Dr. Meenakshi

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Professional Summary

A high-energy professional with a record of achievements, targeting for the opportunity to grow in IPR sector. A certification course on Intellectual Property Rights (IPR) from WIPO has been done and targeting to do such courses in future. I am PhD in chemistry from the University of Delhi having 6 year of postdoctoral research experience from India and China. My first postdoctoral research experience was in a National Post-doctoral fellowship program under DST-SERB funded Project hosted by Solid State Physics Laboratory DRDO, Delhi, India. My second postdoctoral experience was as a research assistant in Fudan University, Shanghai, China a well-known university in China and at 40th position in the QS ranking of universities. I have earned a total of 17 publications in my total research career.

Skills

- ✓ Strong organizational skills and proficient with MS office tools.
- ✓ Strong critical and analytical skills in chemistry.
- \checkmark Strong research aptitude.
- ✓ Voracious appetite for increased knowledge.

Experience

- ✓ Worked as **Research Assistant** in Fudan University, Shanghai, China from March 2019-March 2023.
- ✓ Post doctoral fellow as national postdoctoral fellow under DST project in Solid State Physics Laboratory, DRDO, Timarpur from Aug, 2016-July 2018.

Education

Ph.D. under the supervision of Prof. R. Nagarajan, Professor, Department of Chemistry, University of Delhi, 2015.

Ph.D. Thesis title is

"Synthesis, Characterization and Applications of Some Ternary Sulfides Containing p Block Elements (In, Ga, Sn, Sb, Bi): A Modern Inorganic Chemistry Approach"

- M.Sc. (Chemistry), Hansraj College, University of Delhi, Delhi (INDIA), 2009.
- **B.Sc.** (Chemistry Hons.), Zakir Husain College, University of Delhi, Delhi (INDIA), 2007.

Achievements

- Awarded Junior Research Fellowship (JRF) from Council of Scientific and Industrial Research (CSIR) in the year 2009.
- Cleared other entrance exams such as GATE and BARC in 2009.
- > Actively participated in organizing workshop and attended international conferences.

Training

- Short-term certified course on "Green Chemistry" in 2008 from Hindu College, University of Delhi.
- > Certification course on Intellectual Property Rights (IPR) from WIPO.
- Certified workshop training at Department of Chemistry, University of Delhi, Delhi. INDIA in "IUCr workshop on XRD systems and its Applications" from December 25-26, 2014..

Scientific Software Skills

FT-IR, UV-VIS, PXRD, TEM-SAED, SEM, PL, Raman and Magnetic measurements.

Technical Skills: Operation of Powder X-Ray Diffractometer, Raman Spectrometer, Thermogravimetry, FTIR Spectrometer, UV-Vis Spectrophotometer, Photoluminescence spectrometer, Cyclic voltametry, CVD furnace.

Software Skills: Origin, Powder X, Gatan Digital micrograph, HighScore Plus, Powder cell, TOPAS, Diamond, Fullprof, Chem Draw, Indx.

List of Publications (recent 3 publication among 17)

1. Deep Dive into Lattice Dynamics and Phonon Anharmonicity for Intrinsically Low Thermal Expansion Coefficient in CuS. Sudeshna Samanta, <u>Meenakshi Gusain</u>, Yiming Zhang, Yiqiang Zhan, Hao Zhang, Lin Wang, Shisheng Xiong ChemNanoMat 2022, 8, e202200238.

2. A hybrid self-growing polymer microtip for ultracompact and fast fiber humidity sensing. Zixian Hu, Yuxing Chen, Jingyu Tan, ZhengYu Yan, Zhenhua Weng, <u>Meenakshi Gusain</u>, Yiqiang Zhan*, Limin Xiao Sensors and Actuators B: Chemical, 2021, 346, 130462.

3. Highly Efficient 1D/3D Ferroelectric Perovskite Solar Cell. Haijuan Zhang, Zejiao Shi, Laigui Hu, Yuan-Yuan Tang, Zhengyuan Qin, Wei-Qiang Liao, Zi Shuai Wang, Jiajun Qin, Xiaoguo Li, Haoliang Wang, <u>Meenakshi Gusain</u>, Fengcai Liu, Yiyi Pan, Mingsheng Xu, Jiao Wang, Ran Liu, Chunfeng Zhang, Ren-Gen Xiong, Wei E. I. Sha, Yiqiang Zhan* Advance Functional Materials. 2021, 31, 2100205.

Review

Organic-inorganic Porphyrinoid Frameworks for Biomolecules Sensing Arora, Smriti; Nagpal, Ritika; **Gusain, Meenakshi**; Singh, Balram ; Pan, Yuanwei; Yadav, Deepak; Ahmed, Ishtiaq; Kumar, Vinod; Parshad, Badri, ACS Sensors (accepted), 2023.

Conference Proceedings

- Structural Properties of MoS₂ Layers grown by CVD Technique Radhapiyari Laishram^{*}, S. Praveen, Meenakshi Gusain, Preeti Garg, J.S. Rawat and Chandra Prakash 6th International Symposium on Integrated Functionalities ISIF 2017, Journal of Integrated Ferroelectrics(Accepted)
- Structural and Electrical Properties of Ba_{1-x}Y_xTi_{0.955}Zr_{0.045}O₃ Ceramics Meenakshi Gusain, Radhapiyari Laishram, and Chandra Prakash 6th International Symposium on Integrated Functionalities ISIF 2017, Journal of Integrated Ferroelectrics (under revision)
- Synthesis and characterization of surfactant free MoS₂ 3D microspheres
 <u>Meenakshi Gusain</u> and Sushil Kumar Singh

 W. Laterariand Workshammer die Planian of Surface International (IWPSD 2017) Describer 11, 15, 2017 (under angle)

XIX International Workshop on the Physics of Semiconductor Devices (IWPSD 2017), December 11-15, 2017, (under revision)

Book Chapters

1. Chapter name "Conducting polymeric nanocomposite for supercapattery" Submitted to Elsevier Publishing, Imprint: Date: 1st November 2020, Book Name: Advances in Supercapacitor and Supercapattery: Innovations for Energy Storage Devices.

Web Link: https://www.elsevier.com/books/advances-in-supercapacitor-and-supercapattery/khalid/978-0-12-819897-1

2. Chapter name "Energy Storage Devices (Supercapacitors and Batteries)" submitted to Springer, Nature Switzerland AG, 2021, Book Name: Advances in Hybrid Conducting Polymer Technology.

Web link: https://www.springer.com/gp/book/9783030620899#aboutBook

3. Chapter name "Analysis and characterization of quantum dots" Submitted to Woodhead Publishing Series in Electronic and Optical Materials, Imprint: Date: 29th July 2022, Book Name: Graphene, Nanotubes and Quantum Dots-Based Nanotechnology: Fundamentals and applications

Web Link: https://www.sciencedirect.com/science/article/pii/B978032385457300027X

4. Chapter name "Synthesis methods of quantum dots" Submitted to Woodhead Publishing Series in Electronic and Optical Materials, Imprint: Date: 29th July 2022, Book Name: Graphene, Nanotubes and Quantum Dots-Based Nanotechnology: Fundamentals and applications Web Link: <u>https://www.sciencedirect.com/science/article/pii/B9780323854573000062</u>

5. Chapter name "Structural effects on halide perovskite properties: Structure, Synthesis, and Applications" Submitted to Elsevier, Dated: 2023, Book Name: Low-Dimensional Halide Perovskites

Web Link: https://www.sciencedirect.com/science/article/pii/B9780323885225000089?via%3Dihub

6. Chapter name "MXene for solar cells" Submitted to Elsevier publishing, Imprint: 2023, Book Name: Solar Energy Harvesting, Conversion, and Storage Materials, Technologies, and Applications

Conferences/Workshop attended and poster presented

- "Synthesis and characterization of surfactant free MoS₂ 3D microspheres" Meenakshi Gusain and Sushil kumar Singh XIX International Workshop on the Physics of Semiconductor Devices (IWPSD 2017), December 11-15, 2017, Indian Institute of Technology Delhi, New Delhi, INDIA.
- "Structural Properties of MoS₂ Layers grown by CVD Technique" Radhapiyari Laishram, S. Praveen, Meenakshi Gusain, Preeti Garg, J.S. Rawat and Chandra Prakash 6th International Symposium on Integrated Functionalities, December 10-13, 2017, New Delhi, INDIA.
- "Structural and Electrical Properties of Ba_{1-x}Y_xTi_{0.955}Zr_{0.045}O₃ Ceramics" Meenakshi Gusain, Radhapiyari Laishram, and Chandra Prakash 6th International Symposium on Integrated Functionalities, December 10-13, 2017, New Delhi, INDIA.
- "Monolayer MoS₂: Systematic Synthesis and Device Fabrication" Meenakshi Gusain, Shalu Dagar, S.Praveen, Radhapiyari Laishram, J.S.B.S.Rawat and Chandra Prakash NANO INDIA 2017, March 15 - 18, 2017, Indian Institute of Technology Delhi, New Delhi, INDIA.
- "Soft chemical synthesis of Ag₃SbS₃ with efficient and recyclable visible light photocatalytic properties" Pooja Rawat, <u>Meenakshi Gusain</u>, Rajamani Nagarajan
 4th International Symposium on Materials Chemistry, December 9-13, 2014, Bhabha Atomic Research Centre (BARC), Trombay, Mumbai. INDIA.
- "Wurtzite CuInS₂: Solution based one pot direct synthesis and its doping studies with non-magnetic Ga³⁺ and magnetic Fe³⁺ ions" <u>Meenakshi</u> and Rajamani Nagarajan

International Union of Materials Research Societies-International Conference in Asia 2013 (IUMRS-ICA 2013), December 16 - 20, 2013, Indian Institute of Science, Banglore, INDIA.

- "Wurtzite CuInS₂: Solution based one pot direct synthesis and its doping studies with non-magnetic Ga³⁺ and magnetic Fe³⁺ ions" <u>Meenakshi</u> and Rajamani Nagarajan 3rd Nanotoday Conference, December 8 - 11, 2013, Matrix, Biopolis, SINGAPORE.
- "Solvent Mediated Room Temperature Synthesis of Highly Crystalline Cu₉S₅ (Cu_{1.8}S), CuSe, PbS and PbSe from their Elements" <u>Meenakshi</u>, Prashant Kumar, Rajamani Nagarajan 4th International Symposium on Materials Chemistry, December 11-15, 2012, Bhabha Atomic Research Centre (BARC), Trombay, Mumbai. INDIA.
- "Synthesis of Cu_{1.8}S and CuS from Copper-Thiourea complexes; anionic (Cl⁻, NO₃⁻, SO₄²⁻) influence on the product stoichiometry" Prashant Kumar, <u>Meenakshi</u>, Rajamani Nagarajan INDO-US meeting on New Functional Material: Synthesis, Preparation and Methods, June 2- 6, 2011, Manali, Himachal Pradesh, INDIA.
- "A Novel Single Source Precursor Approach for the Synthesis of Cu(I) Sulfide: An intermediate Step" <u>Meenakshi</u>, Prashant Kumar, Rajamani Nagarajan ^{3rd} International Symposium on Materials Chemistry, December 7-12, 2010, Bhabha Atomic Research Centre (BARC), Trombay, Mumbai. INDIA.

REFERENCES

1. Professor Rajamani Nagarajan B 007, Department of Chemistry University of Delhi Delhi 110 007 INDIA Mail id: magarajan@chemistry.du.ac.in Ph:91-11-2766 2650 2. Professor Sitharaman Uma Department of Chemistry University of Delhi Delhi 110 007 INDIA Mail id: sitharamanuma@yahoo.com, suma@chemistry.du.ac.in Ph: 91-11-2766 2650 3. Dr. Sushil Kumar singh Scientist "F" Solid State Physics Laboratory TimarPur, Lucknow Road

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I hereby declare that the details furnished above are true to the best of my knowledge

Place: Delhi

(Meenakshi)