

Anjam Sadik

314-629-4403 • anjamsadik@gmail.com • [LinkedIn](#) • [Google scholar](#)

HIGHLIGHTS

- PhD analytical chemist with 1 year of pharmaceutical experience as a Quality Control Analyst, 7+ years of research experience, leading to 1 peer-reviewed research article, 4 conference presentations, and 2 manuscript reviews
- 6+ years of expertise in operating and maintaining analytical instruments, including LC-MS, GC-MS and CE

EDUCATION

- **PhD** (Analytical Chemistry), University of Kentucky, KYAug 2020 - April 2025
- **MS** (Analytical Chemistry), Saint Louis University, MOAug 2016 - May 2019
- **BS** (Chemistry), University of Dhaka, Bangladesh.....Jan 2011 - Dec 2015

INDUSTRIAL EXPERIENCE

- Quality Control (QC) Chemist**, Huvepharma Inc., Saint Louis, MO..... July 2019 - July 2020
- Conducted analytical tests on active pharmaceutical ingredients (API), finished products and stability samples according to standard operating procedures (SOP) developed by United States Pharmacopeia (USP)
 - Performed HPLC assay, UV-Vis, FTIR, TLC, viscosity, titration, conductivity and other wet chemistry techniques
 - Ensured adherence to GLP and cGMP guidelines and documented test results, OOS and OOT

INSTRUMENTAL and ANALYTICAL SKILLS

- HPLC-MS/MS (QqQ, ion trap) • GC-MS • Orbitrap HRMS • MALDI-TOF MS • UV-Visible spectroscopy
- Capillary electrophoresis (CE) • Method development and validation • LIMS (Sapio) • SOP development
- Maintenance (LC-MS and GC-MS method transfers, mass spectrometric calibration, filament replacement, septum and liner replacement, GC-MS column change and ion-source cleaning)

LC and LC-MS EXPERIENCE

- HPLC method development and sorbent selection for recovery of therapeutic phenolic compounds from industrial biorefinery plant-biomass process streams **(June 2021 – July 2024)**
 - Characterized 6 chromatographic packing materials (including C18 and β -cyclodextrin) using LC-MS on a Thermo linear ion trap platform, assessing separation performance to guide stationary phase selection
 - Established retention trends for 22 phenolic monomers and dimers on C18 and β -cyclodextrin columns by analyzing retention factors and selectivity with an Agilent HPLC-diode array detector (DAD) system
 - Conducted preparative-HPLC with UV-vis detection to purify synthetic phenolic dimer (achieved ~100% purity)
 - Outcomes:** - HPLC separation conditions were established for selective separation of the phenolic analytes
 - Characterized pressure-induced morphological changes in capillary HPLC column packing particles supporting the design of packing materials
 - Demonstrated LC with fluorescence detection as a more reproducible platform for phenolic quantification (≤ 3 % RSD) than GC, while noting GC's superior peak capacity
- Performed routine cGMP HPLC analyses, validating the identity and purity of pharmaceutical raw materials and finished drugs against USP specifications, averaged 15 samples per day **(July 2019 – July 2020)**
- LC-MS-based metabolic profiling for diabetes diagnosis, monitoring and treatment **(Jan – Dec 2018)**
 - Quantified 20+ human TCA-cycle phosphometabolites and organic acids via targeted tandem mass spectrometry on a Thermo triple-quadrupole LC-MS (ESI), enabling sub- μ M-level detection
 - Identified and quantified TCA cycle metabolites in bovine cell lysates by nano-electrospray ionization (nano-ESI), using a Thermo LC-MS equipped with orbitrap mass analyzer
 - Outcome:** Developed a highly sensitive LC-MS assay with affinity-chromatography enrichment that detected 5 phosphometabolites previously below the limit of detection in cell lysates
- UV-Vis spectroscopy-based protein assay & method development for albumin recovery **(Jan - Dec 2017)**
 - Outcome:** Developed an SOP to isolate medical-grade albumin from canine plasma with 91% purity and 77% yield, supplying life-saving resuscitation fluid for wounded military dogs
- Mass spectrometric (MS) signal enhancement of amino acids using MALDI-TOF MS to increase assay sensitivity for newborn amino acid screening **(Aug - Dec 2016)**

Outcome: Reduced matrix interference in Shimadzu Axima Resonance MALDI-MS spectra of derivatized amino acids and enhanced crystallization by optimizing solvent-to-derivatization-agent ratios

GC-MS EXPERIENCE

- Method development for extraction and analysis of phenolic compounds from biomass (Jan 2021 - Dec 2024)
- Established and validated a retention index for 25 phenolic monomers and dimers that eliminated the need for mass spectrometric confirmation and reduce GC misidentifications to virtually zero
- Transferred a phenolic-analysis method from a Shimadzu GC-MS to an Agilent GC-MS equipped with a column of different dimensions
- Outcomes:** - Developed an SOP for extraction and analysis of 12 therapeutic compounds from biomass
 - Identified, quantified, and characterized 100+ secondary plant metabolites using untargeted and targeted approaches on both Agilent and Shimadzu GC-MS platforms
 - The transferred GC-MS method provided comparable separation efficiency, quantification, sensitivity, and robustness, without compromising the runtime

CE EXPERIENCE

- Developed a frontal analysis CE method to study the interactions between cyclodextrins and phenolic compounds for cost-effective sorbent selection for recovery of therapeutic phenolic compounds (Jan 2024 – April 2024)
- Outcome:** Developed a high-throughput CE method (7-minute runs, minimal sample preparation) that delivered reproducible quantitation (<3% RSD) and an alternative to HPLC testing, saving \$5500+ in column costs

SOFTWARE SKILLS

- Xcalibur, Chromeleon, Tunemaster (Thermo) • LCMS, GCMS Solutions (Shimadzu) • Empower (Waters)
- MassHunter, ChemStation (Agilent) • 32 Karat (Beckman Coulter CE) • Prism-GraphPad • MS Office

AWARDS

- Max Steckler Fellowship for Outstanding Oral Qualifying Exam Performance (2023), Charles H.H. Griffith Outstanding General Chemistry Teaching Assistant Award (2022), ACVECC Research Grant Award (2017)

PEER-REVIEWED PUBLICATION and PRESENTATIONS

- Thomas H. Edwards, Amie Koenig, LeNae Thomas, **Anjam Sadik**, James L. Edwards. "Purification of Canine Albumin by Heat Denaturation in a Plasma Bag". *J. Vet. Em. Crit. Care*, **2020**, 30, 3, 264-271
- **Sadik, A.** and Bert Lynn. "Lignin-derived Value-added Chemicals for Sustainable Biorefineries". The 75th Southeastern Regional Meeting of the American Chemical Society. Atlanta, GA.....2024
- **Sadik, A.** and Bert Lynn. "Toward the Recovery of Value-added Lignans from Biomass". 1st Gordon Research Symposium on Lignin. Stonehill College, MA.....2024
- **Sadik, A.** and Bert Lynn. "Continuous Frontal Analysis Capillary Electrophoresis to Study Lignan-Cyclodextrin Interaction". 49th Annual Naff Symposium. University of Kentucky, KY.....2024
- Edwards TH, Koenig A., Thomas, L., **Sadik, A.** and James Edwards. "Preparation of Purified Canine Albumin by Heat Denaturation of Stored Plasma". International Veterinary Emergency and Critical Care Symposium. Nashville, TN. Presented by co-author.....2017

PROJECT MANAGEMENT EXPERIENCE

- Independently outlined a study framework and coordinated cross-lab collaboration that generated a manuscript titled "Identification and Quantification of Lignin-derived Secondary Metabolites in Ground Hurd Tissue of *Cannabis sativa* L. (hemp) Cultivars".....Aug 2024 - Present
- Spearheaded training of graduate students from 3 labs on GC-MS operation and biomass-treatment protocols, reducing inter-lab inconsistencies by 100%.....Nov – Dec 2024
- Led the training of incoming teaching assistants (TA) and revised college-level general chemistry lab experiments by streamlining procedures, enhancing safety, and improving organization, enabling efficient and safer student experience, while cutting TA training time by 60%.....Aug – Dec 2022

WORK AUTHORIZATION: Authorized to work immediately after graduation without employer-sponsorship (EAD in hand)