



जम्मू केंद्रीय विश्वविद्यालय Central University of Jammu

राया-सूचानी (बागला), जिला: सांबा-181143, जम्मू (जम्मू एवं कश्मीर), भारत
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FACULTY PROFILE

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1. EXECUTIVE PROFESSIONAL SUMMARY

Accomplished Academic Leader, Senior Professor, and Materials Physicist with over two decades of distinguished service in higher education administration, extramural research leadership, and institutional development. Currently serving as Dean of the School of Basic and Applied Sciences, Head of the Department of Physics and Astronomical Sciences, Director of the Directorate of Internal Quality Assurance (DIQA), and Coordinator of the Satish Dhawan Centre for Space Science at the Central University of Jammu. Demonstrated record of institutional governance, strategic vision, and academic excellence across national statutory bodies including the University Court, Executive Council, and Academic Council.

Proven expertise in securing and directing over ₹2.93+ Crore (INR 29.3+ Million) in extramural sponsored R&D grants from premier national agencies including ISRO, DRDO (Ministry of Defence), DST, SERB, BRNS/DAE, and IUAC. Prolific research contributor with 145 peer-reviewed publications in reputed international journals (including Elsevier, Wiley, and Springer with Impact Factors up to 13.3), 4 books and book chapters, and 21 conference proceedings. Recognized with prestigious international honors including the NRF South Africa C2 Rating, Visiting Research Fellowship at University of the Free State, and DST Young Scientist Award. Successfully mentored 16 postgraduate research scholars (13 Ph.D. scholars: 11 awarded + 2 submitted, and 3 M.Phil. scholars).

Key Academic & Research Competencies

• Academic Governance & University Administration	• Luminescence & Nanophosphor Physics
• Extramural R&D Grant Management (ISRO / DRDO / DST)	• Swift Heavy Ion Irradiation (IUAC / Inter-University)
• Quality Assurance (DIQA, NAAC SSR, NIRF Frameworks)	• Solid State Lighting & Phosphor Development
• Doctoral Supervision & Postgraduate Mentorship	• Material Characterization & Surface Science
• Space Research Collaboration (SDCSRO / ISRO Missions)	• ICT Pedagogy & Computational Physics Courseware

2. ACADEMIC LEADERSHIP & ADMINISTRATIVE EXPERIENCE

Administrative Role & Portfolio	Institution / Department	Tenure / Duration
Head, Department of Physics and Astronomical Sciences	Central University of Jammu, Samba (J&K)	Oct 2023 to Present
Dean, School of Basic and Applied Sciences	Central University of Jammu (CUJ)	Sep 2023 to Sep 2026
Member, University Finance Committee	Central University of Jammu, (J&K)	June 2026 to present
Director, Internal Quality Assurance (DIQA)	Central University of Jammu (CUJ)	Nov 2024 to Dec 2025
Head, Department of Nanoscience and Materials	Central University of Jammu (CUJ)	Nov 2021 – Oct 2023

Head, Department of Physics and Astronomical Sciences	Central University of Jammu, Samba (J&K)	Oct 2017 – Oct 2020
Coordinator, Satish Dhawan Centre for Space Research	Central University of Jammu	Oct 2018 – Dec 2025
Member, Executive Council	Central University of Jammu	Jan 2018 – Jan 2021
Member, Court	Central University of Jammu	Dec 2017 – Dec 2020
Member, Academic Council	Central University of Jammu	Sep 2017 – Sep 2020
Coordinator, NAAC SSR	Central University of Jammu	2019
Coordinator, Centre of Nanotechnology	Shri Mata Vaishno Devi University (SMVDU)	Jan 2015 – Sep 2017

3. EDUCATIONAL QUALIFICATIONS

Degree / Examination	University / Institution	Year of Award
B.Sc.	Himachal Pradesh University, Shimla	2000
M.Sc. (Physics)	Jiwaji University, Gwalior	2002
Ph.D. (Physics)	Kurukshetra University, Kurukshetra	2007

4. SPONSORED EXTRAMURAL RESEARCH GRANTS & PROJECTS

Total Cumulative Grant Funding: ₹2.93+ Crore (7 Major Extramural Research Projects from ISRO, DRDO, DST, SERB, BRNS/DAE, and IUAC)

#	Project Title	Funding Agency & Role	Amount (Lakhs)	Duration / Status
1	Fabrication and design of nanomaterials based prototype for future EUV/X-ray polarimetric missions	ISRO, Govt. of India (Co-Principal Investigator)	₹59.31 L	2024 – 2027 [Ongoing]
2	High Temperature Thermal Sensing using Nanophosphors	DRDO, Ministry of Defence, Govt. of India (Principal Investigator (PI))	₹108.13 L	2020 – 2023 [Completed]
3	Fabrication of TiO ₂ decorated ZnO Nanorods / Conducting Polymer heterojunctions for Flexible Photovoltaic applications	DRDO, Ministry of Defence, Govt. of India (Principal Investigator (PI))	₹53.41 L	2020 – 2023 [Completed]
4	Synthesis and characterization of mixed Borate/phosphate nanophosphors for Solid State Lighting	EMR, SERB, Govt. of India (Principal Investigator (PI))	₹18.25 L	2017 – 2020 [Completed]
5	Effect of swift heavy ion irradiations on alkali-alkaline earth based oxide: luminescence and related studies	IUAC (An autonomous centre of UGC), India (Principal Investigator (PI))	₹6.75 L	2011 – 2014 [Completed]
6	Development of Nanophosphors: Luminescence and related studies	DST, Govt. of India (Principal Investigator (PI))	₹27.60 L	2012 – 2015 [Completed]
7	Alkaline earth based nanophosphors: synthesis, characterization and their luminescence studies	BRNS, Department of Atomic Energy (DAE), Govt. of India (Principal Investigator (PI))	₹20.44 L	2012 – 2015 [Completed]

5. RESEARCH MENTORSHIP & DOCTORAL SUPERVISION

Post Doctoral Supervision:

S.No.	Scholar Name	Degree	Status / Year of Award
1	Dr. Vandana	DST WoS-A	2025 ongoing
2	Dr. Mohit Manhas	DRDO-RA	2024-2025

Total Ph.D. Scholars Supervised: 16 (13 Ph.D. Scholars: 11 Awarded + 2 Theses Submitted; 3 M.Phil. Scholars: 3 Awarded)

Doctor of Philosophy (Ph.D.) Theses Supervised:

S.No.	Scholar Name	Degree	Status / Year of Award
1	Ankush Kumar Bedyal	Ph.D.	Awarded (Feb 2016)

2	Palvi Gupta	Ph.D.	Awarded (April 2018)
3	Mohit Manhas	Ph.D.	Awarded (April 2018)
4	Neharika	Ph.D.	Awarded (Dec 2018)
5	Pankaj Biswas	Ph.D.	Awarded (Mar 2019)
6	Sumara Khursheed	Ph.D.	Awarded (Mar 2020)
7	Rubby Mahajan	Ph.D.	Awarded (Mar 2022)
8	Payal Khajuria	Ph.D.	Awarded (Feb 2023)
9	Surbhi Pathania	Ph.D.	Awarded (Mar 2023)
10	Isha Charak	Ph.D.	Awarded (Oct 2024)
11	Rajan Singh	Ph.D.	Awarded (Sep 2024)
12	Bandhna Verma	Ph.D.	Submitted (Aug 2026)
13	Ayesha Bhandari	Ph.D.	Submitted (Aug 2026)
14	Manta Sharma	Ph.D.	Ongoing(2025-)
15	Satvik Dub	Ph.D.	Ongoing (2025-)

Master of Philosophy (M.Phil.) Dissertations Supervised:

S.No.	Scholar Name	Degree	Status / Year of Award
1	Natasha Chopra	M.Phil.	Degree Awarded (2008)
2	Upma Choudhary	M.Phil.	Degree Awarded (2008)
3	Jaspreet Kaur	M.Phil.	Degree Awarded (2008)

6. PATENTS/ COPYRIGHT

S.No.	Title of Patent	Specialized Area	National / International	Filed /Published/ Granted	Date of Patent/ Copyright	Patent ID/ Application ID
1.	TOP WINDOW MUFFLE FURNACE FOR FIR SPECTROSCOPY AND THERMOMETRY	Physics	National	Published	2024	202211071134
2.	A HYBRID SATELLITE TERRESTRIAL SYSTEM FOR MOBILITY MANAGEMENT	Engineering	National	Published	2025	202411099561

7. PEER-REVIEWED RESEARCH PUBLICATIONS IN INDEXED JOURNALS (146 ARTICLES) Scopus h-index- 41, WoS Clarivate h-index-40

Updated September 2026

Chronological archive of 145 original peer-reviewed research papers published in prestigious international journals indexed in Web of Science, Scopus, SCI, and UGC CARE with Impact Factors up to 13.3 (Publishers include Elsevier, Springer Nature, Wiley-VCH, AIP, IOP, and Taylor & Francis).

- [1]. Manta Sharma, Rajan Singh, H.C. Swart, Vinay Kumar (2026), "Fluorescence intensity ratio-based thermometry and luminescent performance of thermally stable Sm³⁺ activated KCaP3O₉ phosphors" Journal of Alloys and Compounds Volume 1080, 2026, 190887, {Publisher: Elsevier} (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2026.190887>
- [2]. Bandhna Verma, Ashish Kumar, H.C. Swart, Vinay Kumar (2026). "Effect of CuS on self-powered photodetective properties of flexible ZnO-P3HT heterojunction device." *Materials Science and Engineering: B*, 325, 119146. [Publisher: Elsevier] (Impact Factor: 5.7) DOI: <https://doi.org/10.1016/j.mseb.2025.119146>

- [3]. Sahil Bangotra, Amandeep Acharya, Menakshi Khajuria, Pankaj Biswas, Sukhbir Singh, Vinay Kumar, M. Manhas (2026). "Structural, surface and luminescence investigation of CaB₂O₄:Sm³⁺ phosphor for high color purity orange-red emission to fill amber gap in LEDs." *Ceramics International*, Available online 6 July 2026. [Publisher: Elsevier] (Impact Factor: 6.0) DOI: <https://doi.org/10.1016/j.ceramint.2026.07.034>
- [4]. Ayesha Bhandari, Onkar Nath Verma, Ashish Kumar, H.C. Swart, Vinay Kumar (2026). "Thermally activated synergistic photocatalysis in transition metal doped TiO₂ nanomaterials." *Journal of Alloys and Compounds*, 1071, 188741. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2026.188741>
- [5]. V. Rath, K. Singh, M. Sathwane, J. Kumar, M. Verma, Vinay Kumar, P.K. Maji, K.P.S. Parmar, R.K. Brajpuriya, A. Kumar (2026). "PVDF/Ni NWs Composite Films: A High-Performance N-Type Thermoelectric Material for Flexible Energy Harvesting." *Polymer Composites*, 47, 7541–7550. [Publisher: Wiley] (Impact Factor: 4.9) DOI: <https://doi.org/10.1002/pc.28312>
- [6]. M. Verma, K. Singh, A. Bhogra, V. Kumar, D. Kanjilal, R. Singh, Vinay Kumar, Ashish Kumar (2026). "Investigation of swift heavy Ni and Au ion irradiation effects on the optical and structural evolution of GaN probed by synchrotron PL, XANES, and Raman spectroscopies." *Journal of Alloys and Compounds*, 1063. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2025.187210>
- [7]. Isha Charak, R. Singh, Ashish Kumar, A.K. Bedyal, H.C. Swart, Vinay Kumar (2026). "Combustion-assisted synthesis and luminescent properties of Dy³⁺-Activated Ca₂B₂O₅ phosphor for optoelectronic devices applications." *Journal of the Indian Chemical Society*, 103. [Publisher: Elsevier] (Impact Factor: 3.4) DOI: <https://doi.org/10.1016/j.jics.2025.101234>
- [8]. Ankush Kumar Bedyal, Hendrik Christoffel Swart, Vinay Kumar (2026). "Tunable Emission from Eu³⁺-Doped Zn₃(VO₄)₂ Phosphors for Light-Emitting Diodes." *Physica Status Solidi (a)*, 223 (2), e202500623. [Publisher: Wiley] (Impact Factor: 2.1) DOI: <https://doi.org/10.1002/pssa.202500623>
- [9]. Muskan Verma, K. Singh, Vinay Kumar, P. Kumar, D. Kanjilal, Ashish Kumar (2026). "Ion-induced damage in silicon carbide: insights into defect formation and evolution from atomic to device scales." *Journal of Materials Science: Materials in Electronics*, 37. [Publisher: Springer] (Impact Factor: 3.2) DOI: <https://doi.org/10.1007/s10854-025-13982-x>
- [10]. M. Manhas, Payal Khajuria, Neeraj Manhas, Vinay Kumar (2025). "Synthesis, spectral, and thermal properties of K₂CaP₂O₇:Sm³⁺ phosphors to fill the amber gap in LED applications." *Journal of Alloys and Compounds*, 182570. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2025.182570>
- [11]. Neha Lalotra, Vinay Kumar, Kamni Pathania (2025). "Structural analysis, charge compensation and down-conversion photoluminescence in LiMgPO₄:Sm³⁺ phosphors for warm light emitting applications." *Ceramics International*, 51, 47295–47307. [Publisher: Elsevier] (Impact Factor: 6.0) DOI: <https://doi.org/10.1016/j.ceramint.2025.06.312>
- [12]. Mohit Manhas, N. Kumar, S. Singh, H.C. Swart, Vinay Kumar (2025). "Structural, optical, and surface analysis of Dy³⁺ doped Ba₂Mg(BO₃)₂ phosphor for w-LED applications." *Journal of Luminescence*, 277, 120987. [Publisher: Elsevier] (Impact Factor: 3.8) DOI: <https://doi.org/10.1016/j.jlumin.2024.120987>
- [13]. Bandhna Verma, Ashish Kumar, H.C. Swart, Vinay Kumar (2025). "Enhanced optical and electrical properties of NiO-GO composite thin films on flexible PET substrates for optoelectronic applications." *Chemistry of Inorganic Materials*, 5, 100097. [Publisher: Elsevier] (Impact Factor: 3.8) DOI: <https://doi.org/10.1016/j.cim.2025.100097>
- [14]. Ayesha Bhandari, Ashish Kumar, Kamni, Manvi Rajput, H.C. Swart, Vinay Kumar (2025). "Enhanced UV protection and photocatalytic activity in Samarium and Europium co-doped TiO₂ thin films: A durable solution for protective coatings." *Materials Science & Engineering B*, 320, 118429. [Publisher: Elsevier] (Impact Factor: 5.7) DOI: <https://doi.org/10.1016/j.mseb.2025.118429>
- [15]. Ayesha Bhandari, H.C. Swart, Vinay Kumar (2025). "Tailoring structural and optical properties of Europium-doped TiO₂ nanopowders for advanced solid-state lighting." *Applied Physics A*, 131, 526. [Publisher: Springer] (Impact Factor: 3.0) DOI: <https://doi.org/10.1007/s00339-025-08640-6>
- [16]. Isha Charak, A.K. Bedyal, M. Manhas, H.C. Swart, Vinay Kumar (2024). "Near UV-photons excited highly pure and thermally stable Ca₂B₂O₅:Sm³⁺ phosphor for filling the amber gap."

Inorganic Chemistry Communications, 160, 111885. [Publisher: Elsevier] (Impact Factor: 5.9) DOI: <https://doi.org/10.1016/j.inoche.2023.111885>

- [17]. K.B. Morebodi, S.N. Ogugua, V. Kumar, H.C. Swart (2024). "The effects of Eu³⁺ concentration on the photoluminescence of Na₄Ca(PO₃)₆ phosphors prepared by a solid-state reaction method." *Chemical Physics Impact*, 9, 100718. [Publisher: Elsevier] (Impact Factor: 5.2) DOI: <https://doi.org/10.1016/j.chphi.2024.100718>
- [18]. E. Lee, R.A. Harris, J.J. Terblans, E. Coetsee, V. Kumar, H.C. Swart (2024). "Preparation of SrVO₃ by annealing of Sr₂V₂O₇ in a reducing atmosphere." *Chemical Physics Impact*, 9, 100715. [Publisher: Elsevier] (Impact Factor: 5.2) DOI: <https://doi.org/10.1016/j.chphi.2024.100715>
- [19]. M. Sharma, H. Sharma, I. Charak, H.C. Swart, V. Kumar (2024). "Optimization and luminescence studies of Sm³⁺ doped LiCaBO₃ phosphors for high-performance white light-emitting diodes." *Chemical Physics Impact*, 9, 100696. [Publisher: Elsevier] (Impact Factor: 5.3) DOI: <https://doi.org/10.1016/j.chphi.2024.100696>
- [20]. I. Charak, M. Manhas, A.K. Bedyal, H.C. Swart, V. Kumar (2024). "Exploring the potential of Sm³⁺-doped Sr₂B₂O₅ phosphors for bridging the amber gap in w-LED application." *Displays*, 81, 102624. [Publisher: Elsevier] (Impact Factor: 4.3) DOI: <https://doi.org/10.1016/j.displa.2023.102624>
- [21]. [A.K. Bedyal, R. Singh, H.C. Swart, V. Kumar (2024). "Self-emitting yellow phosphor with enough quantum efficiency and thermal stability for light emitting diodes." *Chemical Physics Impact*, 9, 100739. [Publisher: Elsevier] (Impact Factor: 5.3) DOI: <https://doi.org/10.1016/j.chphi.2024.100739>
- [22]. B. Verma, J.J.L. Hmar, H.C. Swart, V. Kumar (2024). "Enhancement of electrical properties by CuS–PVP nanocomposite on the ZnO/polymer heterojunction." *Journal of the Chinese Chemical Society*, 71 (7), 672–683. [Publisher: Wiley] (Impact Factor: 2.0) DOI: <https://doi.org/10.1002/jccs.202400032>
- [23]. P. Khajuria, M. Manhas, A.K. Bedyal, A. Vij, H.C. Swart, V. Kumar (2024). "Crystal structure and luminescence dynamics of highly pure LiM(PO₃)₃:Eu³⁺ (M = Sr, Ca) red phosphors for white light emitting diodes." *Journal of Rare Earths*, 42 (8), 1470–1478. [Publisher: Elsevier] (Impact Factor: 9.6) DOI: <https://doi.org/10.1016/j.jre.2023.07.014>
- [24]. Rajan Singh, Mohit Manhas, Ankush Kumar Bedyal, Fahim Durani, Hendrick C. Swart, Vinay Kumar (2024). "Impact of ligand environment on optical, luminescence and thermometric behavior of A₃(PO₄)₂:Sm³⁺ (A = Ca, Sr) phosphors." *Luminescence*, 39 (1), e4665. [Publisher: Wiley] (Impact Factor: 3.7) DOI: <https://doi.org/10.1002/bio.4665>
- [25]. Rajan Singh, A.K. Bedyal, M. Manhas, F. Durani, H.C. Swart, Vinay Kumar (2024). "Effect of the synthesis route on luminescence dynamics and thermographic properties of Sm³⁺ doped Ba₂Mg(PO₄)₂ phosphor." *Journal of Alloys and Compounds*, 973, 172911. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2023.172911>
- [26]. Isha Charak, M. Manhas, A.K. Bedyal, Ankush Vij, H.C. Swart, Vinay Kumar (2023). "Color-tunable Dy³⁺/Sm³⁺ co-doped Sr₂B₂O₅ phosphors for warm white light-emitting diodes and plant growth applications." *Journal of Photochemistry and Photobiology A: Chemistry*, 444, 114948. [Publisher: Elsevier] (Impact Factor: 4.4) DOI: <https://doi.org/10.1016/j.jphotochem.2023.114948>
- [27]. Pankaj Biswas, Vinay Kumar, Kamni (2023). "KSrVO₄:Tb³⁺—A potential green-emitting nanophosphor candidate for white LEDs." *Journal of Materials Science: Materials in Electronics*, 34, 149. [Publisher: Springer] (Impact Factor: 3.2) DOI: <https://doi.org/10.1007/s10854-022-09571-3>
- [28]. Isha Charak, M. Manhas, A.K. Bedyal, Ankush Vij, H.C. Swart, Vinay Kumar (2023). "Synthesis, luminescence and photometric investigation of Sr₂B₂O₅:Dy³⁺ phosphor for UV-based white LEDs." *Applied Physics A*, 129, 222. [Publisher: Springer] (Impact Factor: 3.0) DOI: <https://doi.org/10.1007/s00339-023-06501-8>
- [29]. Rajan Singh, A.K. Bedyal, M. Manhas, H.C. Swart, Vinay Kumar (2022). "Charge compensated CaSr₂(PO₄)₂:Sm³⁺, Li⁺/Na⁺/K⁺ phosphor: Luminescence and thermometric studies." *Journal of Alloys and Compounds*, 901, 163793. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2022.163793>
- [30]. Rajan Singh, M. Manhas, A.K. Bedyal, F. Durani, H.C. Swart, Vinay Kumar (2022). "Thermometric and luminescence studies of Eu³⁺ activated CaSr₂(PO₄)₂ phosphor for non-contact optical thermometry and solid state lighting applications." *Materials Chemistry and*

Physics, **291**, 126735. [Publisher: Elsevier] (Impact Factor: 5.2) DOI: <https://doi.org/10.1016/j.matchemphys.2022.126735>

- [31]. S. Pathania, J.J.L. Hmar, B. Verma, T. Majumder, Vinay Kumar, P. Chinnamuthu (2022). "Titanium Dioxide (TiO₂) Sensitized Zinc Oxide (ZnO)/Conducting Polymer Nanocomposites for Improving Performance of Hybrid Flexible Solar Cells." *Journal of Electronic Materials*, **51**, 5986–6001. [Publisher: Springer] (Impact Factor: 2.8) DOI: <https://doi.org/10.1007/s11664-022-09827-0>
- [32]. Payal Khajuria, M. Manhas, A.K. Bedyal, Ankush Vij, H.C. Swart, Vinay Kumar (2022). "Structural and luminescence characterization of thermally stable orange-red emitting LiSrP₃O₉:Sm³⁺ phosphor to fill the amber gap in WLEDs." *Displays*, **75**, 102302. [Publisher: Elsevier] (Impact Factor: 4.3) DOI: <https://doi.org/10.1016/j.displa.2022.102302>
- [33]. Surbhi Pathania, Jehova Jire L. Hmar, Vinay Kumar, Onkar Nath Verma, Tanuj Kumar, Chinnamuthu Paulsamy (2022). "Gold (Au)-Doped Lead Sulfide-Polyvinyl Alcohol (PbS-PVA) Nanocomposites for High-Performance, Flexible Memristors." *Journal of Electronic Materials*, **51**, 4964–4977. [Publisher: Springer] (Impact Factor: 2.8) DOI: <https://doi.org/10.1007/s11664-022-09723-7>
- [34]. Payal Khajuria, M. Manhas, A.K. Bedyal, Ankush Vij, H.C. Swart, Vinay Kumar (2022). "Structural and spectral investigation of a near UV converted LiSrP₃O₉:Dy³⁺ phosphor for white light emitting diodes." *Journal of Materials Science: Materials in Electronics*, **33**, 6031–6042. [Publisher: Springer] (Impact Factor: 3.2) DOI: <https://doi.org/10.1007/s10854-022-07784-y>
- [35]. A.K. Bedyal, Vinay Kumar, H.C. Swart (2022). "Down/up-conversion luminescent properties of rare-earth activated orthovanadate phosphors: A comprehensive review." *Journal of Luminescence*, **248**, 118939. [Publisher: Elsevier] (Impact Factor: 3.8) DOI: <https://doi.org/10.1016/j.jlumin.2022.118939>
- [36]. A.K. Bedyal, Samvit G. Menon, Trilok Pathak, Vinay Kumar, Hendrik C. Swart (2021). "Sr₄Al₁₄O₂₅:Eu²⁺, Dy³⁺@ZnO nanocomposites as highly efficient visible light photocatalysts for the degradation of aqueous methyl orange." *Journal of Alloys and Compounds*, **860**, 158370. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2020.158370>
- [37]. Rubby Mahajan, Ram Prakash, Sandeep Kumar, Vinay Kumar, R.J. Choudhary, D.M. Phase (2021). "Surface and luminescent properties of Mg₃(PO₄)₂:Dy³⁺ phosphors." *Optik*, **225**, 165842. [Publisher: Elsevier] (Impact Factor: 2.8) DOI: <https://doi.org/10.1016/j.ijleo.2020.165842>
- [38]. Isha Charak, M. Manhas, Payal Khajuria, A.K. Bedyal, H.C. Swart, Vinay Kumar (2021). "Investigation of thermoluminescence response and kinetic parameters of CaMgB₂O₅:Tb³⁺ phosphor against UV-C radiation for dosimetric application." *Journal of Materials Science: Materials in Electronics*, **32**, 17418–17426. [Publisher: Springer] (Impact Factor: 3.2) DOI: <https://doi.org/10.1007/s10854-021-06283-y>
- [39]. Sumara Khursheed, Vinay Kumar, Jitendra Sharma et al. (2021). "Study of luminescence from terbium doped strontium borate nanophosphors in PMMA." *Applied Physics A*, **127**, 218. [Publisher: Springer] (Impact Factor: 3.0) DOI: <https://doi.org/10.1007/s00339-021-04351-4>
- [40]. [Payal Khajuria, A.K. Bedyal, M. Manhas, H.C. Swart, F. Durani, Vinay Kumar (2021). "Spectral, surface and thermometric investigations of upconverting Er³⁺/Yb³⁺ co-doped Na₃Y(PO₄)₂ phosphor." *Journal of Alloys and Compounds*, **877**, 160327. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2021.160327>
- [41]. Isha Charak, Vinay Kumar et al. (2021). "Structural and spectral studies of highly pure red-emitting Ca₃B₂O₆:Eu³⁺ phosphors for white light emitting diodes." *Journal of Alloys and Compounds*, **869**, 159300. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2021.159300>
- [42]. A.K. Bedyal, A.K. Kunti, Samvit G. Menon, Vinay Kumar, H.C. Swart (2020). "Red emitting non-rare earth doped LiMgBO₃ phosphor for light emitting diodes." *Journal of Alloys and Compounds*, **830**, 154622. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2020.154622>
- [43]. A.K. Bedyal, Vinay Kumar, H.C. Swart (2020). "Influence of an adjoining cation on the luminescence performance of the Dy³⁺ doped A₃Gd(PO₄)₂; (A = Na, K) phosphors." *Journal of Alloys and Compounds*, **847**, 156352. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2020.156352>

- [44]. Pankaj Biswas, Vinay Kumar, Kamni (2020). "The structural and spectral study of LiSrVO₄:Tb³⁺ phosphor for UV-shifted imaging devices." *Materials Today: Proceedings*, 28 (Part 2), 1018–1023. [Publisher: Elsevier] DOI: <https://doi.org/10.1016/j.matpr.2020.01.295>
- [45]. A.K. Bedyal, D.D. Ramteke, Vinay Kumar, H.C. Swart (2019). "Excitation wavelength and Eu³⁺/Tb³⁺ content ratio dependent tunable photo luminescence from NaSrBO₃:Eu³⁺/Tb³⁺ phosphor." *Journal of Materials Science: Materials in Electronics*, 30, 11714–11726. [Publisher: Springer] (Impact Factor: 3.2) DOI: <https://doi.org/10.1007/s10854-019-01533-3>
- [46]. Rubby Mahajan, Sandeep Kumar, Ram Prakash, Vinay Kumar, R.J. Choudhary, D.M. Phase (2019). "X-ray photoemission and spectral investigations of Dy³⁺ activated magnesium pyrophosphate phosphors." *Journal of Alloys and Compounds*, 777, 562–571. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2018.10.370>
- [47]. Sumara Khursheed, Pankaj Biswas, Vivek K. Singh, Vinay Kumar, H.C. Swart, Jitendra Sharma (2019). "Synthesis and optical studies of KCaVO₄:Sm³⁺/PMMA nanocomposites." *Vacuum*, 159, 414–422. [Publisher: Elsevier] (Impact Factor: 4.3) DOI: <https://doi.org/10.1016/j.vacuum.2018.10.065>
- [48]. Neharika, V.K. Singh, J. Sharma, A.K. Bedyal, Vinay Kumar, H.C. Swart (2018). "Surface and spectral studies of Sm³⁺ doped Li₄Ca(BO₃)₂ phosphors for white light emitting diodes." *Journal of Alloys and Compounds*, 738, 97–104. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2017.12.115>
- [49]. Neharika, J. Sharma, Vishal Sharma, A.K. Bedyal, H.C. Swart, Vinay Kumar (2018). "Synthesis and thermoluminescence studies of UV-C exposed Li₄Ca(BO₃)₂:Dy³⁺ phosphors." *Vacuum*, 156, 370–374. [Publisher: Elsevier] (Impact Factor: 4.3) DOI: <https://doi.org/10.1016/j.vacuum.2018.07.054>
- [50]. A.K. Bedyal, D.D. Ramteke, Vinay Kumar, H.C. Swart (2018). "Blue photons excited highly chromatic red light emitting K₃La(PO₄)₂:Pr³⁺ phosphors for white light emitting diodes." *Materials Research Bulletin*, 103, 173–180. [Publisher: Elsevier] (Impact Factor: 5.8) DOI: <https://doi.org/10.1016/j.materresbull.2018.03.027>
- [51]. Vishal Sharma, Raj Kumar, Karan Devgan, Pawan Kumar Mishra, Adam Ekielski, Vijay Kumar, Vinay Kumar (2018). "Multivariate analysis for forensic characterization, discrimination, and classification of marker pen inks." *Spectroscopy Letters*, 51 (5), 205–215. [Publisher: Taylor & Francis] (Impact Factor: 1.4) DOI: <https://doi.org/10.1080/00387010.2018.1449802>
- [52]. Pankaj Biswas, Vinay Kumar (2018). "A potential amber-emitting KCaVO₄:Sm³⁺ nanophosphor for near-UV LEDs." *AIP Conference Proceedings*, 1953, 030206. [Publisher: AIP Publishing] DOI: <https://doi.org/10.1063/1.5032541>
- [53]. Rubby Mahajan, Sandeep Kumar, Ram Prakash, Vinay Kumar (2018). "Synthesis and luminescent properties of Sm³⁺ doped zinc aluminate phosphor." *AIP Conference Proceedings*, 1953, 030209. [Publisher: AIP Publishing] DOI: <https://doi.org/10.1063/1.5032544>
- [54]. Ram Prakash, Sandeep Kumar, Rubby Mahajan, Pooja Khajuria, Vinay Kumar, R.J. Choudhary, D.M. Phase (2018). "Spectral properties of Dy³⁺ doped ZnAl₂O₄ phosphor." *AIP Conference Proceedings*, 1953, 030040. [Publisher: AIP Publishing] DOI: <https://doi.org/10.1063/1.5032375>
- [55]. Vinay Kumar, M. Manhas, A.K. Bedyal, H.C. Swart (2017). "Synthesis, spectral and surface investigation of novel CaMgB₂O₅:Dy³⁺ nanophosphor for UV based white LEDs." *Materials Research Bulletin*, 91, 140–147. [Publisher: Elsevier] (Impact Factor: 5.8) DOI: <https://doi.org/10.1016/j.materresbull.2017.03.029>
- [56]. A.K. Bedyal, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2017). "Investigation of thermoluminescence response and trapping parameters of 120 MeV Ag⁹⁺ and γ-ray exposed NaSrBO₃:Dy³⁺ phosphor for dosimetry." *Journal of Alloys and Compounds*, 691, 919–928. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2016.08.314>
- [57]. A.K. Bedyal, Vinay Kumar, H.C. Swart (2017). "Charge compensated derived enhanced red emission from Sr₃(VO₄)₂:Eu³⁺ nanophosphors for white light emitting diodes and flat panel displays." *Journal of Alloys and Compounds*, 709, 362–372. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2017.03.111>
- [58]. A.K. Bedyal, Vinay Kumar, H.C. Swart (2017). "Investigation of thermoluminescence characteristics of NaSrBO₃:Sm³⁺ phosphor against 120MeV Ag⁹⁺ ion and γ-ray irradiation prepared by different methods." *Journal of Luminescence*, 187, 499–506. [Publisher: Elsevier] (Impact Factor: 3.8) DOI: <https://doi.org/10.1016/j.jlumin.2017.03.056>

- [59]. Navdeep S. Jamwal, Mir Irfan Ul Haq, Ankush Raina, Ankush Anand, Vinay Kumar (2017). "Synthesis and tribological investigation of Al-SiC based nano hybrid composite." *Alexandria Engineering Journal*, 56 (4), 743–750. [Publisher: Elsevier] (Impact Factor: 6.4) DOI: <https://doi.org/10.1016/j.aej.2017.03.017>
- [60]. Raj Kumar, Vinay Kumar, Vishal Sharma (2017). "Fourier transform infrared spectroscopy and chemometrics for the characterization and discrimination of writing/photocopier paper types: Application in forensic document examinations." *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 170, 19–28. [Publisher: Elsevier] (Impact Factor: 4.8) DOI: <https://doi.org/10.1016/j.saa.2016.06.042>
- [61]. Vivek Kumar Singh, Anjana Devi, Surbhi Pathania, Vinay Kumar, Durgesh Kumar Tripathi, Shivesh Sharma, Devendra Kumar Chauhan, Virendra Kumar Singh, Vassilia Zorba (2017). "Spectroscopic investigation of wheat grains (*Triticum aestivum*) infected by wheat seed gall nematodes (*Anguina tritici*)." *Biocatalysis and Agricultural Biotechnology*, 9, 58–66. [Publisher: Elsevier] (Impact Factor: 4.6) DOI: <https://doi.org/10.1016/j.bcab.2016.11.007>
- [62]. Pankaj Biswas, Vinay Kumar, Naresh Padha, H.C. Swart (2017). "Synthesis, structural and luminescence studies of LiSrVO₄:Sm³⁺ nanophosphor to fill amber gap in LEDs under n-UV excitation." *Journal of Materials Science: Materials in Electronics*, 28, 6159–6168. [Publisher: Springer] (Impact Factor: 3.2) DOI: <https://doi.org/10.1007/s10854-016-6294-x>
- [63]. Jigmet Ladol, Heena Khajuria, Rajinder Singh, Vinay Kumar, Haq Nawaz Sheikh (2017). "Organic additive assisted hydrothermal synthesis and photoluminescence properties of CeF₃:Tb³⁺ and NaCeF₄:Tb³⁺ nanoparticles." *Journal of Materials Science: Materials in Electronics*, 28, 11671–11680. [Publisher: Springer] (Impact Factor: 3.2) DOI: <https://doi.org/10.1007/s10854-017-7002-3>
- [64]. Raj Kumar, Vishal Sharma, Neha Verma, Pawan Kumar Diwan, Vinay Kumar, Vijay Kumar (2017). "Analysis of writing/printing paper via thermogravimetric analysis: Application in forensic science." *Australian Journal of Forensic Sciences*, 51 (1), 21–32. [Publisher: Taylor & Francis] (Impact Factor: 1.1) DOI: <https://doi.org/10.1080/00450618.2017.1324584>
- [65]. A.K. Bedyal, Vinay Kumar, H.C. Swart (2017). "A potential green emitting citrate gel synthesized NaSrBO₃:Tb³⁺ phosphor for display application." *Physica B: Condensed Matter*, 535, 237–241. [Publisher: Elsevier] (Impact Factor: 3.2) DOI: <https://doi.org/10.1016/j.physb.2017.07.034>
- [66]. Pankaj Biswas, Vinay Kumar, Vishal Sharma, A.K. Bedyal, Naresh Padha, H.C. Swart (2017). "Potential of Sm³⁺ doped LiSrVO₄ nanophosphor to fill amber gap in LEDs." *Physica B: Condensed Matter*, 535, 246–250. [Publisher: Elsevier] (Impact Factor: 3.2) DOI: <https://doi.org/10.1016/j.physb.2017.07.040>
- [67]. Sumara Khursheed, Vinay Kumar, Vivek K. Singh, Jitendra Sharma, H.C. Swart (2017). "Optical properties of Sr₃B₂O₆:Dy³⁺/PMMA polymer nanocomposites." *Physica B: Condensed Matter*, 535, 242–245. [Publisher: Elsevier] (Impact Factor: 3.2) DOI: <https://doi.org/10.1016/j.physb.2017.07.033>
- [68]. Vishal Sharma, Amrita Das, Vijay Kumar, Vinay Kumar, Kartikey Verma, H.C. Swart (2017). "Combustion synthesis and characterization of blue long lasting phosphor CaAl₂O₄:Eu²⁺,Dy³⁺ and its novel application in latent fingerprint and lip mark detection." *Physica B: Condensed Matter*, 535, 128–132. [Publisher: Elsevier] (Impact Factor: 3.2) DOI: <https://doi.org/10.1016/j.physb.2017.07.019>
- [69]. Mohit Manhas, Vinay Kumar, Vivek K. Singh, Jitendra Sharma, Ram Prakash, Vishal Sharma, A.K. Bedyal, H.C. Swart (2017). "A novel orange-red emitting Ba₂Ca(BO₃)₂:Sm³⁺ phosphor to fill the amber gap in LEDs: Synthesis, structural and luminescence characterizations." *Current Applied Physics*, 17 (11), 1369–1375. [Publisher: Elsevier] (Impact Factor: 2.8) DOI: <https://doi.org/10.1016/j.cap.2017.07.013>
- [70]. Palvi Gupta, A.K. Bedyal, Vinay Kumar, Vivek K. Singh, Y. Khajuria, O.M. Ntwaeaborwa, H.C. Swart (2016). "Thermoluminescence and glow curves analysis of γ-exposed Eu³⁺ doped K₃Y(PO₄)₂ nanophosphors." *Materials Research Bulletin*, 73, 111–118. [Publisher: Elsevier] (Impact Factor: 5.8) DOI: <https://doi.org/10.1016/j.materresbull.2015.08.035>
- [71]. Vishal Sharma, Amrita Das, Vinay Kumar (2016). "Eu²⁺,Dy³⁺ codoped SrAl₂O₄ nanocrystalline phosphor for latent fingerprint detection in forensic applications." *Materials Research Express*, 3 (1), 015004. [Publisher: IOP Publishing] (Impact Factor: 2.7) DOI: <https://doi.org/10.1088/2053-1591/3/1/015004>

- [72]. Mohit Manhas, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2016). "Structural, surface and luminescence properties of Ca₃B₂O₆:Dy³⁺ phosphors." *Ceramics International*, 42 (5), 5743–5753. [Publisher: Elsevier] (Impact Factor: 6.0) DOI: <https://doi.org/10.1016/j.ceramint.2015.12.115>
- [73]. Neharika, Vinay Kumar, Jitendra Sharma, Vivek K. Singh, O.M. Ntwaeaborwa, H.C. Swart (2016). "Surface and spectral studies of green emitting Sr₃B₂O₆:Tb³⁺ phosphors." *Journal of Electron Spectroscopy and Related Phenomena*, 206, 52–57. [Publisher: Elsevier] (Impact Factor: 2.3) DOI: <https://doi.org/10.1016/j.elspec.2015.11.009>
- [74]. Nitin Kumar, Vinay Kumar, Jitendra Sharma (2016). "Relaxations in gelatin hydrogels probed by dynamic light scattering." *Advanced Materials Letters*, 7 (2), 136–143. [Publisher: VBRI Press] DOI: <https://doi.org/10.5185/amlett.2016.6041>
- [75]. Pankaj Biswas, Vinay Kumar, G. Agarwal, O.M. Ntwaeaborwa, H.C. Swart (2016). "NaSrVO₄:Sm³⁺—A n-UV convertible phosphor to fill the quantum efficiency gap for LED applications." *Ceramics International*, 42 (2), 2317–2323. [Publisher: Elsevier] (Impact Factor: 6.0) DOI: <https://doi.org/10.1016/j.ceramint.2015.10.027>
- [76]. A.K. Bedyal, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2016). "Effect of swift heavy ion irradiation on structural, optical and luminescence properties of SrAl₂O₄:Eu²⁺,Dy³⁺ nanophosphor." *Radiation Physics and Chemistry*, 122, 48–54. [Publisher: Elsevier] (Impact Factor: 3.5) DOI: <https://doi.org/10.1016/j.radphyschem.2016.01.018>
- [77]. B.B.S. Jaswal, Vinay Kumar, J. Sharma, P.K. Rai, M.A. Gondal, Bilal Gondal, V.K. Singh (2016). "Analysis of heterogeneous gallstones using laser-induced breakdown spectroscopy (LIBS) and wavelength dispersive X-ray fluorescence (WD-XRF)." *Lasers in Medical Science*, 31 (3), 573–579. [Publisher: Springer] (Impact Factor: 2.7) DOI: <https://doi.org/10.1007/s10103-016-1907-7>
- [78]. A.K. Bedyal, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2016). "Thermoluminescence response of 120MeV Ag⁹⁺ and γ-ray exposed LiMgBO₃:Dy³⁺ nanophosphors for dosimetry." *Ceramics International*, 42 (16), 18529–18535. [Publisher: Elsevier] (Impact Factor: 6.0) DOI: <https://doi.org/10.1016/j.ceramint.2016.08.190>
- [79]. Mohit Manhas, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2016). "Investigation of thermoluminescence and kinetic parameters of CaMgB₂O₅:Dy³⁺ nanophosphor." *AIP Conference Proceedings*, 1728, 020651. [Publisher: AIP Publishing] DOI: <https://doi.org/10.1063/1.4946702>
- [80]. Pankaj Biswas, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2016). "A novel orange-red emitting NaCaVO₄:Sm³⁺ phosphor for solid state lighting." *AIP Conference Proceedings*, 1728, 020552. [Publisher: AIP Publishing] DOI: <https://doi.org/10.1063/1.4946603>
- [81]. Vivek K. Singh, Vinay Kumar, Jitendra Sharma (2015). "Importance of laser-induced breakdown spectroscopy for hard tissues (bone, teeth) and other calcified tissue materials." *Lasers in Medical Science*, 30, 1763–1778. [Publisher: Springer] (Impact Factor: 2.7) DOI: <https://doi.org/10.1007/s10103-015-1773-y>
- [82]. A.K. Bedyal, Vinay Kumar, Ram Prakash, O.M. Ntwaeaborwa, H.C. Swart (2015). "A near UV-converted LiMgBO₃:Dy³⁺ nanophosphor: surface and spectral investigations." *Applied Surface Science*, 329, 40–46. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.apsusc.2014.12.115>
- [83]. Mohit Manhas, Vinay Kumar, G. Agarwal, O.M. Ntwaeaborwa, H.C. Swart (2015). "Crystal structure and kinetic studies of gamma exposed Ca₃B₂O₆:Tb³⁺ Nanophosphor." *Indian Journal of Physics*, 89, 899–906. [Publisher: Springer] (Impact Factor: 2.2) DOI: <https://doi.org/10.1007/s12648-015-0667-2>
- [84]. Pankaj Biswas, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2015). "Enhanced orange-red emission from K₂SrVO₄:Sm³⁺ nanophosphor for possible application in blue light-emitting diode based white LED." *Materials Research Express*, 2, 025010. [Publisher: IOP Publishing] (Impact Factor: 2.5) DOI: <https://doi.org/10.1088/2053-1591/2/2/025010>
- [85]. Ujval Gupta, V.K. Singh, Vinay Kumar, Yugal Khajuria (2015). "Experimental and Theoretical Spectroscopic Studies of Calcium Carbonate (CaCO₃)." *Materials Focus*, 4, 164–169. [Publisher: ASP] DOI: <https://doi.org/10.1166/mat.2015.1235>
- [86]. Mohit Manhas, Vinay Kumar, G. Agarwal, O.M. Ntwaeaborwa, H.C. Swart (2015). "Photoluminescence and thermoluminescence investigations of Ca₃B₂O₆:Sm³⁺ phosphor." *Materials Research Express*, 2, 075008. [Publisher: IOP Publishing] (Impact Factor: 2.5) DOI: <https://doi.org/10.1088/2053-1591/2/7/075008>

- [87]. Palvi Gupta, A.K. Bedyal, Vinay Kumar, Yugal Khajuria, Vishal Sharma, O.M. Ntwaeaborwa, H.C. Swart (2015). "Energy transfer mechanism from Gd³⁺ to Sm³⁺ in K₃Gd(PO₄)₂:Sm³⁺ Phosphor." *Materials Research Express*, 2, 076202. [Publisher: IOP Publishing] (Impact Factor: 2.5) DOI: <https://doi.org/10.1088/2053-1591/2/7/076202>
- [88]. [A.K. Bedyal, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2015). "Luminescence, optical and surface studies of green emitting KCaBO₃:Tb³⁺ nanophosphors." *International Journal of Luminescence and Applications*, 5, 47–50. [Publisher: LSI]
- [89]. Mohit Manhas, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2015). "Synthesis and thermoluminescence studies of gamma ray induced Ca₃B₂O₆:Bi³⁺ nanophosphor." *International Journal of Luminescence and Applications*, 5, 89–93. [Publisher: LSI]
- [90]. Vinay Kumar, A.K. Bedyal, O.M. Ntwaeaborwa, H.C. Swart (2015). "Orange-Red Emitting Pr³⁺ Doped NaSrBO₃ Nanophosphors: Luminescence and Optical Studies." *Materials Focus*, 4 (5), 362–365. [Publisher: ASP] DOI: <https://doi.org/10.1166/mat.2015.1264>
- [91]. Neharika, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2015). "Thermoluminescence and kinetic parameters of γ -exposed Sr₃B₂O₆:Sm³⁺ nanophosphors." *International Journal of Luminescence and Applications*, 5, 15–20. [Publisher: LSI]
- [92]. Raj Kumar, Vinay Kumar, Vishal Sharma (2015). "Discrimination of various paper types using diffuse reflectance ultraviolet–visible near-infrared (UV-VIS-NIR) spectroscopy: forensic application to questioned documents." *International Journal of Luminescence and Applications*, 69, 714–720. [Publisher: LSI]
- [93]. Sandeep Kumar, Ram Prakash, Vinay Kumar (2015). "A novel yellowish white Dy³⁺ activated α -Al₂O₃ phosphor: photoluminescence and optical studies." *Functional Materials Letters*, 8, 1550061. [Publisher: World Scientific] (Impact Factor: 2.2) DOI: <https://doi.org/10.1142/S179360471550061X>
- [94]. Sandeep Kumar, Ram Prakash, Vinay Kumar, G.M. Bhalerao, R.J. Choudhary, D.M. Phase (2015). "Surface and spectral studies of Eu³⁺ doped α -Al₂O₃ synthesized via solution combustion synthesis." *Advanced Powder Technology*, 26, 1263–1268. [Publisher: Elsevier] (Impact Factor: 4.8) DOI: <https://doi.org/10.1016/j.appt.2015.06.009>
- [95]. B.B.S. Jaswal, J. Sharma, Vinay Kumar, Y. Khajuria, V.K. Singh, P.K. Rai (2015). "Elemental and Molecular Analysis of Gallstones using Wave-Dispersive X-Ray Fluorescence and Fourier Transform Infra-red Spectroscopy." *Advanced Science Letters*, 21, 2613–2617. [Publisher: ASP] DOI: <https://doi.org/10.1166/asl.2015.6322>
- [96]. Ujval Gupta, Vivek K. Singh, Vinay Kumar, Yugal Khajuria (2015). "A combined experimental and density functional theory computational studies on curcumin: A bio-active ingredient of rhizome turmeric." *Materials Focus*, 4, 346–356. [Publisher: ASP] DOI: <https://doi.org/10.1166/mat.2015.1260>
- [97]. P.P. Mokoena, M.L. Chithambo, Vinay Kumar, H.C. Swart, O.M. Ntwaeaborwa (2015). "Thermoluminescence of calcium phosphate co-doped with gadolinium and praseodymium." *Radiation Measurements*, 77, 26–33. [Publisher: Elsevier] (Impact Factor: 1.8) DOI: <https://doi.org/10.1016/j.radmeas.2015.04.008>
- [98]. Mohit Manhas, Vinay Kumar, Vishal Sharma, O.M. Ntwaeaborwa, H.C. Swart (2015). "Effect of alkali metal ions (Li⁺, Na⁺ and K⁺) on the luminescence properties of CaMgB₂O₅:Sm³⁺ nanophosphor." *Nano-Structures & Nano-Objects*, 3, 9–16. [Publisher: Elsevier] (Impact Factor: 8.5) DOI: <https://doi.org/10.1016/j.nanoso.2015.08.001>
- [99]. Ujval Gupta, Vinay Kumar, Vivek K. Singh, Rajni Kant, Yugal Khajuria (2015). "Spectroscopic studies and quantum chemical investigations of (3,4-dimethoxybenzylidene) propanedinitrile." *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 140, 65–73. [Publisher: Elsevier] (Impact Factor: 4.4) DOI: <https://doi.org/10.1016/j.saa.2014.12.067>
- [100]. Brij Bir S. Jaswal, Vinay Kumar, H.C. Swart, Jitendra Sharma, Pradeep K. Rai, Vivek K. Singh (2015). "Multi-spectroscopic analysis of cholesterol gallstone using TOF-SIMS, FTIR and UV–Vis spectroscopy." *Applied Physics B*, 121, 49–56. [Publisher: Springer] (Impact Factor: 2.1) DOI: <https://doi.org/10.1007/s00340-015-6200-7>
- [101]. Neharika, Vinay Kumar, Jitendra Sharma, O.M. Ntwaeaborwa, H.C. Swart (2015). "Surface and thermoluminescence study of Dy³⁺ doped Sr₃B₂O₆ nanocrystalline phosphors." *Advanced Materials Letters*, 6 (5), 402–406. [Publisher: VBRI Press] DOI: <https://doi.org/10.5185/amlett.2015.5779>

- [102]. A.K. Bedyal, Vinay Kumar, Vivek K. Singh, Fouran Singh, S.P. Lochab, O.M. Ntwaeaborwa, H.C. Swart (2015). "The influence of Ag⁹⁺ ion irradiation on the structural, optical and luminescence properties of Sm³⁺ doped NaSrBO₃: Stability of color emission." *Nuclear Instruments and Methods in Physics Research Section B*, **351**, 27–34. [Publisher: Elsevier] (Impact Factor: 1.8) DOI: <https://doi.org/10.1016/j.nimb.2015.03.045>
- [103]. Vinay Kumar, A.K. Bedyal, Jitendra Sharma, Vijay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2014). "Spectral and surface investigations of Ca₂V₂O₇:Eu³⁺ nanophosphors prepared by citrate-gel combustion method: a potential red-emitting phosphor for near UV light-emitting diodes." *Applied Physics A*, **116**, 1785–1792. [Publisher: Springer] (Impact Factor: 3.0) DOI: <https://doi.org/10.1007/s00339-014-8353-8>
- [104]. P.P. Mokoena, Mukut Gohain, Vinay Kumar, B. Bezuidenhoudt, Hendrik C. Swart, O.M. Ntwaeaborwa (2014). "TOF SIMS analysis and enhanced UVB photoluminescence by energy transfer from Pr³⁺ to Gd³⁺ in Ca₃(PO₄)₂:Gd³⁺,Pr³⁺ phosphor prepared by urea assisted combustion." *Journal of Alloys and Compounds*, **595**, 33–38. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2014.01.076>
- [105]. Palvi Gupta, A.K. Bedyal, Vinay Kumar, Yugal Khajuria, Vinod Kumar, E. Coetsee-Hugo, O.M. Ntwaeaborwa, H.C. Swart (2014). "Spectral and surface investigations on Eu³⁺ doped K₃Y(PO₄)₂ nanophosphor: A promising orange–red phosphor for white light-emitting diodes." *Optical Materials*, **36** (5), 996–1001. [Publisher: Elsevier] (Impact Factor: 4.8) DOI: <https://doi.org/10.1016/j.optmat.2013.12.046>
- [106]. Ujval Gupta, V.K. Singh, Vinay Kumar, Yugal Khajuria (2014). "Spectroscopic studies of cholesterol: Fourier transform infrared and vibrational frequency analysis." *Materials Focus*, **3**, 211–217. [Publisher: ASP] DOI: <https://doi.org/10.1166/mat.2014.1160>
- [107]. Palvi Gupta, A.K. Bedyal, Vinay Kumar, Yugal Khajuria, S.P. Lochab, S.S. Pitale, O.M. Ntwaeaborwa, H.C. Swart (2014). "Photoluminescence and thermoluminescence properties of Tb³⁺ doped K₃Gd(PO₄)₂ nanophosphor." *Materials Research Bulletin*, **60**, 401–411. [Publisher: Elsevier] (Impact Factor: 5.8) DOI: <https://doi.org/10.1016/j.materresbull.2014.08.055>
- [108]. H.C. Swart, J.J. Terblans, O.M. Ntwaeaborwa, R.E. Kroon, E. Coetsee, I.M. Nagpure, Vijay Kumar, Vinod Kumar, Vinay Kumar (2014). "Applications of AES, XPS and TOF SIMS to phosphor materials." *Surface and Interface Analysis*, **46**, 1105–1109. [Publisher: Wiley] (Impact Factor: 1.8) DOI: <https://doi.org/10.1002/sia.5501>
- [109]. A.K. Bedyal, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2014). "A promising orange-red emitting nanocrystalline NaCaBO₃:Sm³⁺ phosphor for solid state lighting." *Materials Research Express*, **1** (1), 015006. [Publisher: IOP Publishing] (Impact Factor: 2.1) DOI: <https://doi.org/10.1088/2053-1591/1/1/015006>
- [110]. Vivek K. Singh, Vinay Kumar, Jitendra Sharma, Yugal Khajuria, Kaushal Kumar (2014). "Importance of Laser Induced Breakdown Spectroscopy for Biomedical Applications: A Comprehensive Review." *Materials Focus*, **3**, 169–182. [Publisher: ASP] DOI: <https://doi.org/10.1166/mat.2014.1163>
- [111]. Mohit Manhas, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2014). "Synthesis and photoluminescence properties of Ca₃B₂O₆:Tb³⁺ nanophosphors." *AIP Conference Proceedings*, **1591**, 502–504. [Publisher: AIP Publishing] DOI: <https://doi.org/10.1063/1.4872652>
- [112]. Neharika, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2014). "Synthesis and photoluminescence study of Dy³⁺ doped Sr₃B₂O₆ Nanophosphors." *AIP Conference Proceedings*, **1591**, 558–560. [Publisher: AIP Publishing] DOI: <https://doi.org/10.1063/1.4872674>
- [113]. Vinod Kumar, S. Som, Vijay Kumar, Vinay Kumar, O.M. Ntwaeaborwa, E. Coetsee, H.C. Swart (2014). "Tunable and white emission from ZnO:Tb³⁺ nanophosphors for solid state lighting applications." *Chemical Engineering Journal*, **255**, 541–552. [Publisher: Elsevier] (Impact Factor: 13.3) DOI: <https://doi.org/10.1016/j.cej.2014.06.059>
- [114]. Vishal Sharma, Amrita Das, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2014). "Potential of Sr₄Al₁₄O₂₅:Eu²⁺,Dy³⁺ inorganic oxide-based nanophosphor in latent fingerprint detection." *Journal of Materials Science*, **49** (5), 2225–2234. [Publisher: Springer] (Impact Factor: 3.8) DOI: <https://doi.org/10.1007/s10853-013-7917-0>
- [115]. P.P. Mokoena, I.M. Nagpure, Vinay Kumar, R.E. Kroon, E.J. Olivier, J.H. Neethling, H.C. Swart, O.M. Ntwaeaborwa (2014). "Enhanced UVB emission and analysis of chemical states of

Ca₅(PO₄)₃OH:Gd³⁺,Pr³⁺ phosphor prepared by co-precipitation." *Journal of Physics and Chemistry of Solids*, **75**, 998–1003. [Publisher: Elsevier] (Impact Factor: 4.0) DOI: <https://doi.org/10.1016/j.jpcs.2014.04.015>

- [116]. A.K. Bedyal, Vinay Kumar, Vishal Sharma, Fouran Singh, S.P. Lochab, O.M. Ntwaeaborwa, H.C. Swart (2014). "Swift heavy ion induced structural, optical and luminescence modification in NaSrBO₃:Dy³⁺ phosphor." *Journal of Materials Science*, **49**, 6404–6412. [Publisher: Springer] (Impact Factor: 3.8) DOI: <https://doi.org/10.1007/s10853-014-8368-2>
- [117]. Vinay Kumar, A.K. Bedyal, S.S. Pitale, O.M. Ntwaeaborwa, H.C. Swart (2013). "Synthesis, spectral and surface investigation of NaSrBO₃:Sm³⁺ phosphor for full color down conversion in LEDs." *Journal of Alloys and Compounds*, **554**, 214–220. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2012.11.082>
- [118]. Ankush Vij, S. Gautam, Vinay Kumar, R. Brajpuriya, R. Kumar, N. Singh, K.H. Chae (2013). "X-ray absorption spectroscopy and photoluminescence study of rare earth ions doped strontium sulphide phosphors." *Applied Surface Science*, **264**, 237–241. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.apsusc.2012.10.007>
- [119]. A.K. Bedyal, Vinay Kumar, Vishal Sharma, S.S. Pitale, E. Coetsee, M.M. Duvenhage, O.M. Ntwaeaborwa, H.C. Swart (2013). "Spectral and surface investigations of Mn²⁺ doped SrZnO₂ nanocrystalline phosphors." *Journal of Materials Science*, **48** (9), 3327–3334. [Publisher: Springer] (Impact Factor: 3.8) DOI: <https://doi.org/10.1007/s10853-012-7115-3>
- [120]. Vinay Kumar, A.K. Bedyal, H.C. Swart, O.M. Ntwaeaborwa (2013). "Spectral and surface investigations on SrZnO₂:Tb³⁺ nanophosphors." *Journal of Integrated Science and Technology*, **1** (1), 19–22. [Publisher: IS Publications]
- [121]. A.K. Bedyal, Vinay Kumar, V.K. Singh, S.P. Lochab, F. Singh, O.M. Ntwaeaborwa (2013). "Thermo-luminescence kinetic parameters of γ-irradiated Sr₄Al₁₄O₂₅:Eu²⁺,Dy³⁺ phosphors." *Radiation Effects and Defects in Solids*, **168**, 1022–1029. [Publisher: Taylor & Francis] (Impact Factor: 1.7) DOI: <https://doi.org/10.1080/10420150600868205>
- [122]. V.K. Singh, B.B.S. Jaswal, Vinay Kumar, Ram Prakash, P.K. Rai (2013). "Application of He-Ne Laser to Study of the Variation of Refractive Index of Liquid Solutions with the Concentration." *Journal of Integrated Science and Technology*, **1** (1), 13–18. [Publisher: IS Publications]
- [123]. A.K. Bedyal, Vinay Kumar, Vishal Sharma, O.M. Ntwaeaborwa, H.C. Swart (2013). "Luminescence and surface properties of Tb³⁺ doped Sr₃(VO₄)₂ nanophosphors." *Journal of Integrated Science and Technology*, **1** (1), 5–8. [Publisher: IS Publications]
- [124]. A.K. Bedyal, Vinay Kumar, S.P. Lochab, F. Singh, O.M. Ntwaeaborwa, H.C. Swart (2013). "Thermoluminescence Response of Gamma Irradiated SrAl₂O₄:Eu²⁺/Dy³⁺ Nanophosphor." *International Journal of Modern Physics: Conference Series*, **22**, 365–373. [Publisher: World Scientific] DOI: <https://doi.org/10.1142/S2010194513010386>
- [125]. I.M. Nagpure, S.J. Dhoble, Manoj Mohapatra, Vinay Kumar, Shreyas S. Pitale, O.M. Ntwaeaborwa, S.V. Godbole, H.C. Swart (2011). "Dependence of Eu³⁺ luminescence dynamics on the structure of the combustion synthesized Sr₅(PO₄)₃F host." *Journal of Alloys and Compounds*, **509** (5), 2544–2551. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2010.11.082>
- [126]. S.S. Pitale, Vinay Kumar, I.M. Nagpure, O.M. Ntwaeaborwa, E. Coetsee, H.C. Swart (2011). "Cathodoluminescent properties and surface characterization of bluish-white LiAl₅O₈:Tb phosphor." *Journal of Applied Physics*, **109** (1), 013105. [Publisher: AIP Publishing] (Impact Factor: 2.8) DOI: <https://doi.org/10.1063/1.3530634>
- [127]. S.S. Pitale, Vinay Kumar, I.M. Nagpure, O.M. Ntwaeaborwa, H.C. Swart (2011). "Luminescence characterization and electron beam induced chemical changes on the surface of ZnAl₂O₄:Mn nanocrystalline phosphor." *Applied Surface Science*, **257** (8), 3298–3306. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.apsusc.2010.11.009>
- [128]. S.S. Pitale, I.M. Nagpure, Vinay Kumar, O.M. Ntwaeaborwa, J.J. Terblans, H.C. Swart (2011). "Investigations on the low voltage cathodoluminescence stability and surface chemical behaviour using Auger and X-ray photoelectron spectroscopy on LiSrBO₃:Sm³⁺ phosphor." *Materials Research Bulletin*, **46** (7), 987–994. [Publisher: Elsevier] (Impact Factor: 5.8) DOI: <https://doi.org/10.1016/j.materresbull.2011.03.023>
- [129]. S.S. Pitale, Vinay Kumar, I. Nagpure, O.M. Ntwaeaborwa, H.C. Swart (2011). "Luminescence investigations on LiAl₅O₈:Tb³⁺ nanocrystalline phosphors." *Current Applied Physics*, **11** (3), 341–345. [Publisher: Elsevier] (Impact Factor: 2.8) DOI: <https://doi.org/10.1016/j.cap.2010.07.030>

- [130]. I.M. Nagpure, Shreyas S. Pitale, K.G. Tshabalala, Vinay Kumar, O.M. Ntwaeaborwa, J.J. Terblans, H.C. Swart (2011). "Luminescence response and CL degradation of combustion synthesized spherical SiO₂:Ce nanophosphor." *Materials Research Bulletin*, **46** (12), 2359–2366. [Publisher: Elsevier] (Impact Factor: 5.3) DOI: <https://doi.org/10.1016/j.materresbull.2011.08.058>
- [131]. Vinay Kumar, Shreyas S. Pitale, I.M. Nagpure, J.J. Terblans, O.M. Ntwaeaborwa, H.C. Swart (2010). "A surface chemical behaviour investigation of a promising low voltage cathodoluminescent LiSrBO₃:Sm³⁺ phosphor." *Luminescence*, **25** (3), 218–224. [Publisher: Wiley] (Impact Factor: 3.1) DOI: <https://doi.org/10.1002/bio.1165>
- [132]. Vinay Kumar, Varun Mishra, S.S. Pitale, M.M. Biggs, I.M. Nagpure, O.M. Ntwaeaborwa, H.C. Swart (2010). "Surface chemical reactions during electron beam irradiation of nanocrystalline CaS:Ce³⁺ phosphor." *Journal of Applied Physics*, **107** (12), 123533. [Publisher: AIP Publishing] (Impact Factor: 2.7) DOI: <https://doi.org/10.1063/1.3448232>
- [133]. Vinay Kumar, S.S. Pitale, M.M. Biggs, I.M. Nagpure, O.M. Ntwaeaborwa, H.C. Swart (2010). "Synthesis of Ce³⁺ doped SrS nanocrystalline phosphors using a simple aqueous method." *Materials Letters*, **64**, 752–754. [Publisher: Elsevier] (Impact Factor: 2.7) DOI: <https://doi.org/10.1016/j.matlet.2009.12.056>
- [134]. Vinay Kumar, Varun Mishra, M.M. Biggs, I.M. Nagpure, O.M. Ntwaeaborwa, J.J. Terblans, H.C. Swart (2010). "Electron beam induced green luminescence and degradation study of CaS:Ce nanocrystalline phosphors for FED Applications." *Applied Surface Science*, **256**, 1720–1724. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.apsusc.2009.09.100>
- [135]. H.C. Swart, J.J. Terblans, E. Coetsee, Vinay Kumar, O.M. Ntwaeaborwa, M.M. Biggs (2010). "Auger electron spectroscopy and X-ray photoelectron spectroscopy study of the electron-stimulated surface chemical reaction mechanism for phosphor degradation." *Surface and Interface Analysis*, **42**, 922–926. [Publisher: Wiley] (Impact Factor: 2.7) DOI: <https://doi.org/10.1002/sia.3245>
- [136]. O.M. Ntwaeaborwa, P.D. Nsimama, Shreyas Pitale, I.M. Nagpure, Vinay Kumar (2010). "Photoluminescence properties of SrAl₂O₄:Eu²⁺, Dy³⁺ thin phosphor films grown by pulsed laser deposition." *Journal of Vacuum Science & Technology A*, **28** (4), 901–905. [Publisher: AVS] (Impact Factor: 2.3) DOI: <https://doi.org/10.1116/1.3357283>
- [137]. I.M. Nagpure, K.N. Shinde, Vinay Kumar, O.M. Ntwaeaborwa, S.J. Dhoble, H.C. Swart (2010). "Combustion synthesis and luminescence investigation of Na₃Al₂(PO₄)₃:RE (RE = Ce³⁺, Eu³⁺ and Mn²⁺) phosphor." *Journal of Alloys and Compounds*, **492**, 384–388. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2009.11.127>
- [138]. Vinay Kumar, S.S. Pitale, V. Mishra, I.M. Nagpure, M.M. Biggs, O.M. Ntwaeaborwa, H.C. Swart (2010). "Luminescence investigations of Ce³⁺ doped CaS nanophosphors." *Journal of Alloys and Compounds*, **492**, L8–L12. [Publisher: Elsevier] (Impact Factor: 6.7) DOI: <https://doi.org/10.1016/j.jallcom.2009.11.134>
- [139]. O.M. Ntwaeaborwa, R.E. Kroon, Vinay Kumar, T. Dubroca, J.-P. Ahn, J.-K. Park, H.C. Swart (2009). "Ex situ synthesis and optical properties of ZnO–PbS nano composites." *Journal of Physics and Chemistry of Solids*, **70** (11), 1438–1442. [Publisher: Elsevier] (Impact Factor: 5.9) DOI: <https://doi.org/10.1016/j.jpcs.2009.08.016>
- [140]. Amrita Saxena, D.N.S. Srivastava, Suruchi Sharma, Seema Thakur, Vinay Kumar, O.M. Ntwaeaborwa, H.C. Swart (2009). "Peculiar feature of KCl + SbCl₃ phosphors: PL and XRD studies." *Journal of Modern Optics*, **56** (17), 1880–1884. [Publisher: Taylor & Francis] (Impact Factor: 1.4) DOI: <https://doi.org/10.1080/09500340903335010>
- [141]. Vinay Kumar, H.C. Swart, O.M. Ntwaeaborwa, Ravi Kumar, S.P. Lochab, Varun Mishra, Nafa Singh (2009). "Thermoluminescence response of CaS:Bi³⁺ nanophosphor exposed to 200MeV Ag¹⁵ ion beam." *Optical Materials*, **32** (1), 164–168. [Publisher: Elsevier] (Impact Factor: 4.3) DOI: <https://doi.org/10.1016/j.optmat.2009.07.001>
- [142]. Vinay Kumar, Ravi Kumar, S.P. Lochab, Nafa Singh (2007). "Swift heavy ion induced structural modification and photo-luminescence in CaS:Bi nanophosphors." *Journal of Nanoparticle Research*, **9** (4), 661–667. [Publisher: Springer] (Impact Factor: 3.5) DOI: <https://doi.org/10.1007/s11051-006-9195-2>
- [143]. Vinay Kumar, Ravi Kumar, S.P. Lochab, Nafa Singh (2007). "Effect of swift heavy ion irradiation on nanocrystalline CaS:Bi phosphors: Structural, optical and luminescence studies." *Nuclear Instruments and Methods in Physics Research Section B*, **262**, 194–200. [Publisher: Elsevier] (Impact Factor: 1.5) DOI: <https://doi.org/10.1016/j.nimb.2007.04.288>

- [144]. Vinay Kumar, R. Kumar, S.P. Lochab, N. Singh (2006). "Thermoluminescence studies of CaS:Bi nanocrystalline phosphors." *Journal of Physics D: Applied Physics*, 39 (24), 5137–5142. [Publisher: IOP Publishing] (Impact Factor: 3.2) DOI: <https://doi.org/10.1088/0022-3727/39/24/007>
- [145]. Vinay Kumar, N. Singh, R. Kumar, S.P. Lochab (2006). "Synthesis and characterization of bismuth doped calcium sulfide nanocrystallites." *Journal of Physics: Condensed Matter*, 18 (22), 5029–5037. [Publisher: IOP Publishing] (Impact Factor: 2.3) DOI: <https://doi.org/10.1088/0953-8984/18/22/004>
- [146]. Vinay Kumar, R. Kumar, S.P. Lochab, N. Singh (2006). "Thermoluminescence and dosimetric properties of bismuth doped CaS nanocrystalline phosphor." *Radiation Effects and Defects in Solids*, 161 (8), 479–485. [Publisher: Taylor & Francis] (Impact Factor: 1.6) DOI: <https://doi.org/10.1080/10420150600868205>

8. BOOKS, BOOK CHAPTERS & EDITED CONFERENCE VOLUMES

- [1]. [BOOK] "Concept of Electrodynamics". Authors/Editors: Vinay Kumar (Author). Narosa Publishers, New Delhi (2015). ISBN: 978-81-8487
- [2]. [BOOK CHAPTER] "Combustion Synthesis and Characterization of Inorganic nano-Crystalline SrAl₂O₄:Eu³⁺: Its Application in Detection of Latent Fingerprints". In: *Nanotechnology: novel perspectives and prospects, Edition: I*. Tata-McGraw Hill (2015). ISBN: ISBN (10): 9339221095
- [3]. [BOOK CHAPTER] "Photo luminescent Characteristics of Terbium Doped CaMgB₂O₅ Green Nanophosphor". In: *Nanotechnology: novel perspectives and prospects, Edition: I*. Tata-McGraw Hill (2015). ISBN: ISBN (10): 9339221095
- [4]. [BOOK CHAPTER] "Chapter 3: Recent Developments and Applications of Novel Analytical Techniques for the Analysis of Plant Materials". In: *Technological Advancements in Plant Sciences*. Nova Publisher, New York (2017). ISBN: ISBN: 978-1-53610-004-4
- [5]. [CONFERENCE PROCEEDINGS VOLUME] "National Conference on Recent Advances in Experimental and Theoretical Physics (RAETP 2018)". Authors/Editors: Edited by: Vinay Kumar, Amit Tomar, and Suram Singh. AIP Conference Proceedings (2018). ISBN: ISBN: 9780735417229

9. CONFERENCE PAPERS PRESENTED (21 PRESENTATIONS)

- 1. "Luminescence and Characterization of bismuth doped calcium sulfide nano-particles". Authors: Vinay Kumar, Nafa Singh, Ravi Kumar and SP Lochab. *National Conference on Advanced Characterization Techniques On Nano-material (ACTON-2005), I.I.T. Roorkee, Aug 24-26, 2005*.
- 2. "Photoluminescence of calcium sulfide nano phosphors doped with bismuth". Authors: Nafa Singh, Vinay Kumar. *50th DAE-Solid State Physics Symposium-2005, Vol 50 (2005), p 203*.
- 3. "Analysis of TL glow curves of bismuth doped CaS nanophosphors exposed to UV- and γ -radiation". Authors: Vinay Kumar, Ravi Kumar, SP Lochab and Nafa Singh. *National Conference on Recent Advances in Material Science (RAMS-06), Department of Physics, Kurukshetra University, Kurukshetra, Sep 27-29, 2006*.
- 4. "Structural modifications by 100MeV O⁷⁺ ion irradiation in CaS:Bi nanophosphors". Authors: Vinay Kumar, Ravi Kumar, SP Lochab and Nafa Singh. *National Conference on Recent Advances in Material Science (RAMS-06), Department of Physics, Kurukshetra University, Kurukshetra, Sep 27-29, 2006*.
- 5. "Luminescence in swift heavy ion irradiated CaS:Bi nanophosphors". Authors: Vinay Kumar, Ravi Kumar, SP Lochab and Nafa Singh. *51st DAE-Solid State Physics Symposium-2006, Vol 51 (2006), p 257*.
- 6. "Swift heavy ion in CaS:Bi nanophosphors: a thermoluminescence study". Authors: Vinay Kumar, Ravi Kumar, SP Lochab and Nafa Singh. *National Conference on Accelerator and Low Level Radiation Safety, Inter-University Accelerator Centre (IUAC), New Delhi, April 26-27, 2007*.
- 7. "UV and PL Study of swift heavy ion irradiated CaS:Bi nanophosphors". Authors: Vinay Kumar, Ravi Kumar, SP Lochab and Nafa Singh. *52nd DAE-Solid State Physics Symposium-2007, Vol 52 (2007), p 397*.
- 8. "Swift heavy ion induced modification in alkaline earth sulfide". Authors: Natasha Arora, Vinay Kumar. *National Conference on Materials Science, DAV College, Jalandhar, Feb 16-19, 2009*.

9. **"Preparation and Luminescence of CaS:Ce³⁺ nanophosphors"**. Authors: Vinay Kumar, Varun Mishra, H.C. Swart, O. M. Ntwaeaborwa. *South African Institute of Physics (SAIP) Conference, University of Kwazulu-Natal, Durban, South Africa, July 6-10, 2009.*
10. **"Luminescence and Electron beam induced degradation in Alkaline earth sulfide based nanophosphors"**. Authors: Vinay Kumar, S. Pitale, O. M. Ntwaeaborwa, H. C. Swart. *International Conference on Nanomaterials, M.G. University, Kottayam, Kerala, April 27-29, 2010.*
11. **"Surface chemical reactions on alkali aluminate nanophosphors"**. Authors: S. Pitale, Vinay Kumar, O. M. Ntwaeaborwa, H. C. Swart. *International Conference on Nanomaterials, M.G. University, Kottayam, Kerala, April 27-29, 2010.*
12. **"Combustion synthesis of long after glow SrAl₂O₄:Eu,Dy nanophosphors"**. Authors: Vinay Kumar, Vishal Sharma. *Professor Ram Chand Paul International Conference, Department of Chemistry, Panjab University, Chandigarh, Feb 11-12, 2011.*
13. **"Combustion synthesis of long after glow nanophosphors and their potential application in Latent Fingerprint detection"**. Authors: Vinay Kumar, Vishal Sharma. *International Conference on Advanced and Nano Materials (ICAN-2011), Department of Physics, Panjab University, Chandigarh, Feb 22-26, 2011.*
14. **"Synthesis & Characterization of nano Phosphor for Forensic Application in Fingerprint detection"**. Authors: Vinay Kumar, Vishal Sharma. *5th Chandigarh Science Congress (CHASCON 2011) – "Building gateways to sustainable green communities", Section of Environment, Public Health & Forensic Science, Panjab University, Feb 26-28, 2011.*
15. **"Thermoluminescence response of gamma irradiated SrAl₂O₄:Eu²⁺/Dy³⁺ nanophosphor"**. Authors: A.K. Bedyal, S.P. Lochab, F. Singh, O.M. Ntwaeaborwa, H.C. Swart. *International Conferences on Ceramics, Govt. Engineering College Bikaner, Dec 12-13, 2012.*
16. **"Combustion synthesis and characterization of SrAl₂O₄:Eu nanophosphors: its applications in detection of latent fingerprint"**. Authors: Vishal Sharma, A. Das, Vinay Kumar. *International Conference on Nanotechnology in the Service of Health, Environment and Society (NanoSciTech 2014), Panjab University Chandigarh, Feb 13-15, 2014.*
17. **"A Novel Orange-red Emitting NaCaVO₄:Sm³⁺ Phosphor For Solid State Lighting"**. Authors: Pankaj Biswas, Vinay Kumar, O. M. Ntwaeaborwa and H. C. Swart. *International Conferences on Ceramics, Govt. Engineering College Bikaner, Oct 30-31, 2015.*
18. **"Thermoluminescence and kinetic parameters investigation of CaMgB₂O₅:Dy³⁺ nanophosphor"**. Authors: M. Manhas, Vinay Kumar, O. M. Ntwaeaborwa and H.C. Swart. *International Conferences on Ceramics, Govt. Engineering College Bikaner, Oct 30-31, 2015.*
19. **"Thermoluminescence response and kinetic parameters of UV irradiated K₃La(PO₄)₂:Pr³⁺ phosphor"**. Authors: A. K. Bedyal, Vinay Kumar, and H. C. Swart. *AIP Conference Proceedings, Volume 2006, 020001, 2018.*
20. **"Synthesis and luminescent properties of Sm³⁺ activated lithium zinc borate phosphor"**. Authors: Rubby Mahajan, Sandeep Kumar, Ram Prakash, and Vinay Kumar. *AIP Conference Proceedings, Volume 2006, 030045, 2018.*
21. **"Spectroscopic analysis of rhizomes of black turmeric (Curcuma caesia)"**. Authors: Neha Sharma, Yugal Khajuria, Jitendra Sharma, Mohammad A. Gondal, Vinay Kumar, Y. Dwivedi, and Vivek K. Singh. *AIP Conference Proceedings, Volume 2006, 030036, 2018.*

10. INVITED KEYNOTE LECTURES & RESOURCE PERSON ENGAGEMENTS (17 LECTURES)

1. **[NATIONAL] "Introduction to thermoluminescence and its applications"**. Lecture organized by Physics Association of Sanatan Dharma College, Ambala Cantt, May 14, 2022.
2. **[NATIONAL] "Advances of inorganic oxide-based nanophosphor for forensic and solid state lighting"**. AICTE sponsored one-week Faculty Training Program on Recent Trends in Physics of Engineering Materials, Dept. of Physics, Deenbandhu Chhotu Ram University of Science & Technology (DCRUST), Murthal, Haryana, June 7–12, 2021.
3. **[NATIONAL] "Recent developments in phosphors for Solid State lighting Applications"**. Regional e-Symposium on Physics 2020 conducted by Department of Physics, Indian Institute of Technology (IIT) Jammu, June 9–11, 2020.
4. **[NATIONAL] "Recent advancement in solid state lighting and Display"**. National Conference on Applied Physics organized at Govt. College Kathua, J&K, Nov 9–11, 2017.

5. **[NATIONAL]** "Future of solid state lighting and display". National Conference on Recent Trends in Materials Science, SMVDU, Katra, J&K, Feb 7–9, 2018.
6. **[INTERNATIONAL]** "Luminescence and Electron beam induced degradation in Alkaline earth sulfide based nano-phosphors". International Conference on Nanomaterials, M.G. University, Kottayam, Kerala, April 27–29, 2010.
7. **[NATIONAL]** "Captivating features of alkaline earth based nanophosphors". National Symposium on Inter-disciplinary Science at GGMC, Jammu, March 2–3, 2013.
8. **[NATIONAL]** "Analytical techniques for nanosurface characterization". National Workshop on Nanoscience and Nanotechnology (NST-2013) at Centre of MSE, NIT Hamirpur, June 3–7, 2013.
9. **[NATIONAL]** "Introduction to Nanoscience and technology". National Workshop on Nanoscience and Nanotechnology (NST-2013) at Centre of MSE, NIT Hamirpur, June 3–7, 2013.
10. **[NATIONAL]** "Regulated Power Supply". Science Academies' 66th Two-week Refresher Course on Experimental Physics at School of Physics, SMVD University, Dec 10–25, 2014.
11. **[NATIONAL]** "AC circuits". Science Academies' 66th Two-week Refresher Course on Experimental Physics at School of Physics, SMVD University, Dec 10–25, 2014.
12. **[NATIONAL]** "Thermal and Electrical conductivity of Copper". Science Academies' 66th Two-week Refresher Course on Experimental Physics at School of Physics, SMVD University, Dec 10–25, 2014.
13. **[NATIONAL]** "Bridge circuits". Science Academies' 66th Two-week Refresher Course on Experimental Physics at School of Physics, SMVD University, Dec 10–25, 2014.
14. **[NATIONAL]** "Series and parallel resonance circuits". Science Academies' 66th Two-week Refresher Course on Experimental Physics at School of Physics, SMVD University, Dec 10–25, 2014.
15. **[NATIONAL]** "Nano Biomimicry – introduction to nanoscience". Science Academies' 66th Two-week Refresher Course on Experimental Physics at School of Physics, SMVD University, Dec 10–25, 2014.
16. **[NATIONAL]** "Development of nanomaterials for solid state lighting (Two lectures)". Faculty Development Programme (FDP) on "Nano Science and Technology", Beant College of Engineering & Technology (TEQIP-II and PITTTR), Gurdaspur, April 13–17, 2015.
17. **[NATIONAL]** "Recent development of nanophosphors in Solid State Lighting and displays". National Conference on Microscopy & Advances in Material Sciences (NCM AMS–2015), Department of Physics and Electronics, University of Jammu, March 3–5, 2015.
18. **[NATIONAL]** "Advances of inorganic oxide based nanophosphors for forensic and SSL, DCRUST Murthal & AICTE, , 7th-12 Aug 2022
19. **[NATIONAL]** "Recent developments of nanophosphors for lighting and displays" , National Conference on Advances in Physical Science and Materials JCDAV COLLEGE DASUYA, 11-09-2022
20. **[International]** "Nanophosphors for Sustainable Development: Revolutionizing Solid-State Lighting Solutions", 6th International Conference on Recent Advances in Fundamental and Applied Science (RAFAS 2025) at Lovely Professional University, Punjab. 18th April, 2025 to 19th April, 2025
21. **[International]** "Tuneable emission from Eu³⁺ doped Zn₃(VO₄)₂ phosphors for light emitting diodes" 10th South African Conference on Photonic Materials at the University of the Free State, South Africa, 7 - 11 April 2025.
22. **[NATIONAL]** "Spectroscopic investigation of P3HT-CuS nano composite thin films for energy harvesting device applications National Conference on Advances in Applied Physical Sciences - 2025 (NCAAPS-2025) organized by Department of Physics, University of Jammu, J&K (India). 4 - 6 December, 2025.

11. CONFERENCES & WORKSHOPS ORGANIZED

1. National Conference on Recent Advances in Material Sciences (RAMS 2016) (Feb 2016)
2. National Conference on Recent Advances in Experimental and Theoretical Physics (RAETP 2018) (April, 2018)
3. National Workshop on "Imagining the future of the Space Science and its strategic importance (IFSSAISI-2018)" (Oct, 2018)
4. National Science Day 2018 (Feb 2018)
5. National Science Day 2019 (Feb 2019)
6. National Science Day 2020 (Feb 2020)

7. **National Science Day 2021 (Feb 2021)**
8. **National Science Day 2022 (Feb 2022)**
9. **International Conference "Frontiers of Space Technology and Applications for Humanity" in collaboration with Indian Institute of Space Science and Technology (IIST), Thiruvananthapuram (March 12-13, 2022)**
10. **National Science Day 2023 (Feb 2023)**
11. **National Science Day 2024 (Feb 2024)**
12. **National Science Day 2025 (Feb 2025)**

12. CREATION OF ICT-MEDIATED TEACHING PEDAGOGY

Computational Scilab code repository developed under the National Mission on Education through ICT (NMEICT), Ministry of Education / IIT Bombay:

1. **Textbook Companion and Scilab codes: Solid State Physics** (Book: "Solid State Physics" by P. K. Palanisamy). Teacher/Mentor: Dr. Vinay Kumar; Contributor: Ankush Kumar Bedyal, Solid State Physics, Shri Mata Vaishno Devi University. Program: National Mission on Education through ICT, IIT Mumbai.
2. **Textbook Companion and Scilab codes: Engineering Physics** (Book: "Engineering Physics (Publisher: PHI Learning Pvt. Ltd., 2010)" by G. Aruldas). Teacher/Mentor: Dr. Vinay Kumar; Contributor: Pankaj Biswas, Modern Physics, Shri Mata Vaishno Devi University. Program: National Mission on Education through ICT, IIT Mumbai.

13. FACULTY DEVELOPMENT & REFRESHER COURSES ATTENDED

1. **Staff Development Program**, Organized by: AICTE & SMVDU [Duration: 2 weeks (Dec 16–29, 2011)]
2. **Science Academies' Two-Week 52nd Refresher Course on Experimental Physics**, Organized by: IISc, INSA and NASI with School of Physics, SMVD University [Duration: October 8–24, 2013]
3. **General Orientation Course**, Organized by: Academic Staff College (ASC), University of Jammu [Duration: Dec 27, 2013 – Jan 24, 2014]
4. **Two-Week ISTE STTP Workshop on Environmental Studies**, Organized by: ISTE & Shri Mata Vaishno Devi University [Duration: June 2–12, 2015]

14. HONORS, DISTINCTIONS & AWARDS

Fellowships and Research Awards:

1. **C2 Rating Young Scientist Award** – Awarded by: National Research Foundation (NRF), South Africa (2018)
2. **Young Scientist Award** – Awarded by: NCPem, DBCRUST, Sonipat University (2013)
3. **Young Scientist Award (under Fast Track Proposal - FTP scheme)** – Awarded by: Department of Science and Technology (DST), Govt. of India (2011)
4. **Dr. D. S. Kothari Postdoctoral Fellowship (DSK PDF)** – Awarded by: University Grants Commission (UGC), India (2010)
5. **Postdoctoral Research Fellowship (PDF)** – Awarded by: University of the Free State, South Africa (2009)
6. **Senior Research Fellowship (SRF)** – Awarded by: Council of Scientific and Industrial Research (CSIR), India (2007)

International Distinctions & Editorial Roles:

1. **Visiting Research Fellow (VRF)**: Awarded Visiting Research Fellowship by University of the Free State, South Africa [1st Jan 2015 – 31st Dec 2020]
2. **Member, Research Assessment Committee**: Appointed Member of Research Assessment Committee, National Research Foundation (NRF), South Africa [Member No. ER105978]
3. **Section Editor (Nanotechnology Section)**: Elected Editorial Member, Journal of Nuclear Physics, Material Science, Radiation and Applications (UGC Listed Journal) [ISSN 2321–8649]
4. **Section Editor (Nanotechnology Section)**: Editorial Board Member, Journal of Integrated Science and Technology (An International Journal) [ISSN 2321–4635]

15. REVIEWER FOR INTERNATIONAL JOURNALS

Regular invited peer-reviewer for reputable international scientific journals:

1. Journal of Alloys and Compounds (Elsevier)
2. Sensors and Actuators: B (Elsevier)
3. Optical Materials (Elsevier)
4. Journal of the Electrochemical Society
5. Bulletin of Materials Science (Elsevier)
6. Journal of Materials Science (Springer)
7. Materials Research Bulletin (Elsevier)
8. Journal of Applied Physics (AIP Publishing)
9. Journal of Crystal Growth (Elsevier)
10. Journal of Luminescence (Elsevier)
11. Materials Science and Engineering: B (Elsevier)
12. Current Applied Physics (Elsevier)
13. Physica B: Condensed Matter (Elsevier)
14. Material Chemistry and Physics (Elsevier)

16. PROFESSIONAL BODY MEMBERSHIPS

- **Member** – Indian Association of Physics Teachers (IAPT) (Membership No: Membership No. 9367 L 1108)
- **Life Member** – Indian Society of Particle Accelerator (ISPA) (Membership No: Membership No. 215)
- **Life Member** – Luminescence Society of India (LSI) (Membership No: Membership No. 509)