online Mode) on MOOCs: Instructional Design, Development, and Learning Analytics during April 4-9, 2020, organized by the Centre for Academic Leadership and Education Management (CALEM), Panjab University, Chandigarh.
5. Development Program on "Outcome-Based Education" held at the National Institute of Technology Srinagar during May 18-22, 2019.
6. Faculty Development Program on "PADAGOGY" held at the National Institute of Technology Srinagar during April 1-5, 2019.
7. 7th South African Conference on Photonic Materials, 27-31 March 2017, Amanzi Game Lodge, South Africa. Oral Presentation.
8. 3rd International Conference on Mechanical Properties of Materials (ICMPM 2016) was held in Venice, Italy during December 14-17, 2016. Oral Presentation.
9. "Orientation & Faculty Development Program" at Chandigarh University from 1st - 15th July 2016.
10. "National Conference on Advanced Material Processing and Characterization (NCAMPC-2016)" held at Chandigarh University, Gharuan, Mohali, Punjab, India, on 27th May 2016.
11. Annual Conference of the South African Institute of Physics (SAIP-2015) at Boardwalk Convention Centre, Port Elizabeth, Nelson Mandela Bay, South Africa during 29 June - 03 July 2015. Oral Presentation.
12. "International Conference on Materials Science & Technology (ICMTech-2016)" held at the University of Delhi during 01-04 March 2016. Oral Presentation.
13. 6th South African Conference on Photonic Materials, 5-7 May 2015, Mabula Game Lodge, South Africa.
14. 7th International Symposium on Macro- and Supramolecular Architectures and Materials, Johannesburg, South Africa, November 23-27, 2014. Oral Presentation.
15. SETCOR International Conference on "Smart Materials and Surfaces SMS-2014" at Sheraton Grande Sukhumvit Hotel, Bangkok, Thailand, during August 26-28, 2014. Oral Presentation.
16. The National Laser Center "BASIC LASER SAFETY COURSE" at the University of the Free State, South Africa, on 14 April 2014.
17. International Conference on "Structural and Physical Properties of Solids (SPPS-2013)" at the Department of Applied Physics, Indian School of Mines, Dhanbad, India during 18-20 November 2013. Oral Presentation.
18. 3rd National Conference on "Advanced Materials and Radiation Physics (AMRP-

2011)" at Sant Longowal Institute of Engineering & Technology (SLIET), Longowal during 22-24 November 2013.

19. 58th Annual Conference of the South African Institute of Physics (SAIP-2013) at Richards Bay Campus, University of Zululand, South Africa, during July 08-12, 2013.
20. 57th DAE-Solid State Physics Symposium (DAE-SSPS 2012) at Indian Institute of Technology (IIT) Bombay during December 03-07, 2012.
21. International Conference on "Radiation Environment-Assessment, Measurement and its Impact (RADENVIRON-2012)" at Babasaheb Bhimrao Ambedkar University, Lucknow during April 12-14, 2012. Oral Presentation.
22. National Conference on "Material Science-Applications in Energy & Environment" at DAV College Jalandhar (Pb.) during 2-3 March 2012.
23. 56th DAE-Solid State Physics Symposium (DAE-SSPS 2011) at SRM University Kattankulathur, Tamilnadu during December 19-23, 2011.
24. 2nd National Conference on "Advanced Materials and Radiation Physics (AMRP-2011)" at Sant Longowal Institute of Engineering and Technology (SLIET), Longowal during 4-5 November 2011.
25. 17th National Symposium on "Solid State Nuclear Track Detectors and Their Applications (SSNTD-17)" at M.S. University, Vadodara during 17-19 Oct. 2011.
26. Three-day conference on "Recent Trends in Material Science" at JUIT, Solan during 8-10 October 2011.
27. 25th International Conference on "Nuclear Tracks in Solids (ICNTS-2011)" in Puebla, Mexico from September 4-9, 2011.
28. Workshop on "Electronic and Ionic Materials & Devices (WEIMD – 2011)" at Banaras Hindu University, Varanasi during March 25-27, 2011.
29. International Symposium on "Accelerator and Radiation Physics (ISARP -2011)" at Saha Institute of Nuclear Physics, Kolkata, from February 16-18, 2011.
30. International Workshop on "Neutron Dosimetry and Spectrum Unfolding (NDSU-2010)" organized by Health Physics Division, BARC, Mumbai during March 15-19, 2010.
31. Two days National Workshop on "Nano Technology and Applied Sciences" at Haryana College of Technology & Management during 28-29 November 2009.
32. Two days National Conference on "Accelerator and Low-Level Radiation Safety (NCALLRS-2009)" organized by the Inter-University accelerator Centre (IUAC), New Delhi during November 18-20, 2009. Oral Presentation.
33. 16th National Symposium on "Solid State Nuclear Track Detectors and Their Applications (SSNTD-16)" at Guru Nanak Dev University (GNDU), Amritsar during 9-11 October 2009.
34. National Conference on "Synthesis and Characterization of Smart Materials (SCSM-2009)" at Bareilly College, Bareilly during 12-14 September 2009.
35. National Conference on "Recent Advances in Condensed Matter Physics" organized by the National Institute of Technology (NIT), Hamirpur during May 23-24, 2009.
36. Two days National Conference on "Advanced Materials and Radiation Physics (AMRP-09)" organized by the Department of Physics, Sant Longowal Institute of Engineering & Technology during March 9-10, 2009.
37. National Conference on "Recent Advances in Innovative Materials (RAIM-08)" organized by the Applied Sciences & Humanities Department of NIT Hamirpur during February 16-17, 2008.

38. 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.
39. 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.
40. Five days course on "PHP, MySQL & Apache" conducted by the Computer Sc. & Engg. Department, NIT Hamirpur during June 06-10, 2007.
41. Five days course on "Introduction to Computer Applications" sponsored by TEQIP at NIT Hamirpur during June 6-10, 2005.
42. 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.

Outreach Activities as a Coordinator

1. Awareness Program for School Students in collaboration with Panjab University Chandigarh under STUTI supported by DST, Govt. of India.
2. We and Our Environment" for the school students.
3. World Science Day on the theme "Science for Peace, Progress, and Sustainable Development.
4. Visit of IIT Ropar for Signing MoU for academic cooperation between NIT Srinagar & IIT Ropar and for Creating AWaDH Spoke at NIT Srinagar.

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

Resource Person: Prof. S. K. Chakravarti, Former Professor & Head, National Institute of Technology, Kurukshetra

Date: 9th January 2021