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Updated on: 24-07-2023

EDUCATIONAL BACKGROUND

- M.Sc., Ph.D.(Physics), Kurukshetra University, Kurukshetra (INDIA) & Inter University Accelerator Centre (IUAC), New Delhi (INDIA).

PROFESSIONAL BACKGROUND

TEACHING EXPERIENCE: 17 YEARS

AREAS OF RESEARCH

RESEARCH EXPERIENCE: 22 YEARS

- **Material Science:** Synthesis & Characterizations of Nanophosphor, Smart Materials for different applications
- **Sensors:** Nanoparticles in Fingerprint sensing: Forensic Application
- **Chemometrics & Machine Learning** in Forensic Science
- **Forensic Chemistry**
- **Analytical Chemistry:** Spectroscopic applications in inks, paper and body fluids and trace evidence for forensic applications.
- **Ion Beam Analysis:** Energy loss & straggling measurements, Surface Modification of Polymers & its nano composited induced by Heavy ions.

RESEARCH GRANTS / PROJECTS

Completed: 05

Ongoing: 01

PATENT 02

PUBLICATIONS

Research Journals - 104 (INTERNATIONAL) peer reviewed

01 (NATIONAL) peer reviewed

Editor in Books 01 (Springer Nature, Elsevier & RSC)

Book Chapter - 16 (peer reviewed-Mc-graw, Springer, RSC, Elsevier)

Conference Proceedings- 01

Keynote- 02

Research Awards 12

Invited Talk/ Resource Person 38

Session Chaired- 09

International Conferences- 20

National Conferences- 23

Capacity Building Program 11

Conference/Seminar/Special Lecture Organised 10

Citations: 2225

h - index: 29

i10 index: 68

EDITORIAL BOARD MEMBER

1. On Editorial Board of Forensic Science International: Synergy, by Elsevier, since March, 2019
Link: <https://www.journals.elsevier.com/forensic-science-international-synergy/editorial-board>
2. On Editorial Board of Forensic Science International: Reports, by Elsevier, since April, 2019
Link: <https://www.journals.elsevier.com/forensic-science-international-reports/editorial-board>

Research Publications

International:

- (1) Priyanka Mankotia, Kashma Sharma, Vishal Sharma, Yogendera 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(1) (2023) 124703. (Impact factor 8.2)
- (2) Ankita Guleria, Kewal Krishan, **Vishal Sharma**, Tanuj Kanchan, Methods of forensic facial reconstruction and human identification: historical background, significance, and limitations, The Science of Nature 108 (10) (2023) 1-11. (Impact factor 1.8)
- (3) Jasdeep Kaur, Kailash Chandra Juglan, Kush Sharma, **Vishal Sharma**, An Acoustic Analysis of Fluctuations for Inter- and Intra-Speaker Variability in Speech Sounds, Journal of Forensic Science and Medicine (2023) 9(1) 38-43.
- (4) Sonal Chaudhary, Kashma Sharma, **Vishal Sharma**, Vijay Kumar, 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 (2023). (impact factor 7.758).
- (5) Sonal Chaudhary, Kashma Sharma, Pawan K. Mishra, Vijay Kumar, **Vishal Sharma**, Performance Evaluation of Gum Gellan-Based Hydrogel as a Novel Adsorbent for the Removal of Cationic Dyes: Linear Regression Models, ACS Applied Materials & Interfaces (2023). (impact factor 10.38).
- (6) Akanksha Sharma, **Vishal Sharma**, Forensic analysis of cigarette filter using non-destructive ATR-FTIR spectroscopy and chemometric methods, Forensic Chemistry (2023) 100465. (impact factor 3.096).
<https://doi.org/10.1016/j.forc.2023.100465>
- (7) Sehali Verma, Irfan Ayoub, Sudipta Som, Gagan Sharma, **Vishal, Kumar**, Hendrik Swart C, Vijay Kumar, Spectroscopic characterization of Eu³⁺-doped KSrYSi₂O₇ phosphor for NUV LEDs: Estimation of the Judd Ofelt parameter, Optical Materials 136 (2023) 113416. (impact factor 3.75).
<https://doi.org/10.1016/j.optmat.2022.113416>
- (8) Archana Gupta, **Vishal Sharma**, Pawan Kumar Mishra, Adam Ekielski, A Review on Polyacrylonitrile as an Effective and Economic Constituent of Adsorbents for Wastewater Treatment, Molecules 27 (24) (2022) 8689 (impact factor 4.92). <https://doi.org/10.3390/molecules27248689>
- (9) Ankita Guleria, Kewal Krishan, Vishal Sharma, Tanuj Kanchan, Impact of prolonged wearing of face masks—medical and forensic implications, The Journal of Infection in Developing Countries 16(10) (2022) 1578-1587. (impact factor 2.51) doi: 10.3855/jidc.16618
- (10) Akanksha Sharma, **Vishal Sharma**, Forensic Analysis of Cigarette Ash using ATR-FTIR Spectroscopy and Chemometric Methods, Microchemical 178 (2022) 107406 (impact factor 4.8)
- (11) 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 (Springer) (impact factor 3.097).
<https://doi.org/10.1007/s10965-022-02978-8>
- (12) Irfan Ayoub, Vijay Kumar, Rishabh Sehgal, Vishal Sharma, Rakesh Sehgal, Reza Abolhassani, HC Swart, YK Mishra, Advances in ZnO: Manipulation of Defects for Enhancing their Technological Potentials, Nanotechnology Reviews (2022) (De Gruyter) (impact factor 5.8).
- (13) Ajay Kumar, Subash Chandra Sahoo, S. K. Mehta, Pramod Soni, **Vishal Sharma**, Ramesh Kataria, Luminescent Zn-MOF for detection of explosives and development of fingerprints, Analytical Methods (2022) (RSC) (impact factor 2.89).

- (14) 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** (2022) (imapct factor 3.36).
- (15) S. Kainth, **V. Sharma**, M Bhagat, M. Basu, Yellow emissive carbon dots in ludox silica matrix with anticancer activity for enhanced imaging of developed sweat latent fingerprints, **Materials Today Chemistry** 23 (2022) 100659. (Impact factor 8.3) <https://doi.org/10.1016/j.mtchem.2021.100659>
- (16) Vishal Sharma, Rohini Chauhan, Raj Kumar, Spectral Characteristics of Organic Soil Matter: A comprehensive review, **Microchemical** 171 (2021) 106836. (imapct factor 4.8) <https://doi.org/10.1016/j.microc.2021.106836>.
- (17) Muhammad Naeim Mohamad Asri, Rajesh Verma, Muhammad Haffizan Ibrahim, Nor Azman Mohd Nor , **Vishal Sharma**, Dzulkiflee Ismail, On the discrimination between facial creams of different brands using Raman spectroscopy and partial least squares discriminant analysis for forensic application, **Science and Justice** (2021) 116378. (impact factor 2.12).
- (18) Archana Gupta, **Vishal Sharma**, Kashma Sharma, Vijay Kumar, Sonal Chaudhary, Priyanka Mankotia, Brajesh Kumar, Harshita Mishra, Amitava Moulick, Adam Ekielski, Pawan Kumar Mishra, A Review of Adsorbents for Heavy Metal Decontamination: Growing Approach to Wastewater Treatment, **Materials** 14(16) (2021) 4702 (impact factor-3.623)
- (19) **Vishal Sharma**, Sonal Chaudhary, Priyanka Mankotia, Amrita Das, Kashma Sharma, Rakesh Sehgal, Vijay Kumar, Nanoparticles as Fingerprint Sensor, **Trends in Analytical Chemistry TrAC** (2021) 116378. (impact factor 14.48).
- (20) **Vishal Sharma**, Manjot Bains, Neha Verma, Rajesh Verma, Raj Kumar, Novel use of Logistic regression and likelihood ratios for the estimation of gender of the writer from a database of handwriting features, **Australian Journal of Forensic Sciences** (2021) In press (Impact facor 1.08)
- (21) Neha Verma, Abhimanyu Kumar, Vishal Sharma, Examination of fraudulent cheques: a case study, **Problems in Forensic Science**, 124 (2020) 255-267.
- (22) Muhammad Naeim Mohamad Asri, Rajesh Verma, Muhammad Haffizan Ibrahim, **Vishal Sharma**, Nor Azman Mohd Nor, Rapid non-destructive techniques to identify the traces of Kajal using chemometrics; A comparison of ATR-FTIR and Raman spectroscopy, **Microchemical** (2021) 116378. (impact factor 4.8).
- (23) 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 (6) (2021) 1403. In press. (impact factor 5.07).
- (24) Anjali Sharma, Priyanka Mankotia, Rohini Chauhan, Raj Kumar, Rajesh Verma, **Vishal Sharma**, A rapid and non-destructive ATR-FTIR Spectroscopy method supported by chemometric for differentiation between facial creams and classification into herbal and non-herbal brands, **Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy** 258 (2021) 119803. (imapct factor 4.09)
- (25) Taniya Arora, Rajesh Verma, Raj Kumar, Rohini Chauhan, Brajesh Kumar, Vishal Sharma, Chemometrics based ATR-FTIR Spectroscopy method for rapid and non-destructive discrimination between eyeliner and mascara traces, **Microchemical Journal** 164 (2021) 106080. (Imapct factor 4.8)
- (26) Rohini Chauhan, Raj Kumar, Kashma Sharma, Vijay Kumar, **Vishal Sharma**, On the discrimination of soil samples by derivative diffuse reflectance UV-Vis-NIR spectroscopy and Chemometric methods, **Forensic Science International** 319 (2021) 110655. <https://doi.org/10.1016/j.forsciint.2020.110655> (imapct factor 2.39)
- (27) Richa Gautam, Rohini Chauhan, Raj Kumar, **Vishal Sharma**, PLS-DA and Infrared Spectroscopy based rapid and non-destructive discrimination of black ball and gel pen inks for forensic application, **Forensic Science International: Reports** 3 (2021) 100162. <https://doi.org/10.1016/j.fsir.2020.100162>
- (28) Kashma Sharma, Shreya Sharma, Sonia Thapa, Madhulika Bhagat, Vijay Kumar, and **Vishal Sharma**, Nanohydroxyapatite-, Gelatin-, and Acrylic Acid-Based Novel Dental Restorative Material, **ACS Omega** 5 (43) (2020) 27886–27895. <https://doi.org/10.1021/acsomega.0c03125> (Amrican Chemical Society) (imapct factor 3.51)
- (29) Agreeema Sharma, Rajesh Verma, Raj Kumar, Rohini Chauhan, **Vishal Sharma**, Chemometric analysis of ATR-FTIR spectra of fingernail clippings for classification and prediction of sex in forensic context, **Microchemical Journal** 159 (2020) 105504. <https://doi.org/10.1016/j.microc.2020.105504> (imapct factor 4.8)
- (30) Arpita Angrish, Raj Kumar, Rohini Chauhan, **Vishal Sharma**, On the IR spectroscopy and chemometric based rapid and non-destructive method for the investigation of sunscreen stains: Application in forensic science, **Spectrochimica Acta**

Part A: Molecular and Biomolecular Spectroscopy 242 (2020) 118708 <https://doi.org/10.1016/j.saa.2020.118708> (impact factor 4.09)

- (31) Raj Kumar, Kajal Sharma, **Vishal Sharma**, Bloodstain age estimation through Infrared spectroscopy and Chemometric models, **Science & Justice** 60 (2020) 538-546. <https://doi.org/10.1016/j.scijus.2020.07.004> (impact factor 2.12)
- (32) B. Kumar, K. Smita, S. Galeas, V. Sharma, V.H. Guerrero, A. Debut, L. Cumbal, Characterization and application of biosynthesized iron oxide nanoparticles using Citrus paradisi peel: A Sustainable Approach, **Inorganic Chemistry Communications** 119 (2020) 108116. doi.org/10.1016/j.inoche.2020.108116 (impact factor 2.49)
- (33) **Vishal Sharma**, Jagdeep Kaur, Raj Kumar, Proof of concept study for paper discrimination and age estimation through its degradation process by ATR-FTIR spectroscopy and chemometric models, **Australian Journal of Forensic Sciences** (2020). doi.org/10.1080/00450618.2020.1781254. (impact factor 1.08)
- (34) **Vishal Sharma**, Jyoti Yadav, Raj Kumar, D. Tesarova, A. Ekielski, P.K. Mishra, On the rapid and non-destructive approach for wood identification using ATR-FTIR spectroscopy and Chemometric methods, **Vibrational Spectroscopy** 110 (2020) 103097. doi.org/10.1016/j.vibspec.2020.103097 (impact factor 2.50)
- (35) R. Verma, K. Krishan, D. Rani, A. Kumar, **V. Sharma**, R. Shrestha, K. Tanuj, Estimation of Sex in Forensic Examinations using Logistic Regression and Likelihood Ratios, **Forensic Science International: Reports** 2 (2020) 100118. doi.org/10.1016/j.fsir.2020.100118.
- (36) Shikha Sharma, Karan Virk, Kashma Sharma, Sunil Kumar Bose, Vijay Kumar, Vishal Sharma, Maria Letizia Focarete, Susheel 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 ([doi:10.1016/j.molstruc.2020.128298](https://doi.org/10.1016/j.molstruc.2020.128298)) (Elsevier) (Impact factor- 3.19)
- (37) Kashma Sharma, Karanpreet Virk, Vijay Kumar, S.K. Sharma, and **Vishal Sharma**, Effect Preparation and Characterizations Graft Copolymer of Poly(acrylamide-aniline)-Grafted Gum Ghatti, **Materials Today: Proceedings** 21 (4) (2020) 1856--1861 (Elsevier) (cite score- 1.23)
- (38) Kirandeep Kaur, K.C. Juglan, Harsh Kumar, **Vishal Sharma**, Ultrasonic Velocities of Binary Mixtures of Homologous Series of Ethylene Glycol and Glycerol at Different Temperatures: A Comparative Study, **Materials Today: Proceedings** 21 (4) (2020) 1875--1881 (Elsevier) (cite score- 1.23).
- (39) Deepak Kumar, S.K. Sharma, Shefali Verma, Vishal Sharma, Vijay Kumar, A Short Review on Rare Earth Doped NaYF₄ Upconverted Nanomaterials for Solar Cell Applications, **Materials Today: Proceedings** 21 (4) (2020) 1868--1874 (Elsevier) (cite score- 1.23)
- (40) Adam Ekielski, Tomasz Żelaziński, Adam Siwek, **Vishal Sharma**, Pawan Kumar Mishra, Formulation and Characterization of Corn Grits- Propylene Glycol Extrudates, **Materials Today: Proceedings** 21 (4) (2020) 1772--1780 (Elsevier) (cite score- 1.23).
- (41) Aneesh Nair, Piyush Sharma, Vishal Sharma, and P.K.Diwan, Effect of UV-irradiation on the optical properties of transparent PET polymeric foils, **Materials Today: Proceedings** 21 (4) (2020) 2105—2111 (Elsevier) (cite score- 1.23)
- (42) Rajesh Verma, Kewal Krishan, Deepika Rani, Ajay Kumar, Vishal Sharma, Stature Estimation in Forensic Examinations using Regression Analysis: A Likelihood Ratio Perspective, **Forensic Science International: Reports** 2 (2020) 100069. (<https://doi.org/10.1016/j.fsir.2020.100069>)
- (43) Raj Kumar, Avantika Samkaria and Vishal Sharma, On the spectroscopic cum chemometric approach for differentiation and classification of inkjet, laser and photocopier printed documents, **Science & Justice** 60 (4) (2020) 347-357. ([10.1016/j.scijus.2020.01](https://doi.org/10.1016/j.scijus.2020.01)) (Impact factor- 2.12).
- (44) Shefali Verma, Deepak Kumar, Somrita Dutta, Vishal Sharma, H.C. Swart, Vijay Kumar, A novel near white light emitting phosphor K₂Si₂O₇:Dy³⁺: Synthesis, characterization and luminescence properties, **Vacuum** 174 (2020) 109179. (<https://doi.org/10.1016/j.vacuum.2020.109179>) (Impact factor- 3.62).
- (45) Priyanka Mankotia, Sonal Choudhary, Kashma Sharma, Vijay Kumar, Jaspreet Kaur Bhatia, Ankush Parmar, Shweta Sharma, **Vishal 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. (<https://doi.org/10.1016/j.ijbiomac.2019.10.015>) (Impact factor- 8.2).
- (46) Rohini Chauhan, Raj Kumar, P.K. Diwan, **Vishal Sharma**, Thermogravimetric analysis and Chemometric based methods for soil examination: Application to soil forensics, **Forensic Chemistry** 17 (2020) 100191.

(<https://doi.org/10.1016/j.forc.2019.100191>), (Impact factor-2.67).

- (47) Raj Kumar, Atamjot Kaur, Kashma Sharma, Brajesh Kumar, **Vishal Sharma**, On the examination of raw, pasteurized, powdered, and adulterated milk samples and their multivariate classification: applications in food and forensic science, **Spectroscopy Letters** 51(5) (2019) 205-215. (<https://doi.org/10.1080/00387010.2019.1681458>), (Impact factor-1.17).
- (48) Sonal Choudhary, Kashma Sharma, Vijay Kumar, Jaspreet Kaur Bhatia, Shweta Sharma, **Vishal Sharma**, Microwave-assisted synthesis of gum gellan-cl-poly (acrylic-co-methacrylic acid) hydrogel for cationic dyes removal, **Polymer Bulletin** 77 (2020) 4917–4935. (<https://doi.org/10.1007/s00289-019-02998-3>) (Impact factor-2.87).
- (49) G. Singh, J. Sindhu, V. Kumar, **Vishal Sharma**, S.K. Sharma, S.K. Mehta, Mater H. Mahnashi, Ahmad Umar, Ramesh Kataria, Development of an off-on selective fluorescent sensor for the detection of Fe³⁺ ions based on Schiff base and its Hirshfeld surface and DFT studies, **Journal of Molecular Liquids** 296 (2019) 111814. (<https://doi.org/10.1016/j.molliq.2019.111814>) (Impact factor-6.16).
- (50) Sweety Sharma, Ritu Chophi, Raj Kumar, **Vishal Sharma**, Rajinder Singh, Differentiation of locally manufactured *Kajal* by Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy supported by chemometric analysis, **Forensic Science International** 303 (2019) 109930: 1-9. (<https://doi.org/10.1016/j.forsciint.2019.109930>) (Impact factor-2.39).
- (51) Chandra Prakash Sharma, Sweety Sharma, **Vishal Sharma**, Rajinder Singh, Rapid and non-destructive identification of claws using ATR-FTIR spectroscopy—A novel approach in wildlife forensics, **Science and Justice** 59 (6) (2019) 622-629. (<https://doi.org/10.1016/j.scijus.2019.08.002>). (Impact factor-2.12).
- (52) Neha Verma, **Vishal Sharma**, Raj Kumar, R. Sharma, M.C. Joshi, G.R. Umapathy, Sunil Ohja, Sundeep Chopra, On the spectroscopic examination of printed documents by using a field emission scanning electron microscope with energy-dispersive X-ray spectroscopy (FE-SEM-EDS) and chemometric methods: application in forensic science, **Analytical and Bioanalytical Chemistry** 411 (2020) 3477–3495. DOI: 10.1007/s00216-019-01824-z (Springer) (Impact factor-4.14).
- (53) **Vishal Sharma**, Shweta Bhardwaj, Raj Kumar, On the spectroscopic investigation of Kohl stains via ATR-FTIR and multivariate analysis: Application in forensic trace evidence, **Vibrational Spectroscopy** 101 (2019) 81-91. (<http://doi.org/10.1016/j.vibspec.2019.02.006>) (Impact factor-2.5).
- (54) **Vishal Sharma**, Anchal Bharti, Raj Kumar, On the spectroscopic investigation of lipstick stains: Forensic trace evidence, **Spectrochimica Acta Part A Molecular and Biomolecular Spectroscopy** 215 (2019) 48-57. (<https://doi.org/10.1016/j.saa.2019.02.093>) (Impact factor-4.09).
- (55) **Vishal Sharma**, Pawandeep Kaur, Raj Kumar, Spectroscopic method and multivariate analysis for forensic examination of textile fibers, **J. of Applied Spectroscopy**, May 86 (1) (2019) 110-115. (Impact factor-0.74).
- (56) Brajesh Kumar, Karla Sofía Vizuite, **Vishal Sharma**, Alexis Debut, Luis Cumbal, Ecofriendly synthesis of monodispersed silver nanoparticles using Andean Mortiño berry as reductant and its photocatalytic activity, **Vacuum** 160 (2018) 272-278. (<https://doi.org/10.1016/j.vacuum.2018.11.027>) (Impact factor- 3.62).
- (57) **Vishal Sharma**, Raj Kumar, Letter to Editor, Correspondence regarding the article “A novel metastable state nanoparticle-enhanced Raman spectroscopy coupled with thin layer chromatography for determination of multiple pesticides” *Food Chemistry* 270 (2019) 494–501, **Food Chemistry** 277 (2019) 31. (<https://doi.org/10.1016/j.foodchem.2018.10.023>) (Impact factor-7.51).
- (58) Vishal Sharma, Dova Nani, Raj Kumar, Spectroscopic and chemometric evaluation of cling films used for wrapping of foodstuff and illicit drugs, **Spectrochimica Acta Part A Molecular and Biomolecular Spectroscopy** 206 (2019) 558-568. (<https://doi.org/10.1016/j.saa.2018.08.052>) (Impact factor-4.09).
- (59) Sunil Kumar, **Vishal Sharma**, P.K. Diwan, Energy loss straggling of α -particles in Tb, Ta and Au metallic foils, **Vacuum** 158 (2018) 42-47. (<https://doi.org/10.1016/j.vacuum.2018.09.035>) (Impact factor- 3.62).
- (60) Deepak Kumar, Shefali Verma, **Vishal Sharma**, Vijay Kumar, Synthesis, characterization and upconversion luminescence of core-shell nanocomposites NaYF₄: Er/Yb@ SiO₂@ Ag/Au, **Vacuum** 157 (2018) 492-496. (<https://doi.org/10.1016/j.vacuum.2018.09.041>) (Impact factor- 3.62).
- (61) Vasudha Hasija, Kashma Sharma, Vijay Kumar, Shweta Sharma, **Vishal Sharma**, Green synthesis of agar/Gum Arabic based superabsorbent as an alternative for irrigation in agriculture, **Vacuum**, 157 (2018) 458-464. (<https://doi.org/10.1016/j.vacuum.2018.09.012>) (Impact factor- 3.62).

- (62) Vishal Sharma, Raj Kumar, Trends of Chemometrics in Bloodstain Investigations, **TrAC Trends in Analytical Chemistry**, 107 (2018) 181-195. <https://doi.org/10.1016/j.trac.2018.08.006> (Impact factor- 14.48).
- (63) Neharika, J. Sharma, **Vishal Sharma**, A.K. Bedyal, H.C. Swart, Vinay Kumar, Synthesis and thermoluminescence studies of UV-C exposed $\text{Li}_4\text{Ca}(\text{BO}_3)_2\text{:Dy}^{3+}$ phosphors, **Vacuum**, 156 (2018) 370-374. <https://doi.org/10.1016/j.vacuum.2018.08.003> (Impact factor- 3.62).
- (64) **Vishal Sharma**, Raj Kumar, Chemometrics in Forensic Science, **TrAC Trends in Analytical Chemistry**, 105 (2018) 191-201. (Impact factor-14.908). <https://doi.org/10.1016/j.trac.2018.05.010>
- (65) **Vishal Sharma**, Raj Kumar, Karan Devgan, Pawan Mishra, Adam Ekielski, Vijay Kumar, Vinay Kumar, Spectroscopic and multivariate analysis for characterization, discrimination and classification of marker pen inks in forensic examination, **Spectroscopy Letters** 51, 5 (2018) 205-215. <https://doi.org/10.1080/00387010.2018.1452265> (Impact factor-1.17).
- (66) Rohini Chauhan, Raj Kumar, **Vishal Sharma**, Soil Forensics: A spectroscopic examination of trace evidence, **Microchemical Journal** 139 (2018) 74-84. <https://doi.org/10.1016/j.microc.2018.02.020> (Impact factor-4.8).
- (67) Neha verma, Raj Kumar, **Vishal Sharma**, Analysis of laser-printer and photocopier toners by spectral properties and chemometrics, **Spectrochimica Acta Part A Molecular and Biomolecular Spectroscopy** 196 (2018) 40-48. <https://doi.org/10.1016/j.saa.2018.02.001> (Impact factor-4.09).
- (68) Vijay Kumar, Deepak Sharma, Kartikey Verma, Shefali, Babulal Chaudhary, Sudipta Som, **Vishal Sharma**, H.C. Swart, Recent Advances in Enhanced Luminescence Upconversion of Lanthanide-Doped NaYF_4 phosphors, **Physica B: Condensed Matter** 535 (2018) 278-286, (accepted 03 Aug 2017) <https://doi.org/10.1016/j.physb.2017.08.003>, (Impact factor-2.43).
- (69) Mohit Manhas, Vinay Kumar, **Vishal Sharma**, Ankush Badyal, Jitender Sharma, H.C. Swart, A novel orange-red emitting $\text{Ba}_2\text{Ca}(\text{BO}_3)_2\text{:Sm}^{3+}$ phosphor to fill the amber gap in LEDs : Synthesis, structural and luminescence characterizations, **Current Applied Physics** 17(11) (2017) 1369–1375. <https://doi.org/10.1016/j.cap.2017.07.015> (Impact factor-2.48).
- (70) Vinay Kumar, Pankaj Bishwas, **Vishal Sharma**, Ankush Badyal, Naresh Padha, H.C. Swart, Potential of Sm^{3+} doped LiSrVO_4 nanophosphor to fill amber gap in LEDs, **Physica B: Condensed Matter** 535 (2018) 221-226, (accepted 19 July 2017) <https://doi.org/10.1016/j.physb.2017.07.040> (Impact factor-2.43).
- (71) **Vishal Sharma**, Amrita Das, Vijay Kumar, Vinay Kumar, Combustion synthesis and characterization of blue long lasting phosphor $\text{CaAl}_2\text{O}_4\text{:Eu}^{2+}, \text{Dy}^{3+}$ and its novel application in latent fingerprint and Lip mark detection, **Physica B: Condensed Matter** 535 (2018) 149-156, (accepted 11 July 2017) <https://doi.org/10.1016/j.physb.2017.07.019> (Impact factor-2.43).
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Books as Editor:

1. Royal Society of Chemistry (RSC) book entitled "Chemometric Methods in Forensic Science", Editors: **Vishal Sharma**, Georgina Sauzier, Simon Lewis, to be published in **2023** by Royal Society of Chemistry (RSC), U.K.
2. Metal Oxides for Next Generation Optoelectronic, Photonic and Photovoltaic Applications, Vijay Kumar, **Vishal Sharma**, H.C. Swart, Subrata Das (Eds.) in Metal Oxides Series, 1st Edition published in January, **2023** under the Elsevier Woodhead Imprint. (eBook ISBN: 9780323993678)
3. Metal Oxide Defects: Fundamentals, Design, Development and Applications Edited by Vijay Kumar, **Vishal Sharma**, H.C. Swart, Subrata Das, Vijay Kumar, **Vishal Sharma**, H.C. Swart, Subrata Das (Eds.) in Metal Oxides Series, 1st Edition published in November 19, **2022** under the Elsevier Woodhead Imprint. (eBook ISBN: 9780323903592)
<https://www.elsevier.com/books/metal-oxide-defects/kumar/978-0-323-85588-4>

4. Electrospun nanofibers, S. K. Tiwari, K. Sharma, Vijay Kumar, **Vishal Sharma** (Eds.) (2021) Sub title: Fabrication & Functionalization and Applications, Series title: Springer Series on Polymer and Composite Materials, **Publisher: Springer International Publishing AG Switzerland**, pages (XI, 376) Edition-1, (eBook ISBN: 978-3-030-79979-3) DOI: 10.1007/978-3-030-79979-3 (<https://link.springer.com/book/10.1007%2F978-3-030-79979-3>).
5. Springer Series on Polymer and Composite Materials – **Radiation Effects in Polymeric Materials**. Editors: Vijay Kumar, Babulal Chaudhary, **Vishal Sharma**, Kartikey Verma, (April 11, 2019) DOI: 10.1007/978-3-030-05770-1, eBook ISBN: 978-3-030-05770-1, Springer Nature Switzerland AG.
6. **Advanced Materials for Solid State Lighting**. Editors: **Vijay Kumar, Vishal Sharma**, Hendrik C Swart, Springer Nature Singapore Pte Ltd. (Under Process).

Book Chapters:

1. Priyanka Mankotia, Kashma Sharma, **Vishal Sharma**, Rakesh Sehgal, Vijay Kumar, (2023) Inorganic Bionanocomposites for Bone Tissue Engineering, Dr. Amit Kumar Nayak, Dr. Md Saquib Hasnain, Dr. Tejraj M. Aminabhavi (Eds.) Inorganic Nanosystems: Theranostic Nanosystems; (Vol.2, Edition 1): Polymeric nanosystems. Elsevier. (ISBN: 9780323857840).
<https://www.elsevier.com/books/inorganic-nanosystems/hasnain/978-0-323-85784-0>
2. Priyanka Mankotia, Kartikey Verma, Kashma Sharma, Vishal Sharma, Vijay Kumar, Rakesh Sehgal, (2023) Mass Spectroscopy in Biomedical Nanotechnology, Ajeet Kaushik, Sesha S. Srinivasan, Yogendra Kumar Mishra (Eds.) Analytical Techniques for Biomedical Nanotechnology. Institute of Physics (IOP).
3. Irfan Ayoub, Rishabh Sehgal, Hendrik C Swart, Rakesh Sehgal, **Vishal Sharma**, Vijay Kumar (Nov 2022), book chapter entitled “Viable defect engineering with templates into metal oxides” in Metal Oxide Defects: Fundamentals, Design, Development and Applications Edited by Vijay Kumar, Vishal Sharma, H.C. Swart, Subrata Das (Eds.), published in 2022 under the Elsevier Woodhead Imprint. (eBook ISBN: 9780323903592).
<https://www.elsevier.com/books/metal-oxide-defects/kumar/978-0-323-85588-4>
4. Sumit Dokwal, Suman Mahendia, Rishi Pal Chahal, **Vishal Sharma**, Suman B Kuhar, Shyam Kumar, book chapter entitled “Irradiation-induced effect on polymer: From mechanism to biomedical applications” (Nov 2022) in the book Radiation Technologies and Applications in Materials Science, CRC Press (page no.149-175).
<https://www.taylorfrancis.com/books/edit/10.1201/9781003321910/radiation-technologies-applications-materials-science-subhendu-ray-chowdhury?refId=d4a055d1-0c64-4bae-a7eb-cad2513f7a47&context=ubx>
5. Sonal Choudhary, Kashma Sharma, **Vishal Sharma**, Vijay Kumar, Rakesh Sehgal (2022), book chapter entitled “Marine Collagen for Delivery of Therapeutics” in Marine Biomaterials Edited by Jana S., Jana S. Volume 1 page 119-147 Springer, Singapore.
DOI: 10.1007/978-981-16-5374-2_4
6. Sonal Choudhary, Kashma Sharma, **Vishal Sharma**, Vijay Kumar, Rakesh Sehgal, (2021) Marine Collagen for delivery of therapeutics, Sougata Jana (Eds.) Marine Biomaterials: Drug delivery and therapeutic potential. Springer Nature Singapore. (Submitted)
7. Jyotendra Nath, Kashma Sharma, Shashikant Kumar, **Vishal Sharma**, Vijay Kumar, Rakesh Sehgal, (2021) Electrospun nanofibers for waste water treatment, S. K. Tiwari, K. Sharma, Vijay Kumar, Vishal Sharma (Eds.) Fabrication & Functionalization of Electrospun Nanofibers, Publisher: Springer International Publishing AG Switzerland. (Submitted).
8. Priyanka Mankotia, Kashma Sharma, **Vishal Sharma**, Rakesh Sehgal, Vijay Kumar, (2021) Polymer and ceramics based hollow nanofibers via electrospinning, S. K. Tiwari, K. Sharma, Vijay Kumar, Vishal Sharma (Eds.) Fabrication & Functionalization of Electrospun Nanofibers, Publisher: Springer International Publishing AG Switzerland. (Submitted).
9. Priyanka Mankotia, Kashma Sharma, **Vishal Sharma**, Vijay Kumar (2021) Inorganic Biocomposites for Bone Tissue Engineering in Biomedical Composites, Springer Nature Singapore.

10. Sonal Choudhary, Kashma Sharma, **Vishal Sharma**, Vijay Kumar (2020) Grafting Polymers. In: Gutiérrez T.J. (eds) Reactive and Functional Polymers Volume2 199-243 Springer, Cham. https://doi.org/10.1007/978-3-030-45135-6_8
11. 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
12. **Vishal Sharma**, Raj Kumar, FTIR and NIRS in Forensic Chemical Sensing, eds. Thiago R L C Paixão, Wendell K T Coltro, Maiara Oliveira Salles: Forensic Analytical Methods, (2019) 164-197, *Royal Society of Chemistry*, ISBN 978-1-78801-459-5, DOI: 10.1039/9781788016117-00164.
13. **Vishal Sharma**, Pawan K. Diwan, Shyam Kumar, Energy Loss of Swift Heavy Ions: Fundamentals and Theoretical Formulations, In Springer Series on Polymer and Composite Materials, eds. Vijay Kumar, Vishal Sharma, Babulal Chaudhary, Kartikey Verma: Radiation Effects in Polymeric Materials, Springer Nature, Switzerland AG, ISBN 978-3-030-05769-5, DOI: 10.1007/978-3-030-05770-1.
14. Kashma Sharma, **Vishal Sharma**, Vijay Kumar, Synthesis of hydrogels by modification of natural polysaccharides through radiation cross-linking polymerization for use in drug delivery, , In Springer Series on Polymer and Composite Materials, eds. Vijay Kumar, Vishal Sharma, Babulal Chaudhary, Kartikey Verma: Radiation Effects in Polymeric Materials, Springer Nature, Switzerland AG, ISBN 978-3-030-05769-5, DOI: 10.1007/978-3-030-05770-1.
15. Amrita Das, Vinay Kumar, **Vishal Sharma**, Combustion Synthesis and Characterization of Inorganic Nano-Crystalline $\text{SrAl}_2\text{O}_4\text{:Eu}^{3+}$: Its Application in Detection of Latent Fingerprints, ed. Prof Bhupinder Bhoop, Prof Anupama Kaushik, Prof SK Mehta, Prof SK Tripathi, In Nanotechnology: Novel Perspectives and Prospects, **McGraw Hill Education** (India) Private Limited, **05/2015**: pages 212-217; McGraw Hill Education (India) Private Limited., ISBN: 13:978-93-39221-09-6
16. M. Manhas, Vinay Kumar, **Vishal Sharma**, OM Ntwaeaborwa, HC Swart, Photoluminescence Characteristics of Terbium doped CaMgB_2O_5 green nanophosphor, ed. Prof Bhupinder Bhoop, Prof Anupama Kaushik, Prof SK Mehta, Prof SK Tripathi, In Nanotechnology: Novel Perspectives and Prospects, **McGraw Hill Education** (India) Private Limited, **05/2015**: pages 570-575; McGraw Hill Education (India) Private Limited., ISBN: 13:978-93-39221-09-6.

Reviewer:

- ACS Applied Materials & Interfaces (Amarican Chemical Society), Analytical methods (Royal Society of Chemistry), Organic Electronics (Elsevier), RSC Advances (Royal Society of Chemistry), Current Nanoscience, Spectrochimica Acta A (Elsevier), Journal of Molecular Liquids (Elsevier), J of Nanotechnology, Medical Hypothesis (Elsevier), Progress in Organic Coatings (Elsevier), Physica B (Elsevier), Chemistry papers, InfraRed Physics & Technology (Elsevier), Vibrational Spectroscopy (Elsevier), J. of Forensic Science (Wiley), Journal of Forensic Science and Medicine, Arab J. of forensic sciences, Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry (Taylor & Francis), Journal of Photochemistry and Photobiology A: Chemistry (Elsevier), Applied Spectroscopy (Sage Publications UK), Thin Solid Film (Elsevier), Journal of Analytical Science and Technology, Vacuum (Elsevier), Progress in Organic Coatings (Elsevier), Sustainable Agriculture Reviews – Nanoscience in Food and Agriculture, book series of Springer-Verlag, Germany, International Journal of Scientific Engineering & Technology.

Research Supervision:

- **Post Doc. Fellow/Research Associate:** **Supervised-03**

- **Ph.D. Supervision: Completed-06**
- **Masters (Post Graduate) Thesis Supervision- 55**

AWARDS AND ACIEVEMENTS

- Certificate of appreciation (2020) was conferred on Dr. Vishal Sharma, Institute of Forensic Science & Criminology, for publishing an outstanding scientific research paper from Panjab university in the year 2020 at The 6th Smt. Prem Lata and Prof. D.V.S. Jain Research Foundation Award held at Panjab university on 03 rd August 2022.
- International Travel grant to present the research work (Oral presentation) in an International conference 74th Annual Scientific Conference of the American Academy of Forensic Sciences (AAFS 2022) from February 21-25, 2022 in Seattle, Washington by SERB, DST, Govt of India.
- **India Top Cited Author Award 2019** by IOP Publishing, United Kingdom (UK) as an author of one of the top 1% of the most-cited papers from India in the field of Materials, published across the whole IOP Publishing portfolio in the past three years (2016 to 2018), using citations recorded in Web of Science.
- **Dr. P.D. Sethi Memorial National award 2017**, for best research paper on Applications of TLC/HPTLC in Pharma Herbal and other analysis" from India (Novemembr 2018) for the research paper "*Fourier Transform Infrared Spectroscopy and High Performance Thin Layer Chromatography for Characterization and Multivariate discrimination of blue ballpoint pen ink for Forensic applications, Vibrational Spectroscopy 92 (2017) 96-104.*". Citation along with the cash award of Rs. 10 000/-.
- **Research grant award** of Rs. 1.25 lacs by Panjab University Alumni Association (**PUAA**) on the proposal entitled "Functionalization's of Boron-dipyrromethene using multistem strategies for the development of fluorescent nanoprobe for latent fingerprint detection in forensic science" on dated 23.10.2018.
- **Award of PU-DST-PURSE-II, Incentive Grant of Rs. 50,000/-** for the research contributions in the Physics & Engineering area/s of Category A by Panjab University, Chandigarh on **8th August, 2018**.
- International Travel grant to present the research work (Oral presentation) in an International conference (**XIVth International Conference on Molecular Spectroscopy from Molecules to Functionals materials (ICMS 2017) from September 3-7, 2017**) at **Krakow, Poland**.
- International Travel support award, invited to present the research work in an International conference "**21st Triennial Meeting of the International Association of Forensic Sciences 2017 (IAFS 2017)**" from **August 21-25, 2017 at Toronto (Canada)**.
- International Travel grant to present the research work in an International conference (**7th South African Conference on Photonic Materials, 27-31 Dec, 2017**) at **University of Free State, Bloemfontein (South Africa)**.
- International Travel grant in May 2014 to present the research work in an International conference (**4th International Conference on Colloids, 15-18 June, 2014**) at **Madrid (Spain)** by SERB, DST, Govt of India.

- Felicitated by Panjab University Syndicate for getting research funding from **BRNS (DAE)** in 2011 and **SERB (DST)** in 2017.
- PUTA Award from Panjab University Teachers' Association (PUTA) in recognition of continuous achievements in Research and Teaching on 22nd May 2014.
- **Young Scientist Research Award** (DAE-YSRA) (2011) Awarded by Board of Research For Nuclear Sciences (BRNS), BRC, Mumbai.

CONFERENCES / SEMINARS / WORKSHOP ATTENDED

KEYNOTE:

1. Delivered a Keynote lecture on "**New Dimensions in Forensic Science**" in 1st National Forensic Science Conclave on Role of Universities in Nurturing the Discipline, at Forensic Science Section, Department of Anthropology, **University of Delhi, Delhi**, on 10 Feb, 2018.
2. Delivered a Keynote lecture on "Some recent investigations of written and printed documents via spectroscopic and chemometric methods: Applications in Forensic Science" in **International Conference on Forensic Research and Analysis**, at Hotel Raddison Blue, New Delhi by Select Biosciences India Pvt. Ltd. on 25-26 April 2019.

INVITED TALK /EXPERT LECTURE/ RESOURCE PERSON

1. Presented an invited talk entitled "**FTIR, RAMAN and Chemometrics in Trace Evidence Analysis: Recent Advancements**" in the **National Conference on Recent Trends and Advancements in Forensic Science** RTAFS2023 from 16-18 March, 2023, **Punjabi University, Patiala, India**.
2. Presented an invited talk entitled "Questioned Documents and Chemometrics" in the International Scientific Conference, **20th Wroclaw Symposium** of Questioned Document Examination, **June 9-10, 2022, University of Wroclaw, Poland**.
3. Resource Person in 07 days Continuing Education Program (CEP) organised by IIT, Patna from 22-28 January 2022. Title of the talk: Document Examination in Forensic Context.
4. Resource Person in 15 days Refresher Course on Emerging Trends And Challenges in Interdisciplinary Research & Teaching in Science, Technology and Intellectual Property Rights organised by Amity Academic Staff College In Association with Amity Institute of Forensic Sciences And Forensic Science Laboratory (Govt. Of NCT Of Delhi), India from 16-30 June 2021.
5. AICTE Sponsored one Week STTP on "Computer Forensics & Cyber Crime" organised by the Computer Science and Engineering Department (NBA Accredited), JSS Academy of Technical Education, Noida (NBA accredited Institute) held from Dec. 14-19, 2020. Delivered lecture on "Machine learning methods in Forensic Science".
6. Resource person at Faculty Development Program (FDP), organised by CALEM, MHRD, Department of Education, Panjab University, Chandigarh on December 18, 2020.
7. Resource person in AICTE Sponsored one Week STTP on "Computer Forensics & Cyber Crime"

organised by the Computer Science and Engineering Department (NBA Accredited), JSS Academy of Technical Education, Noida (NBA accredited Institute) held from Dec. 14-19, 2020. Delivered lecture on "Machine leaning methods in Forensic Science".

8. Resource person in AICTE Sponsored one Week STTP on "Computer Forensics & Cyber Crime" organised by the Computer Science and Engineering Department (NBA Accredited), JSS Academy of Technical Education, Noida (NBA accredited Institute) held from Nov. 23-28, 2020. Delivered lecture on "Chemometric in Forensic Science".
9. Resource person in TEQUIP-3 Sponsored one Week FDP on "Effective Online Teaching and Learning" organised by Dr. SSBUI CET, Panjab University in collaboration with Dibrugarh University Institute of Engineering and Technology during September 14-19, 2020.
10. Resource person in TEQUIP-3 Sponsored one Week FDP on "Pedagogical Techniques for Virtual Class Room" organised by Dr. SSBUI CET, Panjab University in collaboration with Dibrugarh University Institute of Engineering and Technology during September 02-06, 2020. Delivered lecture on "MOOCs through SWAYAM and other digital initiatives by Govt. of India".
11. Resource person in TEQUIP-3 Sponsored one Week FDP on "Online Teaching and Assessment Pedagogy" organised by Dibrugarh University Institute of Engineering and Technology in collaboration with Dr. SSBUI CET, Panjab University during Aug. 24-29, 2020.
12. Resource person in TEQUIP-3 Sponsored one Week FDP on "E Content Development and Delivery" organised by Dibrugarh University Institute of Engineering and Technology in collaboration with Dr. SSBUI CET, Panjab University during Aug. 19-23, 2020. Delivered lecture entitled "MOOCs through SWAYAM and other Digital Learning Platforms" on Aug. 21, 2020.
13. Resource person in TEQUIP-3 Sponsored one Week FDP on "E Content Development and Delivery" organised by Dibrugarh University Institute of Engineering and Technology in collaboration with Dr. SSBUI CET, Panjab University during Aug. 19-23, 2020. Delivered lecture entitled "Managing Online meeting Platforms" on Aug. 20, 2020.
14. Resource person in one Week workshop on "Creation of E-content and courses: best Practices of Various Aspects of Online Teaching, Learning and Evaluation" organised by Institute for Development & Communication, Sector-38A, Chandigarh on Aug. 18, 2020. Delivered lecture on "Integration of ICT tools for Online Teaching and learning".
15. Resource person in an Interactive Talk on "MOOCs through SWAYAM and other digital initiatives by Govt. of India" organised by University Institute of Pharmaceutical Sciences, Panjab University, Chandigarh on July 29, 2020.
16. Resource person in one Week workshop on "Design Development and Delivery of e-content by Unit of Educational Studies" organised by Institute for Development & Communication, Sector-38A, Chandigarh on July 24, 2020. Delivered lecture on "Managing Online Classroom: Tools and

Techniques”.

17. Resource person in “10 Day International Multi-dimensional Student Development Programme” organised by Mehar Chand Mahajan DAV College from 20-30 July, 2020. Delivered lecture on “Massive Open Online course through SWAYAM”.
18. Delivered lecture entitled “**SWAYAM: A digital boon for learning**” on 28th Nov 2019, in the ‘Short Term Course on Research Methodology’ to be organised by University Institute of Applied Management Science, Panjab University, Chandigarh from 27th November to 3rd December 2019.
19. **Resource person at The State Council of Educational Research and Training (SCERT), U.T. Chandigarh**, for in-service training of Chemistry & Biology Lecturers of Govt. Schools in **Jan 2019**.
20. Invited as **Resource person** at Seminar on “Forensic Documents and Emerging Challenges” at **State Forensic Laboratory, Dharamshala (H.P.) March 30th, 2018**.
21. Delivered an invited talk entitled “Spectroscopic and multivariate analysis in writing inks” at **M.G. University, Kottayam (Kerala), India on 08 Dec, 2017**.
22. Delivered an expert talk in FDP entitled “*Nano-Forensics: Nanoscience Applications in Forensics*” at **CGC College of Engineering, Landran (Mohali), Punjab, India on 27 Sept. 2017**.
23. Delivered an **Invited Lecture** on Feb 17, 2017 in National Conference on Recent Advances in Materials Science and Spectroscopy (NCRAMSS-2017) on the topic “*Analytical methods combined with multivariate analysis for the characterization and discrimination of writing/photocopier paper types: Application in forensic document examinations*” organized by **Department of Physics, Shri Mata Vaishno Devi university Katra (J&K) and Laser and Spectroscopy society of India**.
24. Delivered a **DST INSPIRE Expert Lecture** on “Forensic Science- An Amalgamation Science” at **Chandigarh University, Gharuan (Mohali, Punjab), on November 28, 2016**.
25. Delivered an **Expert Lecture** on “Matter at Nanoscale: There is plenty of Applications at the Bottom” at Chandigarh University, Gharuan (Mohali, Punjab), on Oct 10, 2016.
26. Delivered a **DST INSPIRE Expert Lecture** on “Role of Science in Detecting Crime: Some recent Explorations” at Chandigarh University, Gharuan (Mohali, Punjab), on May 10, 2016.
27. Delivered a **DST INSPIRE Expert Lecture** on “Phosphor at Nanoscale: Application in latent fingerprint detection” at Chandigarh University, Gharuan (Mohali, Punjab), on April 08, 2016.
28. Delivered an **Invited Talk** on March 29, 2016 in National Conference in Recent Development in Physics on the topic “Detecting Crime with Science: Some Recent Explorations” at S.D. (PG) College Panipat (Haryana)
29. Invited as a **Resource Person/Invited talk** on “Analysis of Questioned Documents utilizing Analytical Techniques and Chemometrics” during the National Workshop on Recent Trends in Forensic Science and Its Utility at Forensic Science Section, Department of Anthropology, **University of Delhi**, on March 19, 2016.
30. Delivered a **guest lecture** on “Exploration of Nanotechnology in Forensics” 12nd Feb., 2016 at GNA University, Phagwara, Punjab.
31. Invited as a **Resource Person** in the Department of Science Technology (DST) Govt of India-Sponsored Innovation in Science Pursuit for Inspired Research (**INSPIRE**) Program/camp, lecture on the topic “Forensic Science: Its Current Scenario and Future Probabilities” from Jan 19, 2016 at

Chandigarh University Gharaun, Mohali (Punjab).

32. Invited as a **Resource Person** in the Department of Science Technology (DST) Govt of India-Sponsored Innovation in Science Pursuit for Inspired Research (**INSPIRE**) Program/camp lecture on the topic "Forensic Science in Service of man: Current Scenario and Future Probabilities" from Dec 23, 2015 at R.R. Bawa D.A.V.Girls College Batala (Punjab).
33. Delivered an **invited talk** in the faculty development program on "Nanotechnology in the service of Society" 13th July, 2015 at Chandigarh University, Gharaun Mohali (Punjab).
34. Invited as a **Resource Person** in the Department of Science Technology (DST) Govt of India-Sponsored Innovation in Science Pursuit for Inspired Research (**INSPIRE**) Program/camp from March 22 - 26, 2014 at Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib (Punjab).
35. Delivered an **Invited talk** on Utilization of Nanotechnology for Latent Fingerprint detection in Forensic Application, in National Conference on Recent Developments in Physics (NCRDP-2014) being organized by S.D. PG college Panipat on March 29-30, 2014

SESSION CHAIRED 09

1. Chaired a technical session of Oral presentations in the **National Conference on Recent Trends and Advancements in Forensic Science" RTAFS2023** from 16-18 March, 2023, **Punjabi University, Patiala, India.**
2. Chaired a technical session in the **International Conference on Recent Advances in Fundamental and Applied Sciences (RAFAS 2023)** held on 25 March 2023 organised by School of Chemical Engineering and Physical Sciences, **Lovely Professional University, Punjab.**
3. Chaired a session in the **National Conference on Recent Trends and Advancements in Forensic Science" RTAFS2023** from 16-18 March, 2023, **Punjabi University, Patiala, India.**
4. Chaired a technical session in the **International Conference on Recent Advances in Fundamental and Applied Sciences (RAFAS 2021)** held on 25-26 June 2021 organised by School of Chemical Engineering and Physical Sciences, **Lovely Professional University, Punjab.**
5. Session Chaired on 15-04-2018 in the Conference on **International Symposium on Functional Materials (ISFM-2018): Energy and Biomedical Applications** held at **Chandigarh** during 13-15 April 2018, session: Nanomaterials & Nanotechnology.
6. Chaired an oral session at One day National Seminar on Emerging Contours of Defence laws and National Security: Issues and Challenges on October 12, 2019 at **University Institute of Legal Studies, Panjab University, Chandigarh.**
7. Chaired a key note lecture (KL 1) of International Conference on Molecular Spectroscopy (ICMS 2017) from 08-10 December, 2017 at **M.G. University, Kottayam (Kerala) INDIA.**
8. Chaired an oral session (OA09) on **Questioned Documents** in an International conference "**21st Triennial Meeting of the International Association of Forensic Sciences 2017 (IAFS 2017)**" from August 21-25, 2017 at **Toronto (Canada).**

9. Chaired an oral session on **Functionized Nanomaterials & Nanocomposites II**, in **NanoSciTech 2016** Improving quality of life using Nanotechnology Potential role of polymers, held on 20 Feb, 2016 at Panjab University Chandigarh (INDIA).

INTERNATIONAL CONFERENCES

1. Presented an invited talk entitled "Questioned Documents and Chemometrics" in the International Scientific Conference, **20th Wroclaw Symposium** of Questioned Document Examination, **June 9-10, 2022, University of Wroclaw, Poland.**
2. Presented an invited lecture (online mode on Oct 08 2020) in The 19th Wroclaw Symposium on Questioned Document Examination from **October 7-8, 2020** at **University of Wroclaw, Poland.**
3. Presented an invited lecture in an International conference (International Conference on Molecular Spectroscopy (**ICMS 2017**) from **December 8-10, 2017**) at **M.G. University, Kottayam (Kerala) INDIA.**
4. Presented a research paper (Oral) in an International conference (**XIVth International Conference on Molecular Spectroscopy from Molecules to Functionals materials (ICMS 2017)** from **September 3-7, 2017**) at **Krakow, Poland.**
5. Presented a research paper (Poster) in an International conference "**21st Triennial Meeting of the International Association of Forensic Sciences 2017 (IAFS 2017)**" from **August 21-25, 2017 at Toronto (Canada).**
6. Presented a research paper (Oral) "*Combustion synthesis and characterization of blue long lasting phosphor $\text{CaAl}_4\text{O}_7 : \text{Eu}^{2+}, \text{Dy}^{3+}$ and its novel application in fingerprint and Lip mark detection*" in **7th South African Conference on Photonic Materials, 27-31 March, 2016, at University of Free State, Bloemfontein (South Africa).**
7. Presented a paper on Forensic Drug Analysis: Analytical Aspects in International Conference on Drug and Development, held on 8-9 April, 2016 at University Institute of Legal Studies, Panjab University Chandigarh.
8. Presented a paper on Preparation and characterization of $\text{Al}_2\text{O}_3 : \text{RE}^3$ in NanoSciTech 2016 Improving quality of life using Nanotechnology Potential role of polymers, held on 18-20 Feb, 2016 at Panjab University Chandigarh.
9. Presented an Oral paper on Recent Advances in Latent Fingerprint Detection in Forensic Applications Utilizing Nano-Phosphor in 7th International Conference on Current Trends in Forensic Sciences, Medicine & Toxicology, held on 29-31 Jan., 2016 at Hyderabad.
10. Amrita Das, **Vishal Sharma**, Manhar Singh, Preparation and Characterization of $\text{Al}_2\text{O}_3 : \text{Eu}^{2+}, \text{Dy}^{3+}$, in Asian Network of Natural and Unnatural Materials Department of Chemistry, Panjab University, Chandigarh 28th Feb- 2nd March 2015.
11. Presented a paper on $\text{SrAl}_2\text{O}_4\text{Eu}^{2+}, \text{Dy}^{3+}$ rare earth doped fluorescent nanoparticles A promising candidate for latent fingerprint detection in 4th International Colloid Conference by Elsevier on Surface Design Engineering, held on 15-18 June, 2014 at Madrid Spain.
12. Presented a talk on paper entitled Combustion Synthesis Characterization of inorganic $\text{SrAl}_2\text{O}_4\text{Eu}^{3+}$ and its Application in Latent Fingerprint in International Conference on Nanotechnology

NanoSciTech 2014, held on 13-15 February, 2014 at Panjab University, Chandigarh.

13. Presented an oral paper entitled Synthesis Characterization of $\text{Sr}_4\text{Al}_{14}\text{O}_{25}$: Eu, Dy Nano phosphor for Forensic Application in Latent Fingerprint Detection in International Conference on Frontiers in Nanoscience, nanotechnology their applications in the section of Futuristic applications of Nanotechnology, held on 16-18 February, 2012 at Panjab University, Chandigarh.
14. Presented a paper entitled Nanotechnology In Latent Fingerprint Detection In Forensic Application in International Conference on Innovations in Chemistry for Sustainable Development (ICSD-2011) held on 01-03 December, 2011 at Department of Chemistry, Panjab University, Chandigarh.
15. Presented a paper entitled Combustion synthesis of long after glow nanophosphors and their potential application in Latent Fingerprint detection in International Conference on Advanced and Nano Materials held on 22-26 February, 2011 at Department of Physics, Panjab University, Chandigarh.
16. Presented a research paper entitled Combustion synthesis of long after glow SrAl_2O_4 :Eu,Dy nanophosphors in Professor Ram Chand Paul International Conference held on 11-12 February, 2011 at Department of Chemistry, Panjab University, Chandigarh.
17. Presented a paper in Indo-German workshop on Synthesis Modification of Nano-Structured Materials by Energetic Ion Beams held on Feb. 20-24, 2005 organized with the collaboration of BMBF, Germany, DST, India at New Delhi, India.
18. Participated in International Indo-German School on Synthesis Modification of Nano-Structured Materials by Energetic Ion Beams held on Feb. 18-23, 2005 in Nuclear Science Centre, New Delhi, India.
19. Participated 21st International Conference on Nuclear Tracks in Solids (ICNTS21) held on Oct.21-25, 2002 in New Delhi, India.

Conferences/Seminars/Workshop Organized:

1. National Webinar Series 2021-22, Organised Web Lecture Title: "Forensic Examination of IEDs in Terrorist related cases" Distinguished Speaker: Dr. N.B. Bhardhan, Former Director, CFSL-CBI, New Delhi on MARCH 30, 2022.
2. National Webinar Series 2021-22, Organised Web Lecture Title: "Crime to Criminal(s)" Distinguished Speaker: Prof. Arun Sharma, Former Director, Directorate of Forensic Services, Himachal Pradesh on March 29, 2022.
3. National Webinar Series 2021-22, Organised web Lecture Title: "Forensic Investigation" Distinguished Speaker: Prof. S.K. Shukla, Director, NFSU, New Delhi Campus on March 28, 2022.
4. National Webinar series 2021-22, Web Lecture Title: "Forensic Toxicology an Overview" Distinguished Speaker: Prof. R.K.Sarin, NFSU campus, Goa, Ex-Director, APFSL, Mangalagiri & CFSL Hyderabad and FSL, Govt. of NCT of Delhi on March 26, 2022.
5. Special Lecture on "Role of Forensic Science in Justice delivery system with especial reference to sexual assault case examination" by Dr. I. Haque (Director, CFSL, Chandigarh) under National Webinar Lecture Series 2021-2022 on MARCH 22, 2022.
6. Special Lecture on Emerging Trends in Document Forgeries under National Webinar Lecture Series 2021-2022. Web Lecture Title: "Emerging Trends in Document Forgeries" by Sh Mohinder Singh, Former GEQD, Ministry of Home Affairs (Govt. of India) on MARCH 19 2022.
7. Organised a Special Lecture under International Web lecture series in the Department (IFSC) entitled **"DNA fingerprinting: Forensic and medico-legal perspectives"** by **Dr. K. Thangaraj, Director, The Centre for DNA Fingerprinting and Diagnostics (CDFD)-DBT (GOI), Hyderabad on March 24, 2022.**

8. Organised a Special Lecture under National Web lecture series in the Department (IFSC) entitled **“Forensic Science in India: A Path Forward”** by **Dr. S.K. Jain (Chief Forensic Science, MHA, GOI)** on OCTOBER 21, 2021.
9. Organised a Special Lecture under International Web lecture series in the Department (IFSC) entitled **“Forensic Gait Analysis: Principles, Analysis and Casework”** by **Dr. Michael Nirenberg** (American Society of Forensic Podiatry, USA) on OCTOBER 26, 2021.
10. **Served as the Conference Co-Chairs/ Convener** of International Symposium on Functional Materials (ISFM-2018): Energy and Biomedical Applications held at Chandigarh during 13-15 April 2018.
11. **Organised a National Workshop on “Computer and Voice Forensics”** at IFSC, Panjab University, Chandigarh on **March 29th, 2019**. **Role: Organizing Secretary**
12. **Organised a National Workshop on “Designing and Development of MOOCs”** at Panjab University, Chandigarh from **04th- 10th November, 2019**, under Centre for Academic Leadership & Education Management (CALEM) Under the Aegis of PMMMNTT, MHRD, in collaboration with SWAYAM CELL, Panjab University, Chandigarh. **Role: Programme Coordinator**
13. **Organised a National Seminar cum Workshop on “Academic Integrity, Plagiarism & Intellectual Property Rights”** from **December 23rd- 24th, 2019** at Panjab University, Chandigarh, under Centre for Academic Leadership & Education Management (CALEM) Under the Aegis of PMMMNTT, MHRD, in collaboration with SWAYAM CELL, Panjab University, Chandigarh. **Role: Programme Coordinator**

ADMINISTRATIVE RESPONSIBILITIES:

➤ **Institute level:**

- **Chairperson (Dec. 2020 – Dec 2023)**
Institute of Forensic Science & Criminology, Panjab University, Chandigarh
- **Coordinator, Centre for Skill Development & Entrepreneurship (June 2023 to till date)**
Panjab University, Chandigarh
- **Coordinator SWAYAM Cell (April 2019 to till date)**
Panjab University, Chandigarh
- **Warden (2012-2018)**
Teja Singh Hall, Boys Hostel No. 6
Panjab University, Chandigarh
- **Member, Science Faculty (2015 – 2017, 2017-19, 2019-2021, 2019-2023)**
Panjab University, Chandigarh
- **Member (2015-2017)**
PUCASH (Panjab University Committee against Sexual Harshment)

➤ **Department level:**

- **Member Board of Study (2011-till date)**
Institute of Forensic Science, P.U. Chandigarh

➤ **Grant/ Thesis Reviewer:**

- Expert in **Research Proposal Assessments of INDO-US SCIENCE & TECHNOLOGY FORUM** (an autonomous bilateral organization jointly funded by both Indian and US Governments), New Delhi, (A Statutory body under Department of Science & Technology, Government of INDIA), 2017.
- Ph.D. Thesis evaluation from various Universities from abroad.

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