



Dr. Virender Pratap Singh

Asst. Professor of Physics

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Academic/ Research Areas: *Material Science especially magnetic particle Nanotechnology*

An alumnus of Himachal Pradesh University, Shimla and emerging physicist from Material Research Lab focusing on the synthesis of various *ceramic and superfine materials, magnetic nanomaterials, magnetic nanowires systems, and multiferroics system* under the leadership of Prof. Mahavir Singh. Dr. Virender Pratap Singh has been involved in various research projects based on ceramic microstructures and hard nanohexaferrites materials. In his research field work, he obtained h-index of **twenty-three (23) with 51 (49+2) international publications** along with **2 - Young Scientist (international level) award and 2 national level awards**. He had supervised cum awarded **3-Ph. Ds** candidate in the field of magnetic nano ferrites along with **2-Patents**, guaranteed (**out of 9 filed**) by exploring his own field. He has also remained as Principal Investigator of **2-Scientific Projects** from National Agencies, **DRDO (27 Lakhs) & MNRE (24 Lakhs)**. He had done also collaborative research work with Dr. R. K. Kotnala, Chief Scientist, National Physics Lab, New Delhi, India and Dr. K.S. Daya, Dayalbagh Educational Institute, Agra, India. The other international collaborator of his research work are King Abdullah Institute for Nanotechnology, King Saud University, Riyadh, Saudi Arabia, LMBT, Sao Paulo Brazil, and Spin Device Technology Centre, Faculty of Engineering, Shinshu University, Nagano, Japan.

❖ Academic Degrees

Ph.D Experimental Condensed Matter Physics, Department of Physics ; HPU-Shimla, M.Phil Physics, Department of Physics, HPU, Shimla (69%); M.Tech HP University, Shimla(70%); MSc Physics(77.91%) with Specialization in Electronics & B Sc Non-medical (61.29%); HPU-Shimla and B.Ed; Jammu University(68%).

❖ Professional Experience

At presently, **Asst. Prof of Physics** at Govt. Degree College, Barsar (Hamirpur) (**4th March, 2022 onwards**) Asst. Prof. Of Physics, Govt. Degree College, Nadaun (Hamirpur) HP (**10th July, 2019 to 3rd March, 2022**), Asst. Prof. of Physics Deptt. of Physics, Govt. Degree College, Nerwa (Shimla) HP. (**21 June 2018 to 09th July, 2019**), Asst. Professor of Physics, Shoolini University (**6th August, 2010 to 20th June 2018**); Asst. Prof of Physics, Eternal University, Baru Sahib, Sirmour (H.P) (**24 Sept, 2008- 5th Aug. 2010**), Guest Lecturer in Physics, UIIT, Himachal Pradesh University (**2007**).

- ❖ **Area of Research** : Materials Science.
- **Problem of Research** : Bulk & Nano-Ferrites.
- **Research Experience** : **8 Years.**
- **Teaching Experience** : **12 Years**

❖ **Background Knowledge:**

Synthesis of Bulk and Nanoferrites by:

1. *Citrate Precursor Technique.*
 2. *Solution Combustion Technique.*
 3. *Co-precipitation.*
 4. *Sol-gel Technique.*
 5. *Solid State Techniques.*
- **Structural Study:** X-ray diffraction (XRD).
 - **Topographical Study** Scanning Electron Microscopy (SEM) and TEM.
 - **Magnetic measurements:** VSM, LCR.
 - **Electrical measurements:** LCR, KEITHLEY.
 - **Electronic Spin Coater for synthesis of nanowire systems**

- ❖ **Research Experience at CSIR Laboratory:** Synthesized samples and carried out scientific measurements during the Ph.D. period at National Physical Laboratory (CSIR), Dr. K. S. Krishnan Marg (Pussa), New Delhi, India, in the laboratory of **Dr. R. K. Kotnala** (Chief Scientist and Head, Multiferroic & Magnetic Standards).

❖ **Project handled :** **02**

- ✓ Working as a PI (Project No. ERIP/PR/1303129/M/01/1564) entitled “**Development of lead free Piezoelectric Nanofibres Via Electrospinning for Piezoelectric Energy Harvesting**”. Sectioned Agency DRDO & total Cost of the project **26, 89,620/-**.
- ✓ **Development Research Project completed from outside funding agencies: 01** “Solar Steam Cooking System for 500 Persons” - **24 Lacks** from MNRE funding agencies is completed during 2011- 2014, at Shoolini University, Bajhol Solan, India

❖ **Teaching Experience & Subjects Details:****14 yrs**

<i>S.No.</i>	<i>Courses</i>	<i>Credits</i>	<i>UG/PG - Level</i>
1.	Engineering Physics	3+1	UG
2.	Waves and Optics	3+1	UG
3.	Nuclear Physics	3+1	UG
4.	Atomic and Molecular Physics	3+1	UG
5.	Classical Mechanics	4	UG & PG
6.	Mathematical Physics	4	UG & PG
7.	Electrodynamics/E & M	4	UG & PG
8.	Condensed Matter Physics /Solid State Physics	4	UG & PG
9.	Advanced Electronics	4	UG
10.	Nanotechnology	2	PG
11.	Material Science	2	UG & PG

❖ **Ph.Ds Scholars Supervised:****03**

1. Mr. Rohit Jasrotia (Registration No. 1737601001); Thesis entitled as “**Study of Structural, Electrical and Magnetic properties of Mg-Mn (Ag⁺) Spinel and BaM (Cd²⁺/In³⁺) Hexagonal Ferrite based Nanomaterials Synthesized by Sol-Gel Auto-Combustion Technique**” submitted to **School Of Physics and Material Sciences, Shoolini University of Biotechnology and Management Sciences, Solan (H.P.)**
2. Mrs. Monika Chandel (Registration No. 1737701003), thesis entitled “**Structural, Electrical and Magnetic Properties of Lanthanum and Dysprosium Substituted Ferrite Based Nanomaterials Synthesized by Sol-gel Technique**” submitted for the award of degree of **Doctor of Philosophy** to Shoolini University of Biotechnology and Management Sciences, Solan (H.P.) is original research work carried out by me under the guidance and supervision of Dr. Virender Pratap Singh.
3. Mrs. Kirti Singha (Registration No. 1737701004); thesis entitled as “**Study of Holmium and Yttrium Substituted (Co₂Z) Ferrite Based Nanomaterial Synthesized by Sol-gel Autocombustion Technique**” submitted to **School Of Physics and Material Sciences, Shoolini University of Biotechnology and Management Sciences, Solan (H.P.)**

1. Cd-Mg Nano ferrites systems
2. Ni-Zn nanomaterial synthesis
3. Y-type nanohexaferrites system
4. M-Type nanohexaferrites system
5. ZnO based materials synthesis.
6. Bismuth ferrite multiferroic synthesis and characterization
7. Cobalt based nanomaterial synthesis and their characterization.
8. Study of structural properties of Cd/In ($x=0.1$) doped M-type nanohexaferrite synthesized by Sol-gel auto-combustion technique
9. Study of structural properties of Cd/In ($x=0.3$) doped M-type Nanohexaferrites synthesized by Sol-gel auto combustion technique.
10. Structural Study of W-type Nanohexaferrites Material synthesized by sol-gel Technique.
11. Structural Study of M-type Nanohexaferrites Material synthesized by sol-gel Technique.
12. Synthesis and characterization of magnesium manganese ferrite
13. Synthesis and Characterization of silver doped manganese magnesium ferrite
14. Study of structural property of Cd/In($X=0.2$) doped M type Nanohexaferrites synthesized by Sol-Gel auto-combustion Method
15. Study of structural properties and morphology of Ag doped W-type strontium nanohexaferrite synthesized by Sol-gel auto-combustion technique.
16. Study of W-type nanohexaferrite material synthesized by Sol-gel technique
17. Synthesis and characterization doped silver magnesium manganese ferrite
18. Synthesis and characterization of silver doped magnesium manganese ferrite
19. Synthesis and Characterization of W-Type Hexaferrite by Sol-Gel Method
20. Synthesis and Characterization of W Type Hexaferrite By Sol-Gel Method

❖ **PUBLICATIONS /RESEARCH PAPERS IN INTERNATIONAL JOURNALS:**

- [1] **“Virender Pratap Singh**, Gagan Kumar, Arun, Radhey Shyam Rai, M.A. Valente, R. K. Kotnala and M. Singh Structural, magnetic and Mössbauer study of La-doped Barium hexaferrites, processed via sol-gel technique,” *Ceramics International (Elsevier)*, **42 (2016),5011 -5017, ISSN:0272-8842, Impact factor -2.758.**
- [2] **Virender Pratap Singh**, Gagan Kumar, R. K. Kotnala, Jyoti Shah, Sucheta Sharma, K. S. Daya, Khalid M. Batoo, M. Singh, “Remarkable magnetization with ultra-low loss BaGd_xFe_{12-x}O₁₉ nano-hexaferrites for applications up to C-band”, *J. Magn. Magn. Mater., (Elsevier)* **378 (2015) 478–484, ISSN : 0304, Impact factor -2.357.**
- [3] **Virender Pratap Singh**, Gagan Kumar, Jyoti Shah, Arun Kumar, R. K. Kotnala, and Mahavir Singh, “Investigation of super-exchange interactions in BaHo_xFe_{12-x}O₁₉ (0.1 ≤ x ≤ 0.4) nano-hexaferrites and exploration at ultra high frequency region” *Ceramics International, (Elsevier)* **41 (2015) 11693–11701, ISSN:0272-8842, Impact factor -2.758.**
- [4] **Virender Pratap Singh**, Gagan Kumar, Pooja Dhiman, R. K. Kotnala, Jyoti Shah, Khalid M. Batoo and M. Singh “Structural, dielectric and magnetic properties of nanocrystalline BaF₁₂O₁₉ hexaferrite processed via sol-gel technique”, *Advanced Materials Letters(VBRI,Press)*, **5 (2014) 447, ISSN: 0976-3961, Impact factor 1.90.**
- [5] **Virender Pratap Singh**, Rohit Jasrotia, Rajesh Kumar, Pankaj Raizada, Sourbh Thakur Khalid M. Batoo and M. Singh, “A current review on the synthesis and magnetic properties of M-type hexaferrites material”, *World Journal of Condensed Matter Physics (WJCMPS) Scientific research Publishing*, **8 (2018), 36-61, ISSN Online: 2160-6927, ISSN Print: 2160-6919.**
- [6] **Virender Pratap Singh**, Khalid Mujasam Batoo, M. Singh, Sanjeev Kumar, Gagan Kumar “Giant magnetization and ultra-low loss in non-magnetic ion-substituted barium nano-hexaferrite matrix” , *J Mater Sci: Mater Electron (Journal of Materials Science: Materials in Electronics)*,**Springer, 31, 3951–3959 (2020), ISSN 0957-4522, DOI: <https://doi.org/10.1007/s10854-020-02943-5>**
- [7] Jasrotia R, **Singh VP**, Kumar R, Singh M., “Raman spectra of sol-gel auto-combustion synthesized Mg-Ag-Mn and Ba-Nd-Cd-In ferrite based nanomaterials”, *Ceramics International. (Elsevier)* **2020; 46(1):618–621. ISSN:0272-8842**
- [8] Jasrotia R, **Singh VP**, Kumar R, Verma R, Chauhan A. Effect of Y³⁺, Sm³⁺ and Dy³⁺ ions on the microstructure, morphology, optical and magnetic properties NiCoZn magnetic nanoparticles. *Results in Physics, (Elsevier)*, **2019; 15:102544, ISSN: 2211 -3797, Impact factor 3.04**
- [9] Jasrotia R, Kumar G, Batoo KM, Adil SF, Khan M, Sharma R, et al. Synthesis and characterization of Mg-Ag-Mn nano-ferrites for electromagnet applications. *Physica B: Condensed Matter, (Elsevier)*, **2019; 569:1–7, ISSN 0921-4526 Impact Factor 1.874**
<https://doi.org/10.1016/j.physb.2019.05.033>

- [10] Jasrotia R, **Singh Virender Pratap**, Kumar R, Singha K, Chandel M, Singh M., “Analysis of Cd²⁺ and In³⁺ doping on microstructure, optical, magnetic and mossbauer spectral properties of sol-gel synthesized BaM hexagonal ferrite based nanomaterials” ***Results in Physics***. (*Elsevier*), 2019; 12:1933–1941. **ISSN: 2211 -3797, Impact factor 3.04**
- [11] Rohit Jasrotia, Pooja Puri, Ankit Verma, **Virender Pratap Singh**, “Magnetic and electrical traits of sol-gel synthesized Ni-Cu-Zn nanosized spinel ferrites for multi-layer chip inductors application” ***Journal of Solid State Chemistry*** , 289 (Sept. 2020), 121462. <https://doi.org/10.1016/j.jssc.2020.121462>
- [12] Rohit Jasrotia **Virender Pratap Singh**, Bhawna Sharma Ankit Verma Pooja Puri Rajesh Sharma Mahavir Singh, “Sol-gel synthesized Ba-Nd-Cd-In nanohexaferrites for high frequency and microwave devices applications” ***Journal of Alloys and Compounds***, (*Elsevier*), 830 (25 July 2020) 154687. **ISSN No 0925-8388 and Impact Factor 4.65**
- [13] Rohit Jasrotia, Pooja Puri, **Virender Pratap Singh**, Rajesh Kumar, “Sol–gel synthesized Mg–Ag–Mn nanoferrites for Power Applications” ***Journal of Sol-Gel Science and Technology***, (*Springer*), **97**, pages 205–212 (2021) Issue –I /2021, **ISSN 0928-0707, Impact Factor 1.986**
DOI 10.1007/s10971-020-05428-3
- [14] Rohit Jasrotia, Satvinder Kour, Pooja Puri, Allah Dekama Jara, Bikram Singh, Chandan Bhardwaj, **Virender Pratap Singh**, Rajesh Kumar, “Structural and Magnetic Investigation of Al³⁺ and Cr³⁺ substituted Ni-Co-Cu nanoferrites for Potential Applications”, ***Solid State Sciences*** ,**Volume 110**, December 2020, 106445, **ISSN: 1293-2558. Impact Factor 2.34**
<https://doi.org/10.1016/j.solidstatesciences.2020.106445>
- [15] Kirti Singha, **Virender Pratap Singh**, Monika Chandel, Nain Jeet Singh Negi, Susheel Kalia and R. K. Kotnala, Influence of Ho–Ni–Mn substitution on the structural and magnetic behavior of Ba–Sr Co₂Z-type nanohexaferrites extension up to Mossbauer investigations, ***Applied Physics A, Materials Science & Processing***, **125 (12):824 (2019)**, **ISSN 0947-8396**
- [16] Kirti Singha, **Virender Pratap Singh**, Monika Chandel, Nain Jeet Singh Negi, Susheel Kalia and R. K. Kotnala, “A Study of Magnetic Properties of Y-Ni-Mn Substituted Co₂Z-type Nanohexaferrites via Vibrating-Sample Magnetometry”, ***Journal of Sol-Gel Science and Technology*** ,**97**, pages 373–381 (2021)
- [17] Monika Chandel , **Virender Pratap Singh**, Kirti Singha, Susheel Kalia , Rajesh Kumar, Gagan Kumar, M. Singh, “Structural, magnetic and Mossbauer analysis of lanthanum and nickel doped Co₂Y-type hexaferrite nanomaterial matrix synthesized by solgel auto-combustion technique”, ***Journal of Molecular Structure***, 1205 (2020) 127623, **ISSN: 0022-2860, Impact factor 2.120**

- [18] Monika Chandel, **Virender Pratap Singh**, Rohit Jasrotia Kirti Singha, M.Singh, Pankaj Thakur Susheel Kalia, “Fabrication of Ni²⁺ and Dy³⁺ substituted Y-Type nanohexaferrites: A study of structural and magnetic properties” *Physica B: Condensed Matter*, 595 (2020), 412378, ISSN: 0921-4526, Impact Factor: 1.902 <https://doi.org/10.1016/j.physb.2020.412378>
- [19] Monika Chandel, **Virender Pratap Singh**,* Rohit Jasrotia, Kirti Singha and Rajesh Kumar, “A review on structural, electrical and magnetic properties of Y-type hexaferrites synthesized by different techniques for antenna applications and microwave absorbing characteristic materials”, *AIMS Material Science*, 7 (3) (2020), 244-268, ISSN 2372-0484 doi: [10.3934/mat.2020.3.244](https://doi.org/10.3934/mat.2020.3.244)
- [20] Gagan Kumar, **Virender Pratap Singh**, Arun Kumar, Jyoti Shah, Shalendra Kumar, B S Chauhan, R K Kotnala, M Singh, “Estimation of magnetic interactions in substituted Mg-Mn ferrites synthesized via citrate precursor technique”, *Advanced material letter*, 6(7) (2015), 585-591, ISSN: 0976-3961, Impact factor 1.90
- [21] Gagan Kumar, **Virender Pratap Singh**, Arun Kumar, Jyoti Shah, Sagar E. Shirsath, B. S. Chauhan, R. K. Kotnala, M. Singh “Structural analysis and evaluation of magnetic exchange interactions via cation distribution technique in Mg_{0.9}Mn_{0.1}Al_xFe_{2-x}O₄ ferrites”, *Applied Science Letter*, 1(4) (2015), 105-109, ISSN 2394-5001.
- [22] “Kuldeep Chand Verma, **Virender Pratap Singh**, Mast Ram, Jyoti Shah, R.K.Kotnala “A structural, micro structural and magnetic properties of NiFe₂O₄, CoFe₂O₄ and MnFe₂O₄ multiferroic thin films”, *J. Magn. Magn. Mater.*, 323 (2011) 3271, ISSN : 0304, Impact factor -2.357
- [23] Gagan Kumar, Jyoti Shah, R. K. Kotnala, Pooja Dhiman, Ritu Rani, **Virender Pratap Singh**, Godawari Garg, Sagar E. Shirsath, Khalid M. Batoo, M. Singh “Self-ignited synthesis of Mg-Gd-Mn nanoferrites and impact of cation distribution on the dielectric properties”, *Ceram. Inter*, 40 (2014) 14509, ISSN:0272-8842, Impact factor -2.758.
- [24] Gagan Kumar, Jyoti Shah, R.K. Kotnala, **Virender Pratap Singh**, Meenakshi Dhiman, Sagar E.Shirsath, M. Shahbuddin, Khalid M. Batoo, M.Singh “Mössbauer spectroscopic analysis and temperature dependent electrical study of Mg_{0.9}Mn_{0.1}Gd_yFe_{2-y}O₄ nanoferrites”, *J. of Magn. and Magn. Mater.*, 390 (2015) 50–55, ISSN : 0304, Impact factor -2.357.
- [25] Gagan Kumar, Jyoti Shah, R. K. Kotnala, **Virender Pratap Singh**, Sarveena, Godawari Garg, Sagar E. Shirsath, Khalid M. Batoo and M. Singh “Superparamagnetic behavior and evidence of weakening in super-exchange interactions with the substitution of Gd³⁺ ions in the Mg-Mn nanoferrite matrix”, *Materials Research Bulletin*, 63 (2015) 216-225, ISSN: 0025-5408, Impact factor 2.4.
- [26] Somnath, Indu Sharma, R.K.Kotnala, M.Singh, ArunKumar, Pooja Dhiman **Virender Pratap Singh**, Kartikey Verma Gagan Kumar, “Structural, magnetic and Mössbauer studies of Nd-doped Mg-Mn ferrite nanoparticles”, *Journal of Magnetism and Magnetic Materials*, 444 (2017), 77-86, ISSN : 0304, Impact factor -2.357.

- [27] Divya Gupta, Devender Singh, N.C. Kothiyal, Adesh K. Saini, **Virender Partap Singh**, Deepak Pathania “Synthesis of chitosan-g-poly(acrylamide)/ZnS nanocomposite for controlled drug delivery and antimicrobial activity”, *International Journal of Biological Macromolecules* **74** (2015) 547–557, **ISSN 0141-8130, Impact factor 3.138.**
- [28] Pankaj Raizadaa, Jyoti Kumari, Pooja Shandilya, Rashi Dhiman, **Virender Pratap Singh**, Pardeep Singh, “Magnetically retrievable Bi₂WO₆/Fe₃O₄ immobilized on graphene sand composite for investigation of photocatalytic mineralization of oxytetracycline and ampicillin”, *Process Safety and Environmental Protection* **106** (2017) 104-106, **ISSN 0957-580, Impact factor 2.594.**
- [29] Sourav Gautam, Pooja Shandilya, Bhanu Priya, **Virender Pratap Singh**, Pankaj Raizada, Radheshyam Rai, M.A. Valente, Pardeep Singh, “Superparamagnetic MnFe₂O₄ dispersed over graphitic carbon sand composite and bentonite as magnetically recoverable photocatalyst for antibiotic mineralization”, *Separation and Purification Technology* **172** (2017) 498–511, **ISSN 1383 – 5866, Impact factor 3.758.**
- [30] Sourav Gautam, Pooja Shandilya, **Virender Pratap Singh**, Pankaj Raizada, Pardeep Singh “Solar photocatalytic mineralization of antibiotics using magnetically separable NiFe₂O₄ supported onto graphene sand composite and bentonite”, *Journal of Water Process Engineering*, **14** (2016) 86–100, **ISSN 2214 – 7144, Impact Factor 2.54.**
- [31] Pardeep Singh, Sourav Gautam, Pooja Shandilya, Bhanu Priya, **Virender P. Singh**, Pankaj Raizada, “Graphene bentonite supported ZnFe₂O₄ as superparamagnetic photocatalyst for antibiotic degradation”, *Advanced Materials Letters*, 2017, **8(3)** 229-238, **ISSN: 0976-3961, Impact factor 1.90.**
- [32] Pankaj Raizada, Pankaj Thakur, Pradeep Kumar, Vinod Kumar Gupta, **Virender Pratap Singh**, Rajesh Kumar, "Solar light assisted degradation of oxytetracycline from water using Bi₂O₃/Fe₃O₄ supported graphitic carbon nitride photocatalyst", *Journal of "Desalination and Water Treatment"* **148** (2019) 338–350, **ISSN 0011-9164**
- [33] Rashmi Sharma, **Virender Pratap Singh**, Sahil Kumar, Palvee Sharma, M. Singh, Gagan Kumar, “Effect of Cu²⁺ substitution on the structural properties of Mg-Mn nanoferrites” *Materials Today: Proceedings (2020)*. Volume 33, Part 3, 2020, Pages 1568-1572, **ISSN No. 2214-7853**
- [34] Jasrotia R, **Singh VP**, Sharma RK, Kumar P, Singh M. Analysis of effect of Ag⁺ ion on microstructure and elemental distribution of strontium W-type hexaferrites. In: AIP Conference Proceedings. **AIP Publishing; 2019. p. 140004.** AIP Conference Proceedings **2142**, 140004 (2019), ISSN No.1551-7616 ; <https://doi.org/10.1063/1.5122517>
- [35] Jasrotia R, **Singh VP**, Sharma RK, Singh M. Analysis of optical and magnetic study of silver substituted SrW hexagonal ferrites. In: AIP Conference Proceedings. AIP Publishing; 2019. p. 090004. AIP Conference Proceedings, Volume 2142, Issue 1, id.090004, **ISSN No.1551-7616**

- [36] Kour S, Sharma RK, Jasrotia R, **Singh VP**. A brief review on the synthesis of maghemite (γ -Fe₂O₃) for medical diagnostic and solar energy applications. In: AIP Conference Proceedings. AIP Publishing; 2019. p. 090007. AIP Conference Proceedings **2142**, 090007 (2019); <https://doi.org/10.1063/1.5122451>
- [37] Satvinder Kour, Rohit Jasrotia, Pooja Puri, Ankit Verma, Bhawna Sharma, **Virender Pratap Singh**, Rajesh Kumar and Susheel Kalia, “Improving photocatalytic efficiency of MnFe₂O₄ ferrites via doping with Zn²⁺/La³⁺ ions: photocatalytic dye degradation for water remediation” published in Springer, Environmental Science and Pollution Research (2021).1614-7499; <https://doi.org/10.1007/s11356-021-13147-7>
- [38] Rohit Jasrotia, Jyoti Prakash, Gagan Kumar, Ritesh Verma, Swati Kumar, Sachin Kumar, **Virender Pratap Singh**, Ashok Kumar Nadda, Sushil Kumar, “Robust and sustainable Mg_{1-x}Ce_xNi_yFe_{2-y}O₄ magnetic nanophotocatalysts with improved photocatalytic performance towards photodegradation of crystal violet and rhodamine B pollutants”, published in Chemosphere (Impact Factor 7.08), Elsevier, Volume 294, May 2022, 133706, ISSN No: **0045-6535**; <https://doi.org/10.1016/j.chemosphere.2022.133706>
- [39] Ateendra Pandey, Ankush Chauhan, Shankroop Ghoshal, **Virender Pratap Singh**, Yashwant Singh and Rajesh Kumar, “Comparative Analysis of Dusty and Clean Photovoltaic Panels” Cite as: AIP Conference Proceedings **2357**, 040024 (2022); <https://doi.org/10.1063/5.0080619>, Published Online: 09 May 2022
- [40] Satvinder Kour, Rohit Jasrotia, Nisha Kumari, **Virender Pratap Singh**, Pardeep Singh and Rajesh Kumar, “A Current Review on Synthesis and Magnetic Properties of Pure and Doped Manganese Ferrites” Cite as: AIP Conference Proceedings **2357**, 050007 (2022); <https://doi.org/10.1063/5.0080692> Published Online: 09 May 2022
- [41] Sachin Godara, Varinder Kaur, Rohit Jasrotia, Suman, Sourabh Thakur, **Virender Pratap Singh** Jahangir Ahmad, Saad Aishehri, Bidhan Pandit, Mandeep Singh, Paramjeet Kaur, Jibrim Mohammad, Mankamal Preet Kaur and Aswani Sood “Effect of Ca²⁺ Exchange at Ba²⁺ site on the structural, dielectric, morphological and magnetic traits of Barium nanohexaferrites, published, J. Magn. Mater., (Elsevier) (2022), ISSN : 0304, Impact factor -2.993.
- [42] **(BEST PAPER PRESENTATION AWARDS, 2023)**
Virender Pratap Singh, Narinder Singh, Sarita, Mukul, Manoj Kumar Dogra, Dinesh Pathak, Mahavir Singh, “The future solution for environmental issues responsible for climate change by numerous nanostructures: A review” published in **the proceedings of 1st Edition, 2023 in 2nd International Conference on Mathematics in Space and Applied Sciences (ICMSAS-2023)**, March 03-04, 2023, organized by Department of Mathematics, NSCBM Govt. College, Himachal Pradesh, India. **ISBN: 978-81-947143-1-6**
- [43] Kirti Singha, Rohit Jasrotia, Himanshi, Louis WY. Liu, Jyoti Prakash, Ankit Verma, Pawan Kumar, Sachin Kumar Godara, Monika Chandel, **Virender Pratap Singh**, Sourbh Thakur, Ranjan Das, Abhishek Kandwal, H.H. Hegazy k, Pankaj Sharma, “A review of Z-type hexaferrite based magnetic nanomaterials: Structure, synthesis, properties, and potential applications” published in Journal of “**Progress in Solid State Chemistry**”, Elsevier Publishing House (in Press); **Impact Factor- 8.2**

❖ **Book Published:** **01**

- [44] Sushil Kalia, Rohit Jasrotia and **Virender Pratap Singh**, “**Magnetic Nanoferrites and Their Composites, Environmental and biomedical Applications**, published in **Woodhead Publishing Series in composite Science and Engineering (Elsevier), USA/UK ;ISBN:978-o-323-96115-8**

❖ **Book Chapter published:** **03**

- [44] Virender pratap Singh, Gagan Kumar, Ramprakash Dwivedi, K.M. Batoo, R.K. Kotnala and Mahavir Singh “**M-Type Barium Nanohexaferrite Material: A Novel Entrant for Storage Enrichment and High Frequency Applications**” is contributed in “**Smart materials for smart Living**”, Nova Science publishers (2017) (DLC) 2017036207, Inc USA, ISBN 9781536122695 1536122696, ix, 388 pages ; 26 cm, pp.303-336.
- [45] Enza Torinob, Deepika Jamwal, Kritika Sood, Virender Pratap Singh, Pardeep Singh and Pankaj Thakur, “**Bio-Inspired Polymer Composite: Robust Biomedical Application Podium**, is contributed in **Modified Biopolymers Challenges and Opportunities**, Nova Science publishers, Inc USA, ISBN 978-1-53612-116-2,Chapter 11, pp 261.
- [46] Jyotendra Nath, **Virender Pratap Singh**, Rishabh Sehgal, Shashikant Kumar, Vijay Kumar and Rakesh Sehgal, “Utilisation of magnetic nanoferrite-based photocatalysts for elimination of organic pollutants from wastewater”, is contributed in “**Magnetic Nanoferrites and Their Composites, Environmental and biomedical Applications**, Woodhead Publishing Series in composite Science and Engineering (Elsevier), USA/UK, ISBN:978-o-323-96115-8

❖ **Patent Filed: 09; Patent Guaranteed: 02**

1. **Inventors: Dr Virender Pratap Singh**, Dr Gagan Kumar, Dr R.K. Kotnala, Dr Mahavir Singh
Title of the invention: HEXAFERRITES NANOMATERIALS AND MICROWAVEAPPLICATIONS THEREOF, Application number TEMP/E-1/35559/2017-DEL.
2. **Inventors:** Rajesh Sharma, Rohit Jasrotia, **Dr.Virender Partap Singh**, Mahavir Singh
Title of the invention: NANOFERRITES FOR MEMORY STORAGE
3. **Inventors:** Rohit Jasrotia, **Dr. Virender Pratap Singh**, Dr. Rajesh Kumar, Dr. Mahavir Singh
Title of the invention: SYNTHESIS OF SILVER SUBSTITUTED Mg-Mn NANOFERRITES FOR APPLICATION IN RECORDING MEDIA
4. **Inventors:** Rohit Jasrotia, **Dr. Virender Pratap Singh**, Dr. Mahavir Singh, Dr. Rajesh Kumar
Title of the invention: SYNTHESIS OF SILVER DOPED STRONTIUM W-TYPE NANOHEXAFERRITES FOR MAGNETIC RECORDING APPLICATION

5. **Inventors:** Mr. Rohit Jasrotia, **Dr. Virender Pratap Singh**, Dr. Rajesh Kumar, Dr. Mahavir Singh
Title of the invention: SOL-GEL SYNTHESIZED BARIUM M-TYPE HEXAGONAL FERRITES FOR HIGH DENSITY RECORDING MEDIA APPLICATION
6. Sol-gel synthesized Ba-Nd-Cd-In nanohexaferrites for Power Applications.
7. Synthesis and characterization of $\text{La}^{3+}/\text{Ni}^{2+}$ ions doped Co_2Y -type hexagonal nanoferrites matrix for electromagnets applications.
8. Electrical and Dielectric measurements of $\text{La}^{3+}/\text{Ni}^{2+}$ and $\text{Dy}^{3+}/\text{Ni}^{2+}$ substituted $\text{Sr}_2\text{Co}_2\text{Fe}_{12}\text{O}_{22}$ Y-type hexaferrites for High Frequency Application.
9. Synthesis of silver substituted Mg-Mn nanoferrites for application in recording media.

❖ **PAPERS PRESENTED IN CONFERENCES AND SYMPOSIUMS:**

- [1] **Virender Pratap Singh**, “Scientific Values to be a good researcher in the field of nanotechnology” in National Seminar on Human Values in Diverse Culture (Saturday 11th December, 2021) organised by Internal Quality Assurance Cell at Sidharth Govt. Degree College, Nadaun (Hamirpur) H. P
- [2] **Dr. Virender Pratap Singh**, “Role of women in various fields of Sciences” in National Conference ON RETHINKING GENDRE EQUALITY THROUGH WOMEN EMPOWERMENT: AN INDIAN PERSPECTIVE, 29th -30th November, 2019, organized by Sidhath Govt. College, Nadaun, Distt. Hamirpur.
- [3] Rohit Jasrotia and **Virender Pratap Singh**, “Analysis of Structural, optical and magnetic behaviour of Silver substituted Mg-Mn ferrite nanomaterials by sol-gel technique”, in INTERNATIONAL CONFERENCE ON SCIENCE: EMERGING SCENARIO & FUTURE CHALLENGES (SESFC-2018), 08-09 Sept, 2018 organized by HSCA at National Institute of Technology (NIT), Hamirpur, HP (India).
- [4] Kirti Singha, **Virender Pratap Singh**, Arun Kumar, and M. Singh, “Effect of Ho/Ni/Mn dopants on structural and magnetic properties of Ba-Sr Z-type nanohexaferrite $\text{Ba}_{1.5}\text{Sr}_{1.5}\text{Co}_{2-z}\text{Ho}_z\text{Mn}_x\text{Ni}_y\text{Fe}_{24-x-y}\text{O}_{41}$ (where $x = y = 0.0, 0.1, 0.2, 0.3$ & $z = 0.0, 0.05, 0.10, 0.15, 0.20$) nanoparticles matrix synthesized by Sol-gel auto combustion technique” in INTERNATIONAL CONFERENCE ON SCIENCE: EMERGING SCENARIO & FUTURE CHALLENGES (SESFC-2018), 08-09 Sept, 2018, 2018 organized by HSCA at National Institute of Technology (NIT), Hamirpur, HP (India).
- [5] Monika Chandel, **Virender Pratap Singh** and Mahavir Singh, “Role of La/Ni substitution on the structural and magnetic properties of Y-type ($\text{Sr}_{2-y}\text{La}_y\text{Co}_2\text{Ni}_x\text{Fe}_{12-x}\text{O}_{22}$) nanohexaferrites”, in INTERNATIONAL CONFERENCE ON SCIENCE: EMERGING SCENARIO & FUTURE CHALLENGES (SESFC-2018), 08-09 Sept,

- 2018, 2018 organized by HSCA at National Institute of Technology (NIT), Hamirpur, HP (India).
- [6] **Virender Pratap Singh**, Brijesh Kumar, Shivani, Isha and Mahavir Singh, “Study of $\text{Ni}_{0.5}\text{Cd}_{0.5}\text{Fe}_2\text{O}_4/\text{Mg}_{0.9}\text{Cd}_{0.1}\text{Fe}_2\text{O}_4$ nanoparticles incorporated by Sol-gel auto combustion Techniques” in INTERNATIONAL CONFERENCE ON SCIENCE: EMERGING SCENARIO & FUTURE CHALLENGES (SESFC-2017), 01-02 July, 2017 organized by HSCA at Atal Bihari Vajpayee, Institute of Mountaineering and Allied Sports, Manali, HP (India).
- [7] Shivani Sharama, Isha and **Virender Pratap Singh**, “Impact of Cadmium on basic properties of Ni/Mg ferrite nanoparticles integrated by Sol-gel auto ignition Techniques” in National conference on Environmental and Natural Resource Management, 23-24 Feb, 2017, organized by Faculty of Basic Sciences & CRHSD, Shoolini University, Bajhol, Solan (H.P), India.
- [8] **Virender Pratap Singh**, Gagan Kumar, Rekha Sharma, Somnath Thakur, Neha Sharma and M. Singh, “Ground-breaking hybrid Magnetic materials for storage enrichment”, in National conference on Environmental and Natural Resource Management, 23-24 Feb, 2017, organized by Faculty of Basic Sciences & CRHSD, Shoolini University, Bajhol, Solan (H.P), India.
- [9] Kalpana Devi, Neeshu, Ritika and **Virender Pratap Singh**, “Auxiliary investigation of Zinc Oxide nanoparticles integrated by Solution burning Technique” in National conference on Environmental and Natural Resource Management, 23-24 Feb, 2017, organized by Faculty of Basic Sciences & CRHSD, Shoolini University, Bajhol, Solan (H.P), India.
- [10] **Virender Pratap Singh**, Gagan Kumar, Arun Kumar, R. K. Kotnala and M. Singh, “Ultra low loss and extremely magnetic rare earth doped hard nanoparticles for microwave applications”, in 3rd NATIONAL CONFERENCE ON MULTIFUNCTIONAL ADVANCED MATERIALS (MAM-2016), May 11-13, 2016 organized by “HIMALAYAN CENTER OF EXCELLENCE IN NANOTECHNOLOGY” School of Basic Sciences, Shoolini University Bajhol, Solan, HP, India.
- [11] **Virender Pratap Singh**, Gagan Kumar, Arun Kumar, R. K. Kotnala and M. Singh, “Mössbauer analysis of Lathenium doped M-type Barium nano hexaferrites processed via sol-gel technique”, in INTERNATIONAL CONFERENCE ON SCIENCE: EMERGING SCENARIO & FUTURE CHALLENGES (SESFC-2016), 11-12 June, 2016 organized by HSCA at Hotel INCLOVER, Dharamsala, HP (India).
- [12] **Virender Pratap Singh**, Gagan Kumar, Arun Kumar, R. K. Kotnala and M. Singh, Ultra low loss and extremely magnetic Nd/Cd doped hard nanoparticles for microwave applications, National Conference on Smart Materials, 26-27 Dec 2015, organized by Himachal Pradesh Society of Management and Pharmaceutical Sciences. (**Young Scientist award**)

- [13] **Virender Pratap Singh**, Gagan Kumar, Arun Kumar, R. K. Kotnala and M. Singh Ultra low loss and extremely magnetic hybrid (hard & soft) nanoparticles for microwave applications, National Conference on Smart Materilas, 26-27 Nov 2015, organized by School of Basic Sciences, Shoolini University, Bajhol (Solan).
- [14] **Virender Pratap Singh**, Sanjeev Puri, Gagan Kumar, R. K. Kotnala and M. Singh, “Structural, magnetic and Mossbauer study of La-doped Barium hexaferrites processed via sol-gel technique”, International conference on “Emerging advanced technology and applied science , 2-3, May, 2015, at Department of Physics, AU, Baddi , Himachal Pradesh (**Best poster Award at international level**), India.
- [15] **Virender Pratap Singh**, Gagan Kumar, Arun Kumar, R. K. Kotnala and M. Singh, “Improved structural, magnetic and microwave properties of substituted M-type barium nonohexaferrites” National conference on Science: emerging scenario and future challenges-III, 11-12, April, 2015, Organised by HSCA, at Vallabh Govt. College (Old block of I.I.T.), Mandi, Himachal Pradesh (**Best poster Award at national level**), India.
- [16] **Virender Pratap Singh**, Gagan Kumar, Pooja Dhiman, R. K. Kotnala, Jyoti Shah, Khalid M. Batoo and M. Singh “M-type hard magnetic nanoparticles with ultra low loss for applications up to C-bands”, National Workshop on Ion Beam Induced Growth and Engineering of Materials (IBGEM), 11-12 March, 2014, at Department of Physics, Kurukshetra University, Kurukshetra, India.
- [17] Gagan Kumar, **Virender Pratap Singh**, Pooja Dhiman, Ritu Rani, R. K. Kotnala, Jyoti Shah, Sagar E. Shirsath, Khalid M. Batoo and M. Singh, “Superparamagnetic behavior and evidence of weakening in super-exchange interactions with the substitution of Gd^{3+} ions in the Mg-Mn nanoferrite matrix” National Workshop on Ion Beam Induced Growth and Engineering of Materials (IBGEM), 11-12 March, 2014, at Department of Physics, Kurukshetra University, Kurukshetra, India.
- [18] **Virender Pratap Singh**, Sucheta Sharma & Mahavir Singh, “A comparative study of electric, dielectric and ac conductivity of bulk and nano Mg-Mn ferrite” *Gagan Kumar*, , National Conference on Multifunctional Advanced Materials (**MAM-2013**), May 2-4, 2013, Organized by School of Physics and Materials Science, Shoolini University Solan.
- [19] Gagan Kumar, Jagdish Chand, Ritu Rani, **Virender Pratap Singh** & M. Singh “Electrical and thermoelectric study of mixed Mg-Al-Mn ferrite system synthesized by citrate precursor technique”, National Workshop Cum Seminar on Advances in Electron Microscopy & Allied Fields (**NWAEMA-2011**), **Sept 23 – 29, 2011**, organized by Department of Physics & Chemistry, Shoolini University Solan.
- [20] Deepak Pathania, Sarita, **Virender Pratap Singh**, Sumitra Sood and B.S. Rathore, “Studies on antibacterial properties of Cadmium sulphide and Cadmium Oxide nanoparticles prepared by simple method”, proceeding of “National Conference on

Recent Trends in Materials Science” (RTMS-2011), during 08th -10th Oct, 2011, organized by Deptt. of Physics, Jaypee University of Information Technology, Wanknaghat, Solan (H.P.), India.

- [21] Naveen Kumar, Jyoti Dhar Sharma and **Virender Pratap Singh**, “Study of Electron Density of States and HOMO-LUMO Gap of Nano Structured Functionalized Graphene” in 2nd National Conference on Advanced Materials and Radiation Physics, (AMRP-2011), Nov 4-5, 2011, at Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur (Punjab).
- [22] Rajesh Kumar, RK Aggarwal, Jyoti Dhar Sharma and **Virender Pratap Singh** “Study of Solar Radiation Models to Estimate Solar Radiation Using Different Meteorological Data: A Review”, , proceedings of International Conference on Re-Newable Energy, 5th- 6th May, 2012, at Eternal University, Baru Sahib, Via Rajgarh, District Sirmour, Himachal Pradesh-173101 (India).
- [23] Gagan Kumar, Jagdish Chand, Ritu Rani, **Virender Pratap Singh** and M. Singh, “Electrical and thermoelectric study of mixed Mg-Al-Mn ferrite system synthesized by citrate precursor technique”, NATIONAL WORKSHOP CUM SEMINAR ON ADVANCES IN ELECTRON MICROSCOPY & ALLIED FIELDS (NWAEMA-2011) September 23-29, 2011, be organized by Department of Basic Sciences, Shoolini University.
- [24] **Virender Pratap Singh**, Anjali Chandel, Rohit Jasrotia, Rajesh Kumar, Monika, Kirti Singha, Gagan Kumar, Vijay Kumar, Arun kumar and M. Singh, “Analysis of Superparamagnetic behaviour of Iridium doped Mn-Zn ferrite nanomaterial by sol-gel auto combustion technique” in Natinal Conference on Climate Change Social Consequencies and Mitigation: Future Vision (NCCCSSCM-2018), 26-27 April, 2018, Organised by Department of Environmental Sciences, Sponsored by Ministry of Earth Sciences, Govt. of India, Central University of Jammu
- [25] Rohit Jasrotia, **Virender Pratap Singh**, Mahavir Singh, Pawan Kum “Analysis of effect of Ag⁺ ion on microstructure and elemental distribution of Strontium W-Type Hexaferrites” published in proceedings of International Conference on Advances in Basic Sciences (ICABS-2019), Feb 07-09, 2019, organized by GDC, Memorial College, Bahal (Bhiwani) Haryana 127028. India.
- [26] Rohit Jasrotia, **Virender Pratap Singh** and Rajesh Kumar Sharma, “Analysis of Optical and Magnetic Study of Silver Substituted SrW Hexagonal Ferrites”, published in the proceeding of International Conference on Advances in Basic Sciences (ICABS-2019), Feb 07-09, 2019, organized by GDC, Memorial College, Bahal (Bhiwani) Haryana 127028. India.
- [27] Satvinder kour, Rajesh kumar Sharma, Rohit Jasrotia and **Virender Pratap Singh**, “A Brief Review on the Synthesis of Maghemite (γ -Fe₂O₃) for Medical Diagnostic and Solar Energy Applications” published in proceeding of International Conference on Advances in Basic Sciences (ICABS-2019), Feb 07-09, 2019, organized by GDC, Memorial College, Bahal (Bhiwani) Haryana 127028. India.

- [28] Monika, Kirti Singha, **Virender Pratap Singh**, Gagan Kumar, and M. Singh, “Innovative hybrid Magnetic nanomaterials for antenna application”, Kotsera College (Shimla)
- [29] Kirti Singha, Monika, **Virender Pratap Singh** and M. Singh, “Effect of Cadmium on microstructural properties of Ni/Mg ferrite nanoparticles synthesized by Sol-gel auto combustion Techniques”, Kotsera College (Shimla)
- [30] Participation as a delegate in One Day Conference on “Issues and Challenges in Higher Education-II”, organised by Himachal Government College Teacher Association (HGCTA) on 5th December 2019 at Hotel Peterhof Shimla.
- [31] Participated in Two Days ACS Seminar , Advances in Multifunctional Nanomaterial, organized by Indian Institute of Technology (IIT), Mandi dated on 05 -06, May, 2022.
- [32] Participated in two days Seminar , “Foundations of Mathematics” under the aegis of Indian Science Congress Association (ISCA) Shimla Chapter jointly organized by the Sidharth Government Degree College, Nadaun dated on December 15-16, 2022
- [33] Presented a Paper in IVth International Conference on “Innovative and Current Advances in Agriculture and Allied Sciences, 12 June to 14 June 2022 organized by Society for Scientific Development in Agriculture & Technology, Meerut (UP) India.
- [34] **Virender Pratap Singh**, “Role of Mathematics in Nanotechnology”, presented in State Level Multidisciplinary Seminar on Importance of Mathematics (SLMDSIM-2022) December, 2022, 2022 on National Mathematics Day organized by Department of Mathematics & Internal Quality Assurance Cell (IQAC), Netaji Subhas Chander Bose Memorial Post Graduate Govt. College Hamirpur, Himachal Pradesh.

❖ **ORAL PRESENTATION IN INTERNATIONAL LEVEL WORKSHOP:**

- [35] Presented an oral talk titled, "The structural, electrical, magnetic and microwave properties of holmium/gadolinium substituted nanohexaferrites synthesized by sol-gel process", in the ninth workshop on Multifunctional Materials (**MFM-9**), is organised by Nanotechnology Research Center, SRM University, Kattankulathur, Kancheepuram Dist, Tamil Nadu - 603203, India (first time in India).

❖ RESEARCH PAPER REVIEWED:

03

1. Reviewed a research paper (Ref: PCS_2018_2800 entitled as “Substitutional effect of Dy-Co on Physical and Magnetic properties of (Ba_{2-x}Dy_xCu₂Fe_{28-y}Co_yO₄₆) X-type Hexaferrites” for the Journal “**Journal of Physics and Chemistry of Solids**” under **Elsevier publication Editorial Office** (Dated 26 Nov, 2018).
2. Reviewed a research paper (Manuscript Number: RMET-D-18-00385) entitled as “Magnetic Susceptibility and Mossbauer Spectral Evolution in Strontium Nano-hexaferrites: A Basic Insight of Manganese and Yttrium Ions Substitution Effects” for the Journal of “**Rare Metals**” under **Springer Journal’s Editorial Office** (14 Sept, 2018).
3. Reviewed a research paper (SNAS-D-18-00539R2) entitled as “Topical Advances in Synthesis for Energy Efficient Magneto-plumbite Nano ferrites” for the Journal of “**SN Applied Sciences**” under Journal’s Editorial Office, **Springer** (Dated 25th March, 2019)

❖ PARTICIPATION IN WORKSHOP/SHORT TERM COURSE :

14

1. Participated in Online Induction Training/Orientation Programme for Faculties in Universities/Colleges/Institutions of Higher Education dated 20th Jun to 19th July, 2022.7.17, organized by TEACHING LEARNING CENTRE Ramanujan College, University of Delhi under the Mission entitled Pandit Madan Mohan Malavia National Mission on Teachers and Teaching, Ministry of Education, Govt of India.
2. Participating in the 7 days Training Program on R & D equipment, Material Processing & Advance Functional Material Characterization Techniques under (STUTI) Synergistic Training Program Utilizing the Scientific and Technological infrastructure organized by department of Physics and Central Research Centre (CRFC), NIT Srinagar in association with SAIF/CIL Punjab University, Chandigarh, dated 30th May to 5th June, 2022.
3. Attended the Two Weeks Online Induction Teachers Training Programme for Assistant Professors (Colleges) with 0 to 5 Years Service with effect from 28/10/2020 to 10/11/2020 organized by Government College of Teacher Education, Dharamsala (Kangra), H.P. under the aegis of Department of Higher Education, Government of Himachal Pradesh; Training and Development Policy, 2012.
4. Participated in (5 Days) Short Term Course on “ Material Characterization Techniques” sponsored by Technical Education Quality Improvement Programme (TEQIP-III) sponsored by MHRD (four year Central Sector Scheme (CSS), organized by Institute Instrumentation Centre, Dr. B R Ambedkar National Institute of Technology (NIT), Jalandhar, Punjab, held on August 24 -28, 2020.

5. Participated in “NATIONAL SEMINAR ON RAMAN SPECTROSCOPY”, 12th November, 2019, organized by VIGYAN BHARAT, Himachal Pradesh at Department of Physics, Himachal Pradesh University, Shimla (HP).
6. Participated in Short Term Course on “Emerging Fields in High Energy Physics” sponsored by Technical Education Quality Improvement Programme (TEQIP-III) sponsored by MHRD (four year Central Sector Scheme (CSS), organized by Department of Physics, Dr. B R Ambedkar National Institute of Technology (NIT), Jalandhar, Punjab, held on July 15th -19th, 2019.
7. Participated in International Conference on FUNCTIONAL MATERIALS AND SIMULATION TECHNIQUES” (ICFMST – 2019), organized by Chandigarh University, University of Mauritius, Mauritius and Concordia University, Canada, held on 7th & 8th, June, 2019 at Chandigarh University, Gharaun, Mohali.
8. Participated in 2nd National Workshop on Ion Beam Induced Growth and Engineering of Materials, March 4-5, 2016, Ion Beam Centre, Department of Physics, KuruKshetra University, Kurukshetra.
9. Participated in the TQUIP-II Sponsored one week **short term course** on Advance Materials & Characterisation Technique” jointly organized by the Department of Chemistry & Department of Biotechnology at Dr. B. R. Ambedkar National Institute of Technology, Jalandhar during June 01 – 07 (seven days), 2015.
10. Participated in two day workshop on ANTEENA MATERIALS from 14th December to 15 December ,2012 in association with materials Research Society of India (Himachal Pradesh Chapter) at Jaypee University of information Technology, H.P. India.
11. Participated in National seminar on Experimental & computational techniques in Material Science (ECTMS- 2012), March 31st to 2nd April, 2012, organized by Department of Physics, Himachal Pradesh University, Shimla, India.(three days).
12. Participated in “Workshop-cum- seminar on Microscopic Techniques in Nano Science-11” (WSMTN-11), organized by department of physics, Himachal Pradesh University, Summerhill Shimla (under UGC- SAP) & Electron Microscope Society of India (EMSI), during March 30th to 5th April, 2011 (seven days).
13. Participated in International conference on Multifunctional Oxide Materials (ICMOM), organized by Deptt. Of Physics,H.P.U., Shimla during 16th April - 18th April, (2009).

14. Participated in national workshop cum seminar in Electron Microscopy & Allied fields (NMAEMA-2011), Organised by Department of Physics & Department of Chemistry, Shoolini University, Bajhol, Solan, HP, India during 23rd to 29th, Sept, 2011 (seven days).
15. Participated in “ National Seminar on Advances in Environmental Sciences” (NSAES-2012), August 24,2012 (one day), organized by HSCA,Solan (Himachal Pradesh), India.
16. Participated in “ 2nd National Conference on Advanced Materials and Radiations Physics” (AMRP-2011), Nov 4-5th, 2011 (two days), at Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur-148106 (Punjab), India.

❖ **SEMINARS/CONFERENCES/SHORT TERM COURSES/SUMMER SCHOOLS/WINTER SCHOOL ORGANIZED:**

- **Co-Convener** in the 7th HSCA International Conference on "CHEMICAL, PHYSICAL AND BIOLOGICAL SCIENCES" on 20 -21st, October 2019, going to be held at CHITKARA UNIVERSITY, Himachal Pradesh, India.
- **Organizing Secretary** in in INTERNATIONAL CONFERENCE ON SCIENCE: EMERGING SCENARIO & FUTURE CHALLENGES (SESFC-2018), 08-09 Sept, 2018 organized by HSCA at National Institute of Technology (NIT), Hamirpur, HP (India).
- **Organizing Secretary** in “INTERNATIONAL CONFERENCE ON SCIENCE: EMERGING SCENARIO & FUTURE CHALLENGES (SESFC-2017), 01-02 July, 2017 organized by HSCA at Atal Bihari Vajpayee, Institute of Mountaineering and Allied Sports, Manali, HP (India).
- **Joint Organizing Secretary** in “National conference on Environmental and Natural Resource Management, 23-24 Feb, 2017, organized by Faculty of Basic Sciences & CRHSD, Shoolini University, Bajhol, Solan (H.P), India.
- **Joint-organizing secretary** “NATIONAL WORKSHOP CUM SEMINAR ON ADVANCES IN ELECTRON in MICROSCOPY & ALLIED FIELDS (NWAEMA-2011) September 23-29, 2011, be organized by Department of Basic Sciences, Shoolini University.
- **Member** of Organizing Committee in INTERNATIONAL CONFERENCE ON SCIENCE: EMERGING SCENARIO & FUTURE CHALLENGES (SESFC-2016), 11-12 June, 2016 organized by HSCA at Hotel INCLOVER, Dharamshala, HP (India).
- **Coordinator** in National seminar on “Advances in Environmental Sciences” (NSAES-2012), 24 Aug, 2012., organized by Him Science Congress, Association, Solan, Himachal Pradesh at Shoolini University Shoolini University, Solan (H.P.).
- **Organizing Secretary**, in 3rd NATIONAL CONFERENCE ON MULTIFUNCTIONAL ADVANCED MATERIALS (MAM-2016), May 11-13, 2016 organized by “HIMALAYAN CENTER OF EXCELLENCE IN NANOTECHNOLOGY” School of Basic Sciences, Shoolini University Bajhol, Solan, HP, India.

❖ **ADDITIONAL DUTIES & CONTRIBUTION:-**

- Appointed as a **CTO (Care Taker Officer)** 1st Spell for NCC Sub-Unit , Govt. Degree College Nadaun (Hamirpur) dated on 10th Sept.,2021 by 4HP(I) COY NCC Unit Hamirpur.
- Working as **In charge- Sports** Activity and Convener to *Department of Physical Education* at SGC,Nadaun (Hamirpur)
- Worked as an **Asst. Returning Officer (ARO)** for Panchayat Election held in 2020-21.
- Actively working as a “**Member**” of different Committees at SGDC, Naduaun
 - *Internal Quality and Assurance Cell (IQAC)*
 - *Manager of Sports Activities Committee*
 - *Energy cum Environmental Cell*
 - *College Wi-fi,e-learning Resource Group*
 - *Drinking Water and sanitation Commiiee*
 - *College Disaster Management Committee*
 - *Anti-Ragging Squad-III (New Science Block & Campus Towards Gaggal)*
 - *Students Grievence and Redressal Cell & Appellate Committee*
 - *Attestation of University/Other Forms (For Science Students)*
 - *Leave Sanction Committee*
- Organize a Science Program at SGC Nadaun (Hamirpur) for undergraduate students
- Worked as a **RUSA COORDINATOR** in Govt. Degree College, Nerwa (Shimla) from 2018 to 9th August, 2019
- Worked as a **Deputy Superintendent of House Examination** w.e.f. 25th March, 2019 to 29th March,2019 for GDC, Nerwa (Shimla)
- Worked as core member of **Research & Development Committee**, GDC, Nerwa (Shimla), H.P.
- **Exam Superintendent** in School of Engineering and Technology (1400 Students): 2-times.
- **Physics Practical In charge:** INSPIRE PROGRAM (about 1000 students per year)
- **Co- coordinator** of discipline Committee: MOKSH-2014
- **Expertise Lectures** in different topics of physics: 8 Schools (4-Chamba; 3-Bilaspur;1-Kunihar (Arki)
- Participated in **Faculty development Programme**, organized by Department of training & development on 20th Sept 2014.
- Worked as an “**ACEDOMIC LIASON OFFICER**”, Eternal University, Baru Sahib.
- **Founder member**, Him Science Congress Association, Himachal Pradesh.
- **Treasurer**, Shoolini Teachers housing cooperative Society.

- **Member** of Anti – Ragging Committee School of Engineering and Technology, Shoolini University.
- **Incharge**, Culture Club, Sampada, 2011, Shoolini university.
- **Fellowship** Life member of Him Science Congress Association, Himachal Pradesh

❖ **REFERENCES:**

1. Prof. (Dr.) Deepak Pathania, Prof & Head, Central University, Jammu (J&K), [India.dpathania74 @ gmail.com](mailto:India.dpathania74@gmail.com).
2. Dr. Pankaj Thakur, Asst. Prof of Chemistry, Largo Barsanti e matteucci 53 IIT @CRIB, Napples 80125, Italy. Chempank@gmail.com.
3. Professor Mahavir Singh, Department of Physics, Himachal Pradesh University, Shimla (India), (mahavirhpu@gmail.com).
4. Dr. R. K. Kotnala, Chief Scientist, Department of Materials Physics & Engineering, National Physical Laboratory (CSIR), Dr. K. S. Krishnan Marg (Pussa), New Delhi (India), (rkkotnala@nplindia.org).

DECLARATION

I declare that the above information's are correct and complete to the best of my knowledge and belief.

Date:...../...../

Place:.....

(Dr. Virender Pratap Singh)