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List of Publications

Research Articles

1. **Santosh Kachhap**, Shanas Fatima, Anjana Yadav, Akhilesh Kumar Singh, and Sunil Kumar Singh. "Expanding the Emission of $CsPbBr_3$ Nanocrystals in the Blue Region." *ACS Applied Optical Materials* 1, no. 12 (2023): 1974-1986.

2. **Santosh Kachhap**, Neeraj Kumar Giri, Rajiv Prakash, and S. K. Singh. "Photon upconversion-based non-invasive temperature sensing using $Gd_{1-x-y}Yb_xEr_yScO_3$ perovskite nanocrystals." *Journal of Alloys and Compounds* 936 (2023): 168192.

3. **Santosh Kachhap**, Sachin Singh, Akhilesh Kumar Singh, and Sunil Kumar Singh. "Lanthanide-doped inorganic halide perovskites ($CsPbX_3$): novel properties and emerging applications." *Journal of Materials Chemistry C* 10, no. 10 (2022): 3647-3676.

4. Charu Dubey, Anjana Yadav, **Santosh Kachhap**, SK Kumar Singh, Govind Gupta, Satendra Pal Singh, and Akhilesh Kumar Singh. "Effect of Mn^{2+} Doping and DDAB-Assisted Postpassivation on the Structural and Optical Properties of $CsPb(Cl/Br)_3$ Halide Perovskite Nanocrystals." *Methods and Applications in Fluorescence* (2024).

5. Shruti Sajwan, Manisha Sharma, **Santosh Kachhap**, Malika Singhal, Akhilesh Kumar Singh, Mohit Tyagi, Partha Sarathi Sarkar, Naveen Chauhan, and Sunil Kumar Singh. "Structural and optical properties of $Zn_{2.95}Ga_{2-x}SnO_8$: xCr^{3+}: An excellent X-ray charging-based persistent phosphor." *Journal of Alloys and Compounds*, 978 (2024): 173405.

6. Himani Thakur, Arvind K. Gathania, **Santosh Kachhap**, Sunil Kumar Singh, and Rajesh Kumar Singh. "Coprecipitation synthesis, structural, optical properties, and thermometry

application of Tm^{3+}/Yb^{3+} co-doped YPO_4 phosphor." *Journal of Luminescence* 254 (2023): 119513.

7. Sachin Singh, **Santosh Kachhap**, Manisha Sharma, and Sunil Kumar Singh. "Enhancing the temperature sensing property of a Ca 0.79− x Bi x Er 0.01 Yb 0.2 MoO 4 phosphor via local symmetry distortion and reduction in non-radiative channels." *RSC advances* 13, no. 22 (2023): 14991-15000.

8. Charu Dubey, Anjana Yadav, Diksha Baloni, **Santosh Kachhap**, Sunil Kumar Singh, and Akhilesh Kumar Singh. "Impact of crystal structure on optical properties and temperature sensing behavior of $NaYF_4$: Yb^{3+}/Er^{3+} nanoparticles." *RSC advances* 13, no. 30 (2023): 20975-20983.

9. Priyam Singh, **Santosh Kachhap**, Prabhakar Singh, and S. K. Singh. "Lanthanide-based hybrid nanostructures: Classification, synthesis, optical properties, and multifunctional applications." *Coordination Chemistry Reviews* 472 (2022): 214795.

10. Sachin Singh, **Santosh Kachhap**, Akhilesh Kumar Singh, Sasank Pattnaik, and Sunil Kumar Singh. "Temperature sensing using bulk and nanoparticles of $Ca_{0.79}Er_{0.01}Yb_{0.2}MoO_4$ phosphor." *Methods and Applications in Fluorescence* 10, no. 4 (2022): 044004.

Book Chapter

1. Priyam Singh, **Santosh Kachhap**, Manisha Sharma, Prabhakar Singh, and S. K. Singh. "Lanthanide-Doped Materials for Optical Applications." In Handbook of Materials Science, *Singapore: Springer Nature Singapore*, Volume 1: Optical Materials, pp. 99-127. 2023.

Conference/Workshop

1. Workshop attended on "**Photoelectron Spectroscopy (PES)"** 23rd – 24th July 2024, Central Discovery Center, Banaras Hindu University, Varanasi, Uttar Pradesh (India)

2. Poster Presentation on 4th International Conference on "**Materials Sciences (ICMS-2024)**" 21st January – 2nd February 2024, Tripura University (A Central University), Agartalla (India).

3. Oral Presentation on International Conference "**Advances in Spectroscopic Techniques and Materials (ASTM 2024)**" 18th – 20th January 2024, IIT ISM, Dhanbad Jharkhand (India).

4. Oral Presentation on International Conference" **European Materials Research Society (E-MRS) Fall Meet 2023)"** 18th-21st September 2023, Warsaw University of Technology, Warsaw, Poland.

5. Poster presentation on" 8th Edition of **the International Conference on Nanotechnology for Better Living (ICNBL-2023)"** 25th – 29th May 2023, NIT Srinagar, Srinagar (India).

6. Oral presentation on Conference "**2nd National Conference on Advance Nanomaterials and Applications (ANA-2023)**" 20th – 22nd March 2023, Central University of South Bihar, Bihar (India).

7. Poster presentation on Conference "**Perovskite Society of India Meet-2023 (PSIM-2023)**" 1st – 3rd March 2023, IIT Roorkee, Uttarakhand, (India).

8. Hands-on Training Workshop attended on "**Synthesis and Characterization of Nanomaterials for Energy, Lighting & Bio-imaging Applications**" 7th – 13th November, 2022, IIT ISM, Dhanbad, Jharkhand (India).

9. Training program attended on **"Experimental Methods for Nanotechnology Research"** (Synergistic Training Program Utilizing the Scientific and Technological Infrastructure), 2nd – 8th April 2022, Banasthali Vidyapith, Rajasthan (India).

10. Poster presentation on Conference "**Probing Materials using Spectroscopic Tools: Basics and Applications**" 28th February – 4th March 2022, Mahatma Gandhi Central University, Motihari, Bihar (India)

11. Poster presentation on "**National Workshop on Fluorescence and Raman Spectroscopy" FCS 2021 (Fluorescence Society),** 29th November – 4th December 2021, IISER Thiruvananthapuram (India).

12. Conference attended on **"Advanced Materials for Better Tomorrow"** (The Society for Inter Disciplinary Research in Material and Biology), 13th – 17th July 2021, IIT BHU Varanasi (India).