

## CURRICULUM VITAE

- 1- NAME : Prof. (Dr.) Sumita Srivastava  
2- FATHER'S NAME : Sri V.K. Srivastava  
3- PRESENT ADDRESS : Principal, Government Degree College,  
Nainbagh, Tehri Garhwal, Uttarakhand  
4- PHONE NUMBER : Mobile- 8077919619  
E-Mail : sumita\_uki1@rediffmail.com  
5- ACADEMIC QUALIFICATONS : B.Sc. (Hons), M.Sc. (BHU Gold Medal) Ph.D.

S.N.	Examination	Board/Univ.	Year of Passing	Subjects	% of marks	Position
1	High School	U.P.Board	1988	Science,Math S.Science,Hindi, English	73.7	
2	Intermediate	U.P.Board	1990	Physics,Chemistry, Math,Hindi, English	71.0	
3	B.Sc.(Hons)	BHU	1993	Physics(Hons), Chemistry, Math	78.7	3 <sup>rd</sup>
4	M.Sc.	BHU	1995	Physics	83.8	1 <sup>st</sup> BHU GOLD MEDAL
5	Ph.D.	HNBGU	2007	Physics		

### **6- OTHER QUALIFICATIONS:**

1. Qualified CSIR NET – JRF (1995) in Physical Science,
2. Qualified GATE 1995 in Physics with score 95.54% and all India Rank 71<sup>st</sup>

### **7-DISTINCTIONS/PRIZES/MEDALS/AWARDS/HONOURS:**

- i. ‘Excellence in Research of the Year Award 2021’ by Divya Himgiri Foundation, Uttarakhand, India.
- ii. InSc ‘Research Excellence Award 2021’ by Institute of scholars, Bengaluru, India.
- iii. Nari Shakti Ratan Award for Education Services by The International Association of Lions Clubs, District 321-C1, Rishikesh on 08.03.2019.
- iv. Vice-president of Indian Association of Physics Teachers, Uttarakhand Chapter from 2011-2017.
- v. Reviewer in ‘International Journal of Hydrogen Energy’, ‘Materials Research Bulletin’, ‘Journal of Alloys and Compounds’, ‘Central European Journal of Chemistry’, ‘International Journal of Renewable Energy Research’, ‘International Journal of Energy Research’ and ‘International journal of basic and applied sciences’, Macromolecular symposia.

- vi. Participated as subject expert in interview of Lecturer of Govt. Inter College of Uttarakhand organized by Uttarakhand Public Service Commission, Haridwar in 2005 and 2010.
- vii. 3<sup>rd</sup> rank in the selection of 'Lecturers through UP Higher Education, Allahabad in 1999.
- viii. 1<sup>st</sup> rank in the selection of 'Lecturer through UPPSC, Allahabad' 1998.
- ix. Prof. Motilal Rustgi Scholarship for standing 1<sup>st</sup> in M.Sc. I Physics examination.
- x. Prof. B. Dayal Gold Medal for securing highest marks in M.Sc. Physics examination 1995.
- xi. BHU Medal for standing 1<sup>st</sup> in M.Sc. Physics examination 1995.
- xii. Certificate for standing 1<sup>st</sup> in B.Sc. (hons) examination 1993 in MMV, BHU.
- xiii. Certificate for standing 1<sup>st</sup> in B.Sc. I in Physics.
- xiv. Certificate for standing 1<sup>st</sup> in B.Sc. I in BHU.
- xv. RGC Scholarship in B.Sc. II and B.Sc. III in Mahila Maha Vidyalaya (MMV), BHU for scoring highest marks in MMV.
- xvi. "Governor Award" of UP Bharat Scouts and Guides.
- xvii. Akikrit Scholarship 1986.
- xviii. Many other awards in Scouting-Guiding, Red-Cross and sports.

### **8-RESEARCH EXPERIENCE:**

- i. Supervised a Ph.D. student Kuldeep Panwar on the topic 'Synthesis, characterization and investigation on hydrogenation behavior of AB<sub>5</sub>-type hydrogen storage alloy'. Ph.D. viva on 13 May 2022.
- ii. Guiding three to four M.Sc. students for research dissertation every year.
- iii. Completed UGC Major Research Project entitled 'Effect of transition metal (Ni/Co/Mn/Fe) nanoparticle on the hydrogenation behavior of ball-milled MmNi<sub>5</sub>' F.No.-40-433/2011(SR) Dated:04-07-2011 of 10,29,300/- , Duration July 2011-June 2014 as Principal Investigator.
- iv. Completed UGC Minor Research Project entitled "Investigations on AB<sub>5</sub>-Type Hydrogen Storage Material with Enhanced Hydrogen Storage Capacity" No.F.6-1(221)/2008(MRP/NRCB) of 80,000/-Dated: 11 March 2008 as Principal Investigator.
- v. Ph.D. awarded in 2007 on the title "Investigations and Characterization of Some Rare Earth Based Hydrogen Carrying Material with Reference to Special Application" under supervision of Dr. R.K. Upadhyaya, from Hemwati Nandan Bahuguna Garhwal University, Shrinagar, Garhwal.
- vi. Worked as CSIR-JRF and SRF on Hydrogen Energy under supervision of Prof. O.N. Srivastava, in the Department of Physics, BHU during September 1996 to June 1999.
- vii. Worked as 'Junior Project Fellow' in AICTE Project "Development of Metal Hydride Battery" under supervision of Prof. O.N. Srivastava, in the Department of Physics, BHU during August 1995 to August 1996.

- viii. Project on “Formation and Electron Microscopic Studies of Graphitic Special Structures Due to Arc Deposition of Carbon in Helium” was completed under supervision of Prof.O.N.Srivastava, in the Department of Physics, BHU during M.Sc.II in 1994-1995.

**9- AREA OF SPECIALIZATION: Material Science, Hydrogen Storage Material, Nickel-Metal Hydride Battery and Hydrogen Energy**

- i. Knowledge of various synthesis techniques like R.F.Induction Furnace, melt-spinning, Ball-milling.
- ii. Knowledge of Vacuum Coating Unit.
- iii. Knowledge of Characterization Techniques – XRD, EDAX,SEM and TEM.
- iv. Knowledge of Nickel-Metal Hydride Battery Fabrication and Characterization.
- v. Density Functional Theory utilizing Quantum Espresso Software.

**10- RESEARCH PUBLICATIONS: 31 Publications (All in International Journals and each paper has been cited in many International Journals)**

- i. Enhancement in hydrogenation properties of ball milled AB<sub>5</sub>-type hydrogen storage alloy through catalyst  
Kuldeep Panwar, **Sumita Srivastava**  
Journal of Physics: Conference Series **2267** (2022) 012052 (12 pages)  
ISSN:**1742-6596**, Impact Factor 0.547
- ii. Theoretical Model on the Electronic Properties of Multi-element AB<sub>5</sub>-type Metal Hydride  
Kuldeep Panwar, **Sumita Srivastava**  
International Journal of Hydrogen Energy 46 (2021) 10819-10829.  
ISSN:**0360-3199**, Impact Factor 5.816
- iii. Effects of structural properties on Hydrogen Storage Capacity of Multi-element AB<sub>5</sub>-type Hydrogen Storage Alloy  
Sapna Prajapati, Kuldeep Panwar and **Sumita Srivastava**  
Student Journal of Physics, 8(2)(2020)70-77. ISSN: 2319-3166
- iv. On structural model of AB<sub>5</sub>-type multi-element hydrogen storage alloy  
Kuldeep Panwar, **Sumita Srivastava**  
International Journal of Hydrogen Energy 44 (2019) 30208-30217  
ISSN:**0360-3199**, Impact Factor 5.816
- v. Correlation of Structural properties with Thermodynamic Properties for Multi-Element AB<sub>5</sub>-Type Hydrogen Storage Alloy  
Niyanta Garkoti1, Kuldeep Panwar and **Sumita Srivastava**  
Student Journal of Physics, Vol. 8, No. 1, 2019, PP 33-39. ISSN:**2319-3166**
- vi. Use of Renewable Energy in Holy City Rishikesh  
**Sumita Srivastava**  
Glimpses, Spplimentary Edition June ( 2019) 91-97, ISSN-**2250-0561**
- vii. Electromagnetic Radiation in the Surroundings  
Shubham Gwari , **Sumita Srivastava**  
ESSENCE Int. J. Env. Rehab. Conserv. X 2 (2019): 1—8, ISSN:**0975-6272**

- viii. Optimization of ball–milling parameters to synthesize nanocrystalline  $MmNi_5$  hydrogen storage alloy  
Kuldeep Panwar, **Sumita Srivastava**  
ESSENCE Int. J. Env. Rehab. Conserv. X 2 (2019): 67—71 ISSN:**0975-6272**
- ix. Study of Interface Layer and Device Fabrication of Organic Solar Cells  
Aastha Bhatt, Md Atif , J.P Tiwari, **Sumita Srivastava**  
ESSENCE Int. J. Env. Rehab. Conserv. X 1 (2019): 23—27. ISSN:**0975-6272**
- x. Implemtation of Swachh Bharat Mission through Students’ participation  
**Sumita Srivastava**  
Ruminations, Vol. 9, No 2, December ( 2018) 274-280. ISSN-**2229-6751**
- xi. Investigations On Calculation of Heat of Formation for Multi-element  $AB_5$ -type Hydrogen Storage Alloy  
Kuldeep Panwar, **Sumita Srivastava**  
International Journal of Hydrogen Energy 43 (2018) 11079-11084  
ISSN:**0360-3199**, Impact Factor 5.816
- xii. Study of Interface Layer and Fabrication of Perovskite Solar Cell (PSC)  
Sandhya Negi, Md. Aatif, J. P. Tiwari, **Sumita Srivastava**  
Student Journal of Physics, Vol. 7, No. 3, Jul-Sep. 2018, PP 114-118.  
ISSN:**2319-3166**
- xiii. Study of Thermoluminescence Property of Himalayan Stones for Nuclear Radiation Measurement  
Manish Joshi, Pradeep Narayan, **Sumita Srivastava**  
Student Journal of Physics, Vol. 7, No. 2, Apr-Jun. 2018, PP 82-88.  
ISSN:**2319-3166**
- xiv. Nuclear Radiation Measurement using Thermoluminescence Technique  
Shashank Kumar, Pradeep Narayan, **Sumita Srivastava**  
Student Journal of Physics, Vol. 7, No. 2, Apr-Jun. 2018, PP 75-8.  
ISSN:**2319-3166**
- xv. Electricity Generation through Human Power via Piezoelectric Effect  
Ankit Singh Rana and **Sumita Srivastava**  
ESSENCE Int. J. Env. Rehab. Conserv. IX 2 (2018): 23—27. ISSN:**0975-6272**
- xvi. Study on Selection of Salt for Solar Pond and Electricity Production through Salt Water  
Jyoti Negi, **Sumita Srivastava**  
International Journal for Research in Applied Science & Engineering Technology (IJRASET), Volume 5 Issue IX, September 2017, pp 313-319  
ISSN: **2321-9653**; IC Value: 45.98; SJ Impact Factor:6.887.  
Available at [www.ijraset.com](http://www.ijraset.com)
- xvii. Study on Transmission of Audio Signal using Laser Communication System  
Ekta Badoni, **Sumita Srivastava**  
International Journal for Research in Applied Science & Engineering Technology (IJRASET), Volume 5 Issue VIII, August 2017, pp 709-714  
ISSN: **2321-9653**; IC Value: 45.98; SJ Impact Factor:6.887  
Available at [www.ijraset.com](http://www.ijraset.com)
- xviii. Renewable energy options in Uttarakhand state of India

- Kuldeep Panwar and **Sumita Srivastava**  
 Invertis Journal of Renewable Energy  
 Volume : 7, Issue : 1, Year 2017, Page 41-44, ISSN: **2454-7611**  
 IC Value: 74.87; SJ Impact Factor:6.2, **DOI:10.5958/2454-7611.2017.00006.6**
- xix. Investigations on Microstructures of Ball-milled MmNi<sub>5</sub> Hydrogen Storage Alloy  
**Sumita Srivastava**, Kuldeep Panwar  
 Materials Research Bulletin 73 (2016) 284–289.  
 ISSN: **0025-5408** (Impact factor 4.641)
- xx. Effect of transition metals on ball-milled MmNi<sub>5</sub> hydrogen storage alloy  
**Sumita Srivastava**, Kuldeep Panwar  
 Materials for Renewable and Sustainable Energy 4 (2015)19  
 ISSN: **2194-1459** (Peer-reviewed open access) Impact factor 2.98
- xxi. Iron substituted AB<sub>5</sub>-type MH electrode  
**Sumita srivastava**, R.K.Upadhyaya  
 Bulletin of Material science 36 Issue 7, (2013) pp 1267-1274(Impact factor 0.870)  
 ISSN: **0973-7669** (Impact factor 1.392)
- xxii. Effect of Secondary Phases on Hydrogenation Behaviour of LaNi<sub>5</sub> – Hydrogen Storage Alloy  
**Sumita Srivastava**  
 Glimpses, vol. 2, No. 2, Supplementary Edition December ( 2012) 17-25  
 ISSN-**2250-0561**
- xxiii. Modifications in AB<sub>5</sub>-Type Hydrogen Storage Materials for Optimized Hydrogenation Properties  
**Sumita Srivastava**  
 Glimpses, vol. 2, No. 2, Supplementary Edition December ( 2012) 44-52  
 ISSN-**225**
- xxiv. Investigations of AB<sub>5</sub>-type hydrogen storage materials with enhanced hydrogen storage capacity  
**Sumita Srivastava** and R.K. Upadhyaya  
 Int. J. Hydrogen Energy 36(2011) 7114-7121  
 ISSN:**0360-3199**, Impact Factor 5.816
- xxv. Investigations of AB<sub>5</sub>-type negative electrode for nickel-metal hydride cell with regard to electrochemical and microstructural characteristics  
**Sumita Srivastava** and R.K. Upadhyaya  
 J. Power Sources 195(2010)2996-300, ISSN:**0378-7753** (Impact factor-9.127)
- xxvi. Investigations on synthesis, characterization and hydrogenation behavior of hydrogen storage alloys, Mm<sub>1-x</sub>Ca<sub>x</sub>Ni<sub>5-y-z</sub>Al<sub>y</sub>Fe<sub>z</sub> (x = 0, 0.05, 0.1, 0.2, 0.3; y = 0, 0.1; z = 0, 0.1)  
**Sumita Srivastava** and R.K.Upadhyaya  
 Int. J. Hydrogen Energy 32(2007) 4195-4201  
 ISSN:**0360-3199**, Impact Factor 5.816
- xxvii. On the development of AB<sub>4.9</sub>-Type alloys (A=Mm,La,Ti; B=ni, Co,Al,Mn,Mo) for Ni-MH batteries  
 D.J. Davidson, **S. Srivastava**, S.S.Sai Raman, P.K. Shukla, O.N. Srivastava  
 Transactions of the SAEST (Society for Advancement of Electrochemical Science and Technology) 36 (1-2) 2002, pp. 59-63.

- xxviii. On the synthesis and characterization of some new AB<sub>5</sub> – type MmNi<sub>4.3</sub>Al<sub>0.3</sub>Mn<sub>0.4</sub>, LaNi<sub>5-x</sub>Si<sub>x</sub> (x = 0.1, 0.3, 0.5) and Mg-x wt% CFMmNi<sub>5-y</sub> wt% Si hydrogen storage materials  
**Sumita Srivastava**, S.S.Sai Raman, B.K.Singh and O. N. Srivastava  
 Int. J. Hydrogen Energy 25(2000) 431-440.  
 ISSN:0360-3199, Impact Factor 5.816
- xxix. Hydrogenation behaviour with regard to storage capacity, kinetics, stability and thermodynamic behaviour of hydrogen storage composite alloy LaNi<sub>5</sub>/La<sub>2</sub>Ni<sub>7</sub>, LaNi<sub>3</sub> **Sumita Srivastava** and O. N. Srivastava  
 J. Alloys and Comps. 290 (1-2) (1999) 250-256.  
 ISSN: 0925-8388 (Impact factor 4.175)
- xxx. Synthesis, characterization and hydrogenation behaviour of composite hydrogen storage alloys, LaNi<sub>5</sub>/La<sub>2</sub>Ni<sub>7</sub>, LaNi<sub>3</sub>  
**Sumita Srivastava** and O. N. Srivastava  
 J. Alloys and Comps. 282 (1999) 197-205.  
 ISSN: 0925-8388 (Impact factor 4.175)
- xxxi. Investigations on synthesis, characterization and hydrogenation behaviour of the spin and thermal - melted versions of LaNi<sub>5-x</sub>Si<sub>x</sub> (x = 0.1, 0.3, 0.5) hydrogen storage materials.  
**Sumita Srivastava** and O. N. Srivastava  
 J. Alloys and Comps. 267 (1998) 240-245  
 ISSN: 0925-8388 (Impact factor 4.175)
- xxxii. Investigations on synthesis and characterization of MmNi<sub>4.3</sub>Al<sub>0.3</sub>Mn<sub>0.4</sub> and MmNi<sub>4.0</sub>Al<sub>0.3</sub>Mn<sub>0.4</sub>Si<sub>0.3</sub>, hydrogen storage materials through thermal and spin melting processes.  
**Sumita Srivastava** and O. N. Srivastava  
 Int. J. Hydrogen Energy 23(1)(1998) 7-13  
 ISSN:0360-3199, Impact Factor 5.816

### **FULL PAPER PUBLISHED IN CONFERENCE PROCEEDINGS**

- i. Role of an Individual in Imparting Quality Education  
**Sumita Srivastava**  
 ‘Holistic Approach Towards quality Enhancement in Higher Education’ ISBN No.978-81-942288-0-6, Page 27-30, 2019.
- ii. Teaching and Learning through ICT:Free open learning resources, Simulation tools and Blog writing  
 Kuldeep Panwar and **Sumita Srivastava**  
 ‘Holistic Approach Towards quality Enhancement in Higher Education’ ISBN No.978-81-942288-0-6, Page 47-62, 2019.
- iii. Swachh Bharat Mission: An Approach Towards Ecofriendly System  
**Sumita Srivastava**  
 ‘Holistic Approach Towards quality Enhancement in Higher Education’ ISBN No.978-81-942288-0-6, Page 122-130, 2019.
- iv. Impact of India Solar Energy Mission on Holy City Rishikesh: A Survey  
**Sumita Srivastava**

- ‘Holistic Approach Towards quality Enhancement in Higher Education’ ISBN No.978-81-942288-0-6, Page 117-121, 2019.
- v. Indian Association of Physics Teachers; A Quality Learning Platform: Experience and Contribution  
Jyotsana Kala, **Sumita Srivastava**  
‘Holistic Approach Towards quality Enhancement in Higher Education’ ISBN No.978-81-942288-0-6, Page 93-95, 2019.
- vi. Tailoring of AB<sub>5</sub>-type hydrogen storage materials for utilizing hydrogen energy  
**Sumita Srivastava**  
Proceedings of the National Workshop on “Green chemistry practices in teaching, research and industry”, March 30, 2016, Pt.L.M.Govt.P.G.College, Rishikesh, Page: 111-118.
- vii. Catalytic Nanostructured AB<sub>5</sub>-type Hydrogen Storage Alloy for harnessing Hydrogen Energy  
**Sumita Srivastava**  
Proceedings of the India International Science Festival- Young Scientists’ Meet Department of Science and Technology, Government of India – Dec 4-8, 2015  
Paper Code:Green 32
- viii. Investigations on Ball-mill Technology to improve the hydrogenation behavior of MmNi<sub>5</sub> alloy  
**Sumita Srivastava**  
Proceedings of ‘2<sup>nd</sup> International Conference on Emerging Trends in Engineering and Technology’, Teerthanker Mahaveer University, Moradabad, April 12-13, 2013.
- ix. Investigations on the effect of additive in metal hydride electrode  
**Sumita Srivastava**  
Proceedings of ‘Academica Conference on Recent trends in research field of science, social science, humanities and application of space technology for Enhancement of Quality in Higher Education’, 2013, pp15-17.
- x. Environmental protection through green technology:Ni-MH Battery  
**Sumita Srivastava**  
Proceedings of National Conference on ‘Environmental conservation, sustainable natural resource management and strategies for regional development with reference to Uttarakhand’, DBS Post Graduate College, Dehradun,01-02 May 2011,pp 170-176.

### **Books**

- i. Authored Book ‘Fundamentals and Advancements in Carbon Nanotubes: Synthesis, Special Diffraction and Energetic of Carbon Nanotubes’ ISBN 978-620-4-18190-5, LAP Lambert Academic Publishing, Republic of Moldova Europe 2021.
- ii. Authored Book ‘Fundamentals and Advancements in Carbon Nanotubes: Synthesis, Special Diffraction and Energetic of Carbon Nanotubes’ ISBN 978-620-4-18190-5, LAP Lambert Academic Publishing, Republic of Moldova Europe 2021 is published in 6 more languages, Russian, French, German, Italian, Spanish, Portuguese.
- iii. Edited Book ‘Fit India: Holistic Health Care for Quality Life’ ISBN 978-81-7844-365-2, K.K. Publications, New Delhi 2020.

- iv. Edited Book ‘Holistic Approach Towards quality Enhancement in Higher Education’ ISBN 978-81-942288-0-6, Shri Vidyasagar Publications Meerut 2019.

### **Chapter in Books**

- i. Theoretical modeling on hydrogenation characteristics of ball-milled AB<sub>5</sub>-type hydrogen storage nanomaterials  
Kuldeep Panwar, **Sumita Srivastava**  
‘Materials Science and Technologies:Materials Science Future Aspects’ Eds. K.Awasthi et al. , Nova Science Publishers, INC. USA, 2022 pp 17-38.  
ISBN: 978-8-88697-008-1 (e book)
- ii. AB<sub>5</sub>-type metal hydrides to serve the society as energy material: Development in last decade  
Kuldeep Panwar, **Sumita Srivastava**  
‘Versatile solicitations of material science in diverse science fields’ Eds. M.Tripathi et al. , Nova Science Publishers, INC. USA, 2021 pp 139-154.  
ISBN:978-1-53619-798-3 (e book)
- iii. Harnessing renewable energy from natural resources of Himalaya.  
Kuldeep Panwar, **Sumita Srivastava**  
‘Geology and natural resources of Himalaya’ Eds. R.A.singh and P.K.singh, ISBN 978-93-83247-95-0, 2021, Page 339-345. ASR Publications, Lucknow.
- iv. Programming for stress free, active and healthy life  
Kuldeep Panwar, **Sumita Srivastava**  
‘Fit India : Holistic Health Care for Quality Life’ Ed. S. Srivastava, ISBN 978-81-7844-365-2, 2020, Page 75-82.KK publications, New Delhi.
- v. Rural development with renewable energy  
**Sumita Srivastava**  
‘Science and technology application in rural areas’ Ed. M.Thapliyal, ISBN 978-81-944874-0-1, 2020, Page 61-69, UCOST and TI Pvt.Ltd. Dehradun.
- vi. ‘Bio-hydrogen production : current scenario and future prospects’  
**Sumita Srivastava**, Prashant Anthwal, Tribhuwan Chandra and Ashish Thapliyal,  
In ‘Biofuels Production’ (eds. Vikash Babu et al.) John Wiley and Sons  
2013, P 309-319. ISBN; 978-1-1186-3450-9
- vii. ‘Carbon Nanotubes and Nano-Biotechnology,  
**Sumita Srivastava** in ‘Himalayan Aquatic biodiversity conservation & new tools in biotechnology’ (eds. J.P.Bhatt et al. )  
TransMedia Publication, Media House, Bhandari Bagh, Srinagar (Garhwal)pp138-150, 2011

### **11- PRESENTATIONS IN SEMINARS/ CONFERENCES/ WORKSHOPS:**

- i. Delivered a lecture as **resource person** in Workshop on National Education Policy (NEP 2020) Policy Implementation and Strategies on 3<sup>rd</sup> August 2022, organized by Sri Dev Suman Uttarakhand University, PLMS Campus Rishikesh.



- ii. Delivered as **speaker** a lecture on “Kinetic theory of gases” on 26<sup>th</sup> June, 2022 in the National Lecture Series in Physics (NLSP-2022) held during June 21-30, 2022 and organized by Indian association of Physics Teachers RC-4 Uttar Pradesh.
- iii. **Invited talk** entitled “Hydrogen energy for sustainable future” on 28<sup>th</sup> February, 2022 in National webinar on Integrated approach in science and technology for a sustainable future, organized by Govt. Degree College Narendranagar, Tehri Garhwal.
- iv. Presented research paper on “On structural model of AB<sub>5</sub>-type multi-element hydrogen storage alloy” in online 27<sup>th</sup> International Conference of International Academy of Physical Sciences on Hydrogen Energy and Nano Materials, organized by Department of Physics, Institute of Science, Banaras Hindu University, Varanasi, India on October 26-28, 2021.
- v. Delivered **expert lecture** entitled “CBCS system in New Education Policy” in a workshop on Construction and execution of Professional Courses in National Education Policy 2020, organized by Sri Dev Suman Uttarakhand University, Badshahithaul on 23.10.2021.
- vi. Presented research paper on "Enhancement in hydrogenation properties of ball-milled AB<sub>5</sub>-type hydrogen storage alloy through catalyst" in online 3rd International Conference on Recent Advances in Fundamental and Applied Sciences organized by Lovely Professional University Panjab on 25-26 June 2021.
- vii. Delivered **invited talk** on the topic “Renewable energy technology” in the International webinar entitled “Recent technological advancements and innovation in science”, held on Feb 26-27 and March 05-06, 2021 and organized by KLDVA PG College, Roorkee, Uttarakhand.
- viii. Delivered **invited talk** on the topic “Theoretical modeling on hydrogenation characteristics of hydrogen storage material” in the International webinar entitled “Padmashree Prof. O.N.Srivastava Student Group-second tea club seminar”, held on Feb 28, 2021 and organized by Department of physics, BHU Varanasi.
- ix. Delivered **invited talk as** eminent speaker on the topic “New education policy:compatibility within and outside” in the National webinar entitled “New education policy 2020:challenges and possibilities”, held on 01.09.2020 and organized by Veerangana Avantibai Government Degree College, Atrauli, Aligarh (UP).
- x. Presented paper “Internet and Social Media in context to Intellectual Property Right” in National Seminar on Intellectual Property Rights (IPR) Laws:Concepts, Applications and Issues on February 29, 2020 in MM PG College, Modinagar, Ghaziabad.
- xi. Presented paper “On the Role of Catalyst in Hydrogenation Behaviour of AB<sub>5</sub>-type Nanostructured Hydrogen Storage Alloy” in International Conference on Interdisciplinary Research for Sustainable Development:Innovation and Opportunities on February 14-16, 2020 in Vardhman College, Bijnor, UP.

- xii. Presented paper “Bio-Informatics:Applications through Physical Science” in National Seminar on Bio-Informatics:Concepts, Applications & Skill Development on February 8, 2020 in MM PG College, Modinagar, Ghaziabad.
- xiii. Presented paper “On the prediction of hydrogenation properties of AB<sub>5</sub>-type hydrogen storage alloy” in National Seminar on Recent Trends in Interdisciplinary Research on January 31, 2020 in MM PG College, Modinagar, Ghaziabad.
- xiv. Presented paper ‘Harnessing renewable energy from natural resources of Himalayas’ in National Conference on “Geology and Natural Resources of Himalayas” on November 25-26, 2019 in PLMS Govt. PG College, Rishikesh.
- xv. Presented paper “On Calculation of Heat of Formation for Multi-elemental AB<sub>5</sub>-type Hydrogen Storage Alloy” in National Seminar on Emerging Trends and Future Challenges in Science (ETFCS-2019) on 27-28 February 2019 in SGRR PG College, Dehradun.
- xvi. Presented paper on “ Theoretical model on the correlation of thermodynamic and structural properties of LaNi<sub>5</sub>-type hydrogen storage alloy” in XXXII Annual IAPT Convention 2017 and National Symposium on Recent Trends in Physics at different scales, October 29-31, 2017, Gurukul kangri Vishwavidyalaya, Haridwar.
- xvii. Presented paper on “Renewable Energy Options in Himalayan Ecology” in Three day’s National Seminar on “Crop diversity and Enterpreneurship development in Himalayan environment”, 29<sup>th</sup> September -1<sup>st</sup> October 2016, RCU Govt.P.G.College, Uttarkashi.
- xviii. Presented paper on “Tailoring of AB<sub>5</sub>-Type Hydrogen Storage Material for utilizing Hydrogen Energy” National Workshop on Green Chemistry Practices in Teaching Research and Industry, 30 March 2016, Pt.L.M.S.Govt.P.G.College, Rishikesh.
- xix. Presented paper on ‘Catalytic Nanostructured AB<sub>5</sub>-type Hydrogen Storage Alloy for harnessing Hydrogen Energy’ India International Science Festival- Young Scientists’ Meet, Department of Science and Technology, Government of India – Dec 4-8, 2015, IIT Delhi. (Paper Code:Green 32)
- xx. Presented paper on ‘Optimization of ball–milling parameters to synthesize nanocrystalline MmNi<sub>5</sub> hydrogen storage alloy”. National Seminar on New Horizons In Theoretical And Experimental Physics (NHTEP-2015), Govt. Post Graduate College, Gopeshwar, Chamoli, Uttarakhand, February 19-20, 2015
- xxi. Presented an Invited Lecture on ‘Key factors of a good research proposal’, Workshop on “Developing Ideas, Writing projects and Research Management” November 30, 2013, Pt.L.M.S.Govt.P.G.College, Rishikesh, Dehradun
- xxii. Presented paper on “Investigations on Ball-mill Technology to improve the hydrogenation behavior of MmNi<sub>5</sub> alloy” in 2<sup>nd</sup> International Conference on Emerging Trends in Engineering and Technology’, Teerthanker Mahaveer University, Moradabad, April 12-13, 2013.
- xxiii. Presented paper on “Investigation on the ball-milled MmNi<sub>5</sub> Hydrogen storage alloy’ in National Conference on Recent Trends in Interdisciplinary Research and Astrophysics Space Science (NCRTIRASS-2012), M.B.Govt.P.G.College, Haldwani, Nanital, 3-4 November, 2012.

- xxiv. Presented paper on “Investigations on the effect of additive in metal hydride electrode” in Academics Conference , Govt.P.G.College, Gopeshwar, 14-16 March 2012.
- xxv. Presented paper on “Hydrogen storage material with enhanced hydrogen storage capacity” in 3<sup>rd</sup> National Seminar on Recent Trends in Advancement of Mathematical and Physical Sciences, D.N.College, Meerut, 5-6 February, 2011
- xxvi. Presented paper on “Hydrogen Energy System:An answer to non-conventional energy” in International Conference on Cooling the Earth, G.B.Pant University ,Pantnagar, 15-17 November,2010
- xxvii. Presented paper on “Applications of Carbon nanotubes in biotechnology” in National Conference on Advances in Biotechnology, Govt.P.G.College, Uttarkashi, 17-18 March 2010
- xxviii. Presented paper on “Investigations on MmNi5-type Negative Electrode for Nickel-Metal Hydride Cell with Regard to electrochemical and Microstructural Characteristics” in 3<sup>rd</sup> Uttarakhand Science & Technology Congress 10-11 November, 2008, IIT Roorkee.

#### **PARTICIPATION IN SEMINARS/ CONFERENCES/ WORKSHOPS:**

- i. Participated in workshop on Professional Advancement Program for Indian Women Researchers in STEM during 2-3 June 2022 and organized by Doon University dehradun and SERB New Delhi.
- ii. Participated as a member of academic support group in Asian Physics Olympiad (23-31 May 2022) organized by IAPT at Graphic Era Hill University Dehradun.
- iii. Attended the virtual lecture on ‘Why we should study stars?’ organized by Punarvasu, the astronomy club of Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun on 21st May 2021.
- iv. Participated in national webinar on “आजादी का अमृत महोत्सव-स्वतंत्र भारत में आत्मनिर्भरता के सोपान” held on 19.03.2021 and organized by Pt.L.M.S. Government P.G.College, Rishikesh, Dehradun (Uttarakhand).
- v. Participated in “COVID -19 Pandemic General Awareness Quiz” held on 05.12.2020 and organized by Government Degree College, Thatur, Tehri Garhwal (Uttarakhand).
- vi. Participated in the International webinar entitled “Science behind covid-19 and its prevention”, held on 17.10.2020 and organized by Pt.L.M.S. Government P.G.College, Rishikesh, Dehradun (Uttarakhand).
- vii. Participated in the webinar entitled “Psychological impact of online education on students and teachers”, held on 03.10.2020 and organized by Pt.L.M.S. Government P.G.College, Rishikesh, Dehradun (Uttarakhand).
- viii. Participated in the webinar entitled “Quality assessment of online education during covid-19 pandemic”, held on 23.09.2020 and organized by Pt.L.M.S. Government P.G.College, Rishikesh, Dehradun (Uttarakhand).
- ix. Participated in the National webinar entitled “Scenario of higher education in relation to national education policy 2020”, held on 13.09.2020 and organized by Sanatan Dharm College, Muzaffarnagar (UP).

- x. Participated in online lecture entitled “Raising the research visibility of your institute”, held on 05.09.2020 and organized by InPods Ed-Tech.
- xi. Participated in the National webinar entitled “राष्ट्रीय शिक्षा नीति 2020:प्रासंगिकता एवं कार्यान्वयन”, held on 29.08.2020 and organized by Mahatma Gandhi Central University Bihar.
- xii. Participated in the International webinar entitled “Biodiversity conservation through environmental education for sustainable development”, held on 29.07.2020 and organized by Government PG College, Maldevta Raipur, Dehradun (Uttarakhand).
- xiii. Participated in the International e-seminar entitled “Academic writing: things to know,”, held on 17.07.2020 and organized by Government PG College, Maldevta Raipur, Dehradun (Uttarakhand).
- xiv. Participated in the National webinar entitled “वर्तमान परिदृश्य में भारतीय साहित्य, मीडिया एवं सिनेमा की उपादेयता व संभावनाएं”, held on 17.06.2020 and organized by RR PG College, Amethi (UP).
- xv. Attended one day workshop on “Intellectual Property Rights (IPR)” on 20<sup>th</sup> December 2019 and organized by PLMS Govt.P.G.College, Rishikesh and MIT Dhalwala Rishikesh.
- xvi. Active participation in Conference on ‘New Education Policy and Quality Upgradation in Higher education’ on 28-29 September 2019 in Doon University.
- xvii. Attended workshop on “Job orientation and empowerment” on 22.08.2019 and organized by PLMS Govt.P.G.College, Rishikesh.
- xviii. Attended Workshop on ‘NAAC Accreditation’ on 28 December 2018 in Govt.P.G.College, Kotdwar, organized by RUSA Uttarakhand.
- xix. Attended Workshop on ‘NAAC Accreditation’ on 28 August 2018 in Doon University, organized by RUSA Uttarakhand.
- xx. Attended and organized quiz program in Brain Awareness Workshop 2017, at Pt.L.M.S.Govt.P.G.College, Rishikesh, On April 22, 2017.
- xxi. Attended and organized quiz program in Brain Awareness Programme 2015, Pt.L.M.S.Govt.P.G.College, Rishikesh, April 27, 2015.
- xxii. Attended International Upnishads Conference, November 29-30, 2014, Rishikesh
- xxiii. Attended National seminar on role of RTI in social empowerment ,Govt.P.G.College, Uttarkashi, 18 November, 2010.
- xxiv. Attended Regional Seminar on “Intellectual Property and Innovation Management in Knowledge Era” sponsored by NRDC, New Delhi and UCOST, Dehradun 31<sup>st</sup> July 2009, Uttarkashi
- xxv. Attended 28<sup>th</sup> All India Conference of Linguists  
2-4 November,2006  
Banaras Hindu University, Varanasi
- xxvi. Attended National Seminar on Tourism and Himalayan Bio-Diversity  
4-5 March, 2005  
Govt.P.G.College, Uttarkashi
- xxvii. Attended Seminar on Higher Education in Uttaranchal  
27 February, 2001, Pt. L.M.S. Govt.P.G.College, Rishikesh

## **12- TEACHING EXPERIENCE:**

23 years experience of UG and PG teaching

## **13- ADMINISTRATIVE EXPERIENCE**

- i. working as **Principal** of Government Degree College Nainbagh, Tehri Garhwal Uttarakhand
- ii. Worked as **Principal** of Government Degree College Pokhri Quili, Uttarakhand since 10 December 2019 to 22 September 2021.
- iii. Worked as **Head of Department** again since March 2019 to December 2019 in Govt. PG College Rishikesh.
- iv. Worked as **Head of Department** since 2004 to 2014 in Govt. PG College Uttarkashi.
- v. Several administrative, academic, co-curricular and extra-curricular activities are being organized in my supervision.

## **14- ONLINE COURSE/FDP/ORIENTATION/REFRESHERCOURSES/ TRAINING PROGRAMS**

- i. Completed 12-week online course on “Computational Material Physics” organized by Ghent University, Belgium, between July- October 2021.
- ii. Completed Two week online FDP program on ‘Developing online courses for SWAYAM’ 21 June to 05 July 2021. Organized by UOU, Haldwani and CEMCA New Delhi.
- iii. Completed Three month online course on ‘Basics of Quantum Mechanics’ 15 August 2019 to 18 Nov 2019, from IIT Kanpur.
- iv. Completed Three month online course on “Physics of Semiconductors’ 15 August 2017 to 20 Nov 2017, from IIT Kanpur.
- v. Completed Two month online course on “Learning Physics through Simple Experiments’ 20 Sept 2016 to 20 Nov 2016, from IIT Kanpur.
- vi. Orientation Course in Natural Sciences  
16.07.2001 to 10.08.2001  
ASC, JNU, New Delhi
- vii. Refresher Course in Physics  
07.02.2005 to 26.02.2005  
CPDHE, University of Delhi, Delhi
- viii. 8th Refresher Course in Women's Studies  
Jan 17 to Feb 06, 2007  
ASC, Banaras Hindu University, Varanasi
- ix. Refresher Course in Physics and Electronics  
Jan 09 to Jan 30, 2008  
CPDHE, University of Delhi, Delhi

## **15. Participation in Corporate Life:**

- i. Convener in selection committee of Assistant Professors in Dhanauri PG College, Dhanauri Haridwar on 19 August 2022.
- ii. Member of IAPT examination committee.
- iii. Member of inspection committee as expert physics for affiliation extension of UG courses for year 2020-21 in Dhanauri PG College, Dhanauri Haridwar, on 18.07.2021.
- iv. Member of inspection committee as expert physics for new affiliation of PG courses for year 2020-21 in Central Institute of Management and Technology, Roorkee, on 30.01.2021.
- v. Member of inspection committee as expert physics for new affiliation of PG courses for year 2020-21 in Dhanauri PG College, Dhanauri Haridwar, on 26.12.2020.
- vi. Head, Department of Physics since 2004 to 2014.
- vii. Co-ordinator IQAC, Co-ordinator Career Advancement Scheme Screening Committee, Convener and member of various administrative, cultural and sports committees of college.
- viii. Contribution in University Examination work .
- ix. Convener of an Innovative Project 'Intellectual Property Right Club' funded by District Innovation Fund of Rs 1.5 Lac.
- x. Acted as 'College Officer' for 'All India Survey of Higher Education' conducted by MHRD, Govt. Of India, New Delhi to fill survey form since 2010 to 2019.
- xi. Vice President of Indian Association of Physics teachers, Uttarakhand Zone.
- xii. College Coordinator, NMEICT linked IT skill program 'Spoken Tutorials' of IIT Mumbai.
- xiii. Organized several workshops, competitions like, essay, science fiction, poster, power point presentation, quiz, extempore, science exhibition etc. for physics students in the college.

## **16. Organization of Conferences/Seminars/Workshops:**

- i. National Conference on 'Fit India: Holistic Health Care for Quality Life' was organized on November 19, 2019 in Pt.L.M.S.Govt.P.G.College, Rishikesh.
- ii. National Conference on 'Holistic Approach Towards quality Enhancement in Higher Education' was organized on January 29-30, 2019 in Pt.L.M.S.Govt.P.G.College, Rishikesh sponsored by NAAC.
- iii. Two week Induction program was organized on teaching and Learning through ICT 09-11-2018 to 22-11-2018.
- iv. Workshop was organized for teachers on 'Strategies for adopting Innovations' on October 27, 2018.
- v. Seminar was organized for students on 'Student participation in social responsibility' on 04.10.2018.

- vi. Two social responsibility programs 'Swachha Bharat Mission', an approach towards eco-friendly system, and 'Each One Teach One, Each One Help One, learning beyond boundaries, were designed and launched on 04.10.2018.
- vii. Workshop was organized for teachers on 'Quality in curriculum development' on July 10, 2018.
- viii. A symposium was jointly organized with SR Asia and AIIMS Rishikesh, on June 5, 2018 on World Environment Day in AIIMS on the topic 'Institutional partnership for maximizing effect on minimal use of plastic' followed by Awareness and public consultancy program on 'beat the plastic pollution'.
- ix. Workshop was organized on "Teaching and Learning through ICT" and delivered a lecture on "E-learning Resources" on April 06, 2018 in Pt.L.M.S.Govt.P.G.College, Rishikesh.
- x. Workshop was organized on "Electronic Components: Identification and Applications" on October 10 2015 in Pt.L.M.S.Govt.P.G.College, Rishikesh.
- xi. Regional workshop on Intellectual Property Rights, 21-03.2014 Govt. P.G.College, Uttarkashi.

### **Organization of International/National Webinars:**

- i. Organized as organizing secretary, state level online interaction program on "National education policy-2020: Implementation and Challenges" on 9 September 2022.
- ii. Organized as convener National webinar entitled "लोक साहित्य: महत्व और प्रासंगिकता", held on 20.06.2020.
- iii. Organized as convener National webinar entitled "साहित्य अनुवाद: अवसर और चुनौतियां", held on 11.06.2020.
- iv. Organized as convener International webinar entitled "ऑनलाइन शिक्षण पद्धति: उपलब्धियां, समस्याएं और सम्भावनाएं", held on 30.05.2020.
- v. Organized as convener International webinar entitled "कोविड-19 के दौर में पत्रकारिता", held on 27.05.2020.
- vi. Organized as principal, International Quiz on General Hindi in May 2020.

## **17. Environmental Consciousness and Science Popularization**

### **Programs**

- i. Organize every year plantation activity and cleanliness drive in the college and in nearby society.
- ii. Stationary items, books and clothes were donated to the children belonging to Kustha family residing in Vandemataram Kunj, Ganga Bhogpur Rishikesh with the help of students on 08 August 2019.
- iii. Organized workshop on Learning physics through Simple Experiments in IDPL Inter College and SBM Inter College on 23-04-2019 and 24-04-2019 with the help of students of Department of Physics under 'Each One Teach One, Each One Help One, program.
- iv. Under 'Each One Teach One, Each One Help One, program, a team of college students and teachers (Department of Physics) visited & surveyed Kushth Ashram

- and donated food items to every person in the Ashram for one month on 22 November 2018.
- v. Under Swachha Bharat Mission and Swachhata Hi Sewa program more than 40 activities on sanitation drive with local community and awareness on minimal use of plastic, separation of bio-degradable and non-biodegradable wastes, compost formation etc. were performed at different location of Rishikesh & Haridwar and in college premises and also in association with THDC India Ltd. Rishikesh (26-08-2018). The area covered were Shail Vihar, Fire Station, Police Station Dhalwala, Gumaniwala, Aastha Path, Suman Park, Gurudwara Colony, Shaheed park, Gumaniwal, Sarwahanagar, Vamiki Basti, Har ki Padhi Haridwar, School of Haridwar etc. Feedbacks were also collected by community.
  - vi. Plantation activities were performed in college premises in association with THDC India Ltd. Rishikesh (31-08-2018).
  - vii. Large Plantation Activity at Neem Beach, Tapovan, Rishikesh on 27.07.2018 and three times in college campus in collaboration with other Institutions.
  - viii. Survey and Awareness program was conducted in Rishikesh on use of Renewable energy in October 2019, October 2017 and October 2016.
  - ix. Invited lectures were organized every year on topics belonging to popular science.

## **18. Reviewer in International Journals**

- i. International Journal of Hydrogen Energy
- ii. Journal of Alloys and Compounds
- iii. Surface and Coatings Technology
- iv. International journal of Renewable Energy Research
- v. International Journal of Energy Research
- vi. Materials Research Bulletin
- vii. Electrochemica Acta
- viii. International Journal of Basic and Applied Sciences
- ix. Wiley Macromolecular Symposia

## **19. E-learning Resources**

- i. Created a Blog on “Renewable Energy and Energy Harvesting” primarily to cater the need of B.Sc. students having course on “Renewable Energy and Energy Harvesting”  
<http://sumitasrivastava.blogspot.com>
- ii. My recorded lectures are available on You tube channel: Playlist- Statistical Mechanics by Prof. Sumita Srivastava -8 videos  
<https://youtube.com/playlist?list=PL3NUkxXXQHiYm2EqXqA38seNNbWDCu-Lb>
- iii. My recorded lectures are available on You tube channel: Playlist- Modern Physics-15 videos  
<https://youtube.com/playlist?list=PL3NUkxXXQHiYKhqJqfQTpmXH8z1dC7uDX>
- iv. Two more lectures are available on New Education policy and on Hydrogen Energy  
<https://www.youtube.com/channel/UCoFGq3PVrfVel62vFbCoNKw/>



## **20. Linkage and Collaborations/ Student support activities**

- i. Created a linkage with AIIMS Rishikesh for research work of M.Sc. Final Year Student Mr. Shubham Gwari to take measurement of Electromagnetic Radiation of Heavy Electrical and Magnetic Instruments for his dissertation entitled “Measurement of Electromagnetic Radiation in Surrounding” under my supervision.
- ii. Collaboration with National Physical Laboratory, New Delhi for research work on M.Sc. Dissertation by two students Km. Aastha Bhatt and Km. Sandhya Negi ( M.Sc.II Semester) under my supervision.
- iii. Collaborated with DRDO Lab Jodhpur for research work on M.Sc. Dissertation by two students Mr. Shashank Kumar and Mr. Maneesh Joshi ( M.Sc.II Semester) under my supervision.
- iv. Every year Students are promoted to participate and present their research paper in National Seminars/ workshops.
- v. Ten students of Physics from PG classes participated in National Physics Experiment Competition on 19.08.2018. Four students qualified for second stage. One student Shashank Kumar participated in final round and got third rank at national Level.
- vi. Every year students get selection in IIT Jam, GATE, NET JRF and JEST examinations.

## **21. Membership of Professional Organizations**

- i. Life member of Indian Association of Physics Teachers (L5464).
- ii. Professional life member of Institute of Scholars, India (InSc20210309)

Prof. (Dr.) Sumita Srivastava