

Yasar Arafath S

PhD Researcher | Environmental Analytical Chemistry | LC-MS/MS & HRMS | Emerging Contaminants & WBE

- ▶ Busan, South Korea
- ▶ 10+ years analytical chemistry

Contact

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📄 yasar-arafath-chemist

🔄 yasararafath-s

Education

🎓 **PhD Candidate (expected Feb 2026)**, Env. Engineering, Pusan National University, S. Korea

🏛️ **M.Sc. Chemistry**, National Institute of Technology, India

🏛️ **B.Sc. Chemistry**, Bharathidasan University, India

Core Competencies

🔍 Target Analytes: Pharmaceuticals, Pesticides, PFAS, Emerging Contaminants

📊 Instrumentation (LC-MS/MS, GC-MS/MS, HPLC/UPLC)

🧪 Sample Preparation (SPE, LLE, QuEChERS)

🔪 HRMS (Non-target, Suspect Screening)

📈 DoE, Statistics, Uncertainty

🔧 Instrument Qualification (IQ/OQ/PQ)

🛡️ QA/QC, GLP/GMP, ISO 17025, RCA & Lean Tools

📄 Technical Writing, Reports & Publications

Summary

PhD Researcher and Analytical Scientist with **10+ years** of expertise in regulatory **LC-MS/MS** and **GC-MS/MS** method development for environmental and pharmaceutical sectors. Proficient in **HPLC**, **UPLC**, **HRMS**, and advanced **sample preparation**. Experienced in validation aligned with **ICH**, **USP**, **EU SANTE**, and **US EPA** guidelines. Develops transparent **Python** and **R** pipelines for **non-target screening** and **statistics**, producing decision-ready results. Recognized for mentoring teams and driving cross-functional collaboration. Skilled in **GMP**, **ISO 17025**, **LIMS**, **RCA**, and **Lean** methodologies.

Professional Experience

Research Scientist, Environmental Analytical Chemistry

2021 - Present

Pusan National University
Busan, South Korea

- Developed and validated multi-residue **LC-MS/MS** and **GC-MS/MS methods** for tracking over 400 analytes including pharmaceuticals, pesticides, drugs of abuse, and **emerging contaminants (PFAS, QACs, personal care products, lifestyle chemicals, PAHs, OPFRs)** across complex environmental matrices (wastewater, river water, sediment, and sludge).
- **Mentored junior researchers** and graduate students on instrument troubleshooting, **method validation protocols**, and data integrity, ensuring safe and reproducible laboratory practices.
- Performed **wastewater-based epidemiology (WBE)** to monitor population-level consumption of illicit drugs and lifestyle chemicals; conducted **chiral LC-MS/MS** analysis to distinguish enantiomeric purity.
- Established automated **Python and R workflows** for non-target screening, statistical analysis, and visualization. Findings published in **Water Research** and **STOTEN**. Participated in international interlaboratory studies with the **SCORE network**.

Senior Executive, Quality Control

2020 - 2021

Strides Pharma Science Limited
Bangalore, India

- Executed **release and stability testing** for oral-solid dosage forms (tablets, softgels, capsules) using **HPLC (UV/PDA/RI/CAD)**, GC, and Karl Fischer, ensuring compliance with global regulatory standards.
- Led investigations into OOS/OOT results using **RCA** and **FMEA**. Championed **behavior-based safety (BBS)** initiatives and contributed to laboratory budget planning.
- Optimized laboratory throughput by standardizing sequences via **Chromeleon CDS and LIMS**, reducing turnaround time (TAT) by 17%.

Technical Skills

-  **Data Science:** Python, R, SQL, Git, GitHub, VS Code, Quarto
-  **CDS & Mass Spec:** Xcalibur, MassHunter, Analyst, Empower, Chromeleon, OpenLab
-  **Informatics:** MZmine, Compound Discoverer, LIMS, ELN, SAP
-  **General:** Office 365, Power BI, SigmaPlot, ChemDraw, Origin-Pro

Certifications

-  **Estimation of Measurement Uncertainty** (University of Tartu, 2025)
-  **Master Data Science Program** (HCL GUVI, IITM Research Park, 2024)
-  **Mass spectrometry certification** (SCIEX, 2023-2024)
-  **Programming micro-courses:** Python, R, SQL, ML (LinkedIn Learning, 2022-2025)

Languages

-  English (professional)
-  Tamil (native)
-  Korean (intermediate)
-  French, German (beginner)

Senior Executive, Quality Control
Syngene International Limited
Bangalore, India

2018 - 2020

- Conducted in-process and intermediate testing for API manufacturing using **HPLC (UV/PDA/RI/ELSD)**, GC, and FT-IR. Managed high-volume workloads (250 samples/month) for assay, purity, and residual solvents.
- Ensured strict data integrity through **21 CFR Part 11 compliant** LIMS workflows, delivering critical quality results to production and QA teams.
- Executed **risk-based cleaning validation** (rinse and swab sampling) to verify equipment cleanliness and prevent cross-contamination.

Officer, Quality Control

Amway India Enterprises Pvt. Ltd.
Madurai, India

2015 - 2018

- Oversaw **sampling and chain of custody** for raw materials and finished products (personal care/nutraceuticals), ensuring traceability and compliance.
- Performed **wet chemistry and chromatographic analyses** (HPLC, GC, ICP-OES) according to USP/IP specifications for assay, identity, and impurities.
- Led **facility water system validation** (pure steam, purified water) and instrument qualification (**IQ/OQ/PQ**); authored SOPs, CAPAs, and change controls to maintain quality systems.

Publications

- **Sharfudeen, Y. A.**, Kim, M., Kim, D., Cha, H. J., & Oh, J. E. (2025). Site-specific assessment of illicit drug consumption patterns via wastewater-based epidemiology. *Water Research*, 287 (Part B), 124487.
- Sim, W., Dominic, E. O., Lee, E. H., **Sharfudeen, Y. A.**, Kim, K. H., & Oh, J. E. (2024). Distribution and ecological risk assessment of priority water pollutants in river sediments. *Chemosphere*, 352, 141275.
- **Sharfudeen, Y. A.**, Cha, H. J., & Oh, J. E. (2023). Tracking methamphetamine and amphetamine consumption via enantiomeric analysis of wastewater. *Science of The Total Environment*, 905, 166910.
- Jerome, P., **Sharfudeen, Y. A.**, Haribabu, J., Bhuvanesh, N. S. P., & Karvembu, R. (2019). Effect of 2-Bromopyridine ancillary ligand in the catalysis of Pd(II)-NNN pincer complexes towards Suzuki-Miyaura cross-coupling reaction. *ChemistrySelect*, 4(7), 2237–2241.

Awards

- Dream Team Award - Strides Pharma Science Limited (2020)
- **Amway India Awards:** Sparkle Award (2018), Team Award (2017), Wow Award (2016)