
Shivangi Singh

Post-Doctoral Fellow

National Taiwan University (QS Ranking 2025 - 68th), Taiwan

 shivic4@gmail.com |  [+886-981457434](tel:+886-981457434) |

 [Google Scholar link](#) |  [LinkedIn link](#) |



Professional Summary

Post-Doctoral Fellow specializing in CO₂ reduction technologies, water treatment, and advanced analytical techniques. Proven expertise in synthesizing perovskite quantum dots for efficient CO₂ reduction. Skilled in chromatography, spectrometry, and 3D printing for nanocomposite device fabrication, like magnetic beads, with a strong research background in environmental applications and materials science.

Education

- **Ph.D. in Medical Laboratory Science and Biotechnology**

Kaohsiung Medical University, Taiwan | *March 2020 - December 2023*

- **M.Sc. in Applied Chemistry**

Amity University, Uttar Pradesh, India | *July 2016 - June 2018*

- **B.Sc. in Chemistry (Hons.)**

Amity University, Uttar Pradesh, India | *July 2013 - June 2016*

Research Experience

1. *Post-Doctoral Fellow, Department of Chemistry, National Taiwan University, Taiwan / March 2024-present*

Project 1:

- Development of Perovskite quantum dots through a microfluidics setup and its application in CO₂ reduction through in situ APXPS analysis.

Project 2:

- Analysis of Phosphor materials for biomonitoring and bioimaging in NIR-I and II regions also enhanced light-emitting properties in semiconductor materials.

2. *Ph.D. Candidate, Department of Medical Laboratory Science and Biotechnology, Kaohsiung Medical University, Taiwan* / March 2020-December 2023

- Researched and applied PEI-coated activated carbon magnetic beads to co-remove Cr (VI) and food colorants.
- Synthesized carbo-gel to extract multi-metal ions, prepared graphene quantum dots (GQDs) for efficient toxic metal detection, engineered a PANI (Polyaniline)-laminated PEG/cellulose aerogel for TCS analysis, and designed 3D printed models for semi-online pollutant analysis.

3. *M.Sc. (Applied Chemistry), Amity Institute of Applied Sciences, Amity University, Noida, Uttar Pradesh, India* / July 2016 - June 2018

Research Intern, Jubilant Generics and Life Sciences | May 2017-July 2017

- Conducted synthesizing and characterizing intermediates for antipsychotic drug synthesis and developed compounds, including 1-(chloromethyl)-4-isobutoxybenzene.

4. *Research Intern, Jamia Hamdard University, Delhi, India* / Dec 2017- May 2018

- Investigated antimicrobial properties of chemically and naturally synthesized Bismuth oxyhalides.

Technical Skills

- **Instrumentation:** HPLC, GC-MS, TLC, FTIR, XRD, XPS, UV/Vis, ICP-MS, SEM, TEM, In-situ-XPS, In situ XRD.
- **Analytical Techniques:** Nanocomposite Fabrication, Magnetic and Fluorescence Probes, Material Chemistry, Analyte Extraction, Photoelectrochemical Studies
- **Software:** Origin Lab, Clarity, ImageJ, Microsoft Office, Autodesk 123D

Publications

- *Unveiling Nano-Surface features of CsPbBr₃ versus Cs₄PbBr₆-Embedded CsPbBr₃ for CO₂ Photoreduction; Behrouz Bazri, **Shivangi Singh**, Kashyap Dave, Da-Hua Wei*, Ru-Shi Liu* **Small by Wiley (I.F-13.0)***
- *Biopolymeric chitosan/polydopamine thin film-based miniaturized hand-operable 3D-printed dispersion device: A green energy-efficient method for matrix free metal analysis. Arputharaj, Emmanuvel; Huang, Yu-Hui; **Singh, Shivangi**; Mariadoss,*

Arokia Vijaya Anand; Delattre, Cedric; Chen, Po-Chih; Huang, Yeou-Lih*

International Journal of Food and Drug Analysis (I.F-2.6)

- *Aerogel-based 3D printed SPE syringe filter: An enhanced quick sample pretreatment clip-on cartridge for matrix-free complex sample analysis.* **Shivangi Singh**, Emmanuvel Arputharaj, You-Rong Wu, Hans-Uwe Dahms*, Yeou-Lih Huang* **Chemosphere (Under Review-Chemosphere)**
- *Switchable metal extractant integrated miniaturized 3D-printed device: A semi-online multi-metal separation system for matrix-free ICP-MS analysis.* Emmanuvel Arputharaj; **Shivangi Singh**; Yu-Hui Huang; You-Rong Wu; Karthikeyan Perumal; Govindasami Periyasami; Yu-Ying Chao; Hans-Uwe Dahms*; Yeou-Lih Huang* **Analytica Acta (I.F-6.91)**
- *Phosphonium ionic liquid conjugated magnetic graphitic carbon nitride nanocomposite: An effective sample pretreatment tool for selenium separation and determination.* Emmanuvel Arputharaj, **Shivangi Singh**, Raghavendra Rao Pasupuleti, Chun-An Kuo, WeiJyun Ya, Yu-Hui Huang, You-Rong Wu, Yu-Ying Chao, Yeou-Lih Huang* **RSC- Analytical Methods (I.F-3.1)**
- *Lysozyme Carbo-Gel Integrated Repackable Miniaturized Microextraction Device: A Platform for Rapid Enrichment and Sensitive Detection of Multimetal Ions.* **Shivangi Singh**, Emmanuvel Arputharaj, You-Rong Wu, Chetan Prakash Sharma, Christopher J. Arnusch, Hans-Uwe Dahms, * and Yeou-Lih Huang* **ACS ES&T Engineering (I.F-7.1)**
- *Chitosan-based nanocomposites for removal of Cr (VI) and synthetic food colorants from wastewater.* **S Singh**, E Arputharaj, HU Dahms, AK Patel, YL Huang*, **Bioresource Technology (I.F- 11.89)**
- *Visible fluorescent sensing of Cu^{2+} ions in urine by reusable chitosan/L-histidine-stabilized silicon nanoparticles integrated thin layer chromatography sheet.* E Arputharaj, **S Singh**, RR Pasupuleti, HU Dahms, YL Huang*, **Analytica Chimica Acta (I.F-6.99)**
- *Zinc oxide nanoparticles using plant *Lawsonia inermis* and their mosquitocidal, antimicrobial, anticancer applications showing moderate side effects.* P Amuthavalli, JS Hwang, HU Dahms, L Wang, J Anitha, ...**S Singh**, **Scientific reports (I.F-4.99)**

Teaching and Mentorship Experience

Teaching Assistant, College of Life Sciences, Kaohsiung Medical University, Taiwan

- Mentored master's students in metal chemistry concepts and experiments, fostering a deeper understanding of the subject matter

Presentations and Conferences

- MRS-T Annual Meeting, Taichung Taiwan | *November 15-16, 2024*
- Phosphor Safari Conference 2024, Taipei, Taiwan | *August 1- 2, 2024*
- Bio Asia Taiwan 2023, Taipei / *July 26-30, 2023*
- TSMS Annual Conference (Taiwan Society for Mass Spectrometry), Taichung | *July 4-06, 2023*
- International Virtual Conference on Food Science & Nutrition, London, United Kingdom | *June 26-27, 2023*
- Chemistry National Meeting, National University of Kaohsiung | *March 12, 2023*
- Ocean Sciences Conference, National Penghu University | *October 2021*
- International Sustainable Development Conference, National Pingtung University of Science and Technology | *November 2020*

Achievements

- **Excellence prize** in STEM Female Talents Cultivation Program - 111 Academic Year Student Paper Competition, International Symposium on Biosciences for Human Health, 2023
- **First place** in student poster competition, College of Life Science, Kaohsiung Medical University, 2022
- Secured **17th rank** in Delhi University Ph.D. entrance test conducted by NTA, 2019.
- Qualified **CUCET**, India, Ph.D. (Central Universities Common Entrance test), 2019

References:

1. Prof. Hans-Uwe Dahms, Ph.D., D.Sc

Professor, Dept. of Biomedical Science, Kaohsiung Medical University, Taiwan

 hansd@kmu.edu.tw |  +886-(07)3121101 ext. 2695

2. Prof. Yeou-Lih Huang

Department of Medical Laboratory Science, Kaohsiung Medical University, Taiwan

 yeliuh@kmu.edu.tw |  +886-(07)3121101 ext. 2251