

YASAR ARAFATH SHARFUDEEN

Analytical Scientist, Ph.D. | Method Development & Validation | LC-MS/MS, GC-MS/MS & HRMS | Data Analysis (Python, R)

yasar15185@gmail.com · [Github](#) · [LinkedIn](#) · [Portfolio](#) · Regina, SK, Canada

Summary: Ph.D. scientist with **11+ years** across analytical chemistry, environmental research, and pharmaceutical **quality control**. Develops and validates **LC-MS/MS**, **GC-MS/MS**, and **HRMS** methods to US EPA, ICH, USP, and EU SANTE standards, and builds **Python** and **R** pipelines that turn complex instrument data into decision-ready results. Currently developing trace-level **PFAS** methods and leading regional water sampling at the University of Regina. **Five multi-residue methods** validated across water, sludge, and sediment; supported **USFDA**, **GMP**, **FSSAI**, and **Korean MFDS** inspections with **zero observations**.

Technical Skills: PFAS, LC-MS/MS, GC-MS/MS, HRMS, SPE, Method Validation, Field Sampling, Lab Management, WHMIS Safety, GLP, ISO 17025, QA/QC, Python, R, SQL

EDUCATION

 **Pusan National University** Busan, South Korea
Ph.D., Environmental Engineering (Feb 2026)
Thesis: Assessment of Community Lifestyle Patterns and Health Status Using Wastewater-Based Epidemiology

 **National Institute of Technology** Tiruchirappalli, India
M.Sc., Chemistry (Aug 2015)
First Class

 **Bharathidasan University** Tiruchirappalli, India
B.Sc., Chemistry (Apr 2013)
First Class with Distinction

EXPERIENCE

 **University of Regina** Jun 2026 - Present
Regina, SK, Canada
Postdoctoral Fellow, Env. Analytical Chem.

- Developing and validating trace-level **LC-MS/MS methods for PFAS** in environmental waters — **SPE** clean-up, isotope-dilution quantitation, matrix-effect evaluation, and LOD/LOQ determination per **US EPA** methodology.
- Planning and executing regional **field sampling campaigns for agricultural dugouts** across Saskatchewan — sampling design, **chain of custody**, preservation and transport, and field QC (blanks, duplicates, spikes).
- Investigating occurrence, fate, and **treatment of emerging pollutants** in prairie water sources, translating analytical results into decision-ready reports for academic and stakeholder audiences.
- Managing **laboratory operations**: instrument logbooks and analytical records, calibration and preventive maintenance scheduling, chemical inventory, SOP authoring, and **WHMIS safety** and waste-handling compliance.
- Mentoring** graduate and undergraduate students in instrumental analysis and QA/QC practice; contributing to **grant proposals** and peer-reviewed manuscripts.

 **Pusan National University** Mar 2021 - May 2026
Busan, South Korea
Research Scientist, Env. Analytical Chem.

- Developed and validated **five LC-MS/MS and GC-MS/MS methods** — multi-residue pharmaceuticals (100+ compounds), pesticides (210 compounds), acrylamide, THC-COOH, and chiral analysis — across wastewater, river water, drinking water, sludge, and sediment.
- Supported **PFAS and QACs method development**; performed instrument troubleshooting, maintenance, and method validation while upholding strict data integrity and reproducible laboratory practices.
- Performed **wastewater-based epidemiology (WBE)** to monitor population-level consumption of illicit drugs and lifestyle chemicals, including enantiomeric (chiral) profiling.

- Built automated **Python and R workflows** for non-target screening, statistics, and visualization; co-authored peer-reviewed publications including **Water Research** and **STOTEN**, and participated in international interlaboratory studies with the SCORE network.

 **Strides Pharma Science Limited** Jan 2020 - Jan 2021
Senior Executive, Quality Control 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%.

 **Syngene International Limited** Apr 2018 - Dec 2019
Senior Executive, Quality Control Bangalore, India

- 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.

 **Amway India Enterprises** Jun 2015 - Mar 2018
Officer, Quality Control Madurai, India

- 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.

SELECTED 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.

HONORS & AWARDS

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