

EDUCATION

Ph. D. • 2005

Department of Chemistry, University of South Florida (USF), Tampa, FL, USA **Dissertation Title**: *Polytetrahydroforun and Dendrimer Based Novel Sol-Gel Coatings for Capillary Microextraction (CME) Providing Parts per Trillion (ppt) and Parts per Quadrillion (ppq) Level Detection Limits in Conjunction with Gas Chromatography and Flame Ionization Detection (FID).* Advisor: **Professor Abdul Malik, Ph. D.**

Post Graduate Diploma in Industrial Management • 1992

Department of Industrial Management, Bangladesh Management Development Center, Dhanmondi, Dhaka, Bangladesh.

M. Sc. • 1991

Department of Applied Chemistry and Chemical Engineering, University of Dhaka, Nilkhet Road, Dhaka, Bangladesh.

AREA OF EXPERTISE AND RESEARCH INTERESTS

- Analytical Chemistry
- Sample Preparation
- Environmental Chemistry
- Materials Chemistry
- Corrosion Protection
- Bioanalytical Chemistry
- Chemometrics
- Forensic Chemistry
- Pollution Remediation
- Advanced Material Design
- Separation Science
- Sol-Gel Synthesis
- Nanotechnology
- Metabolomics
- Energy Storage

MAJOR ACCOMPLISHMENTS

- **15** Approved US Patents
- 4 ~10 New Inventions In-Progress
- ~17 Review Articles
- ~120 Conference Presentations
- **10** new invention disclosures
- Fabric Phase Sorptive Extraction has been accepted as a premier analytical/ bioanalytical sample preparation technique
- Invented novel LC stationary phase that can be heated to 300°C. This invention will shape up the future of high temperature liquid chromatography (HTLC) with water as the only mobile phase
- 6 Pending US Patents
- ~90 Peer Reviewed Research Articles
- ~16 Book Chapters
- ~30 International Research Collaborators
- Invented Molecular Imprinting Technology capable of imprinting any template or group of templates
- Successfully combined solid phase extraction and solid phase microextraction into a single sample preparation platform
- Invented a new biofluid sampler that allows analysis of whole blood, urine, saliva, cerebral spinal fluid with minimal sample preparation

ACADEMIC AND INDUSTRIAL EXPERIENCE

FULL TIME APPOINTMENTS:

Institution	Rank	Field	Dates
Florida International University, Miami, Florida, USA	Research Associate Professor	Chemistry	September 2020- Present
Florida International University, Miami, Florida, USA	Research Assistant Professor	Forensic Chemistry	Aug 2013 – Present
Florida International University, Miami, Florida, USA	Visiting Postdoctoral Fellow	Forensic Chemistry	Aug 2010 – Aug 2013
Moffitt Cancer Research Center, Tampa, Florida, USA	Postdoctoral Fellow	Molecular Chemistry	May 2009 – May 2010
Bausch & Lomb, Tampa, Florida, USA	Senior Research Scientist	Research and Development	June 2008-May 2009
Belcher Pharmaceuticals, Largo, Florida, USA	Senior Analytical Chemist	Research and Development	May 2007-May 2008
Phillip Morris USA, Richmond, Virginia, USA	Postdoctoral Fellow	Bioanalytical Chemistry	May 2005 – Apr 2007
University of South Florida, Tampa, Florida, USA	Ph. D. Student	Analytical Chemistry	Jan 2000 – May 2005
University of North Carolina – Greensboro, Greensboro, North Carolina, USA	Graduate Student	Analytical Chemistry	Aug 1999 – Dec 1999
University of Dhaka, Dhaka, Bangladesh	Assistant Professor	Applied Chemistry	Apr 1996 – Aug 1999
University of Dhaka, Dhaka, Bangladesh	Lecturer	Applied Chemistry	Oct 1993 – Mar 1996

PART TIME APPOINTMENTS:

Institution	Rank	Department	Dates
Florida International University, Miami, Florida, USA	Adjunct Faculty	Chemistry and Biochemistry	Aug 2010 - Present
Nova Southeastern University, Fort Lauderdale, Florida, USA	Adjunct Faculty	Physics and Chemistry	2013 – 2019
Miami Dade College, Miami, Florida, USA	Adjunct Faculty	Chemistry, Physics, and Earth Sciences	2013 – 2014
Broward College, Fort Lauderdale, Florida, USA	Adjunct Faculty	Science and Wellness	2012 - 2017
University of South Florida, Tampa, Florida, USA	Graduate Teaching Assistant	Chemistry	Jan 2000 – May 2005

INVENTIONS

1. Facile Synthesis of Mesoporous Silica Particles and Its Application in Reversed Phase, Normal Phase, Ion-exchanging, Mixed Mode and Polymeric Liquid Chromatographic Stationary Phases and Solid Phase Extraction Sorbents (United States Patent Application in progress)

This invention describes a facile synthesis of mesoporous silica particles using both acidic (hydrolysis) and basic catalyst (polycondensation). As the acid catalysis inherently favors hydrolysis, and the base catalysis favors polycondensation, the resulting silica matrix possesses substantially

improved chemical, mechanical, and thermal stability compared to its counterpart obtained by either only acid catalysis or base catalysis. Higher surface area (~700 m²/g), larger pore width (~80Å), and increased pore volume (~1.12 cm³/g) have made this mesoporous silica as an ideal support for controlled drug delivery/catalysis/reversed and/or normal phase liquid chromatographic stationary phases. As a proof of concept, the sol-gel mesoporous silica synthesized under current protocol has been applied to create a large number of reversed phase, normal phase, mixed mode and polymeric liquid chromatographic stationary phases/solid phase extraction sorbents. All of the new stationary phases/solid phase sorbents outperformed their commercial counterparts in terms of chromatographic/sorptive properties.

2. Sol-gel Primary Secondary Amine (sol-gel PSA) and its Encapsulation with Graphitized Carbon Black (GCB)/ Activated Carbon (AC)/ Multi Walled Carbon Nanotube (MWCNT)/ Graphene/ C₁₈ (United States Patent Application in progress)

This invention entails creation of a series of high performance sorbents including sol-gel PSA; sol-gel PSA/C₁₈; sol-gel PSA and its different composites efficiently remove fatty acids, organic acids, polar pigments, and sugar when conducting multi-residue pesticides and other persistent/ emerging pollutants in food and other complex sample matrices. Sol-gel PSA and the composite sorbents significantly reduce matrix-enhancement effects encountered during the GC analysis of food products. Compared to commercially available PSA sorbents, sol-gel PSA and different composites provide higher nitrogen and carbon loading; incorporate PSA with carbonaceous particles (GCB/AC/ Graphene/C₁₈/MWCNT) during the facile synthesis process; provides very high pH stability (1-12); higher matrix cleaning capacity, among others.

3. Particle Encapsulated Sol-gel Extraction Sorbents and Chromatographic Stationary Phases

US Patent No. 10,183,270.

This invention uniquely combines different high surface area particulate materials into sol-gel functional matrix in order to enhance extraction and separation efficiency of the composite materials. The encapsulated carbonaceous and non-carbonaceous particles possess distinctive material properties favorable to analyte extraction and separation and are trapped into the cage-like structure of sol-gel 3D network. The encapsulation prevents particulates from agglomeration and therefore maximize the utilization of high surface area of the particulate materials for analytes adsorption. Sol-gel functional matrix not only provides efficient entrapment of these particulate matters, but also allows facile functionalization by different sol-gel precursors. These high efficiency sorbent systems can be used in many existing and emerging fields including domestic/industrial water filtration systems, sewerage treatment plants, environmental pollution remediation, solid phase extraction, preparative and analytical liquid chromatography.

4. In-Vial Microextraction (IVME), United States Patent No. 9,851, 281

This invention dramatically streamlines analytical sample preparation by combining sampling and sample preparation together using a sampling vial that possess sol-gel sorbent coating on the inner walls of the vial. The device has been created using borosilicate glass vials, inner walls of which are coated sol-gel hybrid inorganic-organic sorbent coating that serves as the extraction sorbent. When aqueous solution containing the target analyte(s) is placed inside the sol-gel sorbent coated vial, extraction begins. At the end of the extraction process, aqueous sample is discarded from the vial and a small volume of organic solvent is introduced for solvent back-extraction. Alternately, the sample vial can be exposed to high temperature in a thermal desorption unit (TDU) with continuous carrier gas flow so that thermally desorbed analyte(s) can enter into the gas chromatographic inlet for separation and subsequent detection.

5. Super Polar Chromatographic Stationary Phases and Extraction Sorbents, United States Patent No. 9,700,872

This invention represents the most polar extraction sorbents ever created synthetically. Many highly polar natural and synthetic polar molecules such as sucrose, sucralose, and sorbitol have been chemically incorporated into sol-gel hybrid inorganic-organic network, resulting in super polar extraction sorbents. This invention would particularly benefit metabolomics research where selective extraction of highly polar metabolites or disease biomarkers from biological fluids (whole blood, urine, saliva) are of great importance.

6. Generic Formulation for Molecularly Imprinted Polymer, United States Patent No. 9,772,338

This invention simplifies the process of creating molecularly imprinted polymer using a real or dummy template. The technology is based on a molecular structure driven formulation calculator that enables designing the sol solution composition based on the molecular structure of the template molecule. The generic formulation of the sol solution based on the molecular structure of the template for creating molecularly imprinted polymer opens up new possibilities in pharmaceutical purification where selective isolation of the active ingredient from impurities and byproducts is still one of the major hurdle in the active pharmaceutical ingredient (API) manufacturing process. In addition, the new technology will benefit highly selective isolation of pharmacologically active biomolecules from plant extracts, leading to their usage in pharmaceutical and nutraceutical products.

7. Microextraction Capsules (MEC), United States Patent No. 10,352,833

A new generation sample preparation device built by encapsulating sol-gel sorbent inside a tubular porous polypropylene membrane to protect the sorbent material from particulates, debris and other matrix interferents while allowing analytes to rapidly interact with the sorbent. This invention addresses most of the shortcomings of stir bar sorptive extraction (SBSE), a popular and commercially available microextraction technique. This green sample preparation technique totally eliminates the necessity of filtration and/or centrifugation of messy samples prior to extraction and allows extraction directly from aqueous samples containing high amount of matrix interferents. Back-extraction using a small volume of organic solvent also eliminates the requirement of solvent evaporation and sample reconstitution often used in solid phase extraction.

8. Fabric Phase Sorptive Extraction (FPSE), United States Patent No. 9,557,252; 9,283,544

A new generation sample preparation technique capable of sampling and sample preconcentration directly from original environmental, biological, pharmaceutical, and food samples. The extracted analytes can be introduced directly into the GC/LC/CE/ICP-MS. High analyte preconcentration factor eliminates the necessity of solvent evaporation and sample reconstitution step, often used in solid phase extraction. FPSE has been studied as Ph.D. research projects in many research institutions including Florida International University, USA; University of Arizona, USA; Georgetown University, USA; Columbia University; University of Santiago de Compostela, Spain; Aristotle University, Greece, University of Rovira i Virgili, Spain; University of Las Palmas de Gran Canaria, Spain; Punjabi University, Patiala, India.

9. Dynamic Fabric Phase Sorptive Extraction (DFPSE), United States Patent No. 9,527, 059

Sol-gel sorbent coated SPE discs capable of simultaneously extracting nonpolar, polar, acidic, basic, neutral organic compounds as well as heavy metal ions from the same sample matrix for instrumental analysis in minutes. It requires very small amount of organic solvent for elution of the extracted analyte. Chemically bonded sorbent to the flexible substrate surface permits using any organic solvent or solvents mixture to elute the extracted analyte. High analyte preconcentration factor achieved in DFPSE ensures easy detection of the analytes by the analytical instrument, and thus eliminate error prone and labor-intensive solvent evaporation and sample reconstitution step. Use of a solvent compatible with both gas phase separation and liquid phase separation allow injecting same sample in both GC/LC/CE for complete analytical information.

10. Field Sampling Kit for Chemical Recovery, Storage, and Profiling, United States Patent No. 9,527, 059

A novel sampling kit capable of collecting organic analytes and metal ions onto its surface, storing it for an extended period of time (more than a year) and chemical profiling whenever it is needed.

11. Sol-Gel Poly(ethylene glycol) Gas Chromatographic Column Technology, United States Patent No. 8,685, 240

This invention represents the first capillary GC column coated with sol-gel PEG polar stationary phase, thermally stable up to 320 °C (compared to ~260 °C for conventional PEG column).

12. Sol-Gel Dendrimer Gas Chromatographic Column Technology, United States Patent Application No. 20050106068.

Dendrimers are highly branched macromolecules possessing fixed molecular weight (compared to polymers, which are polydispersed possessing a range of molecular weight distribution). Use of dendrimers as the GC stationary phase may significantly reduce batch-to-batch reproducibility between columns and may offer numerous functional interaction sites to offer unique selectivity towards the target analytes.

13. Polytetrahydrofuran-Based Coating for Capillary Microextraction, United States Patent Application No. 20060013981

A sol-gel poly-THF coating was developed for high-performance capillary microextraction to facilitate simultaneous ultra-trace analysis of polar and nonpolar organic compounds. Parts per quadrillion level detection limits were achieved using Poly-THF coated microextraction capillaries in conjunction with GC-FID. Sol-gel Poly-THF coatings showed extraordinarily high sorption efficiency for both polar and nonpolar compounds, and proved to be highly effective in providing simultaneous extraction of nonpolar, moderately polar, and highly polar analytes from aqueous media. Sol-gel poly-THF coated microextraction capillaries showed excellent thermal and solvent stability, making them very suitable for hyphenation with both gas-phase and liquid-phase separation techniques, including GC, HPLC, and CEC. In CME-HPLC and CME-CEC hyphenations, sol-gel poly-THF coated microextraction capillaries have the potential to provide new levels of detection sensitivity in liquid-phase trace analysis, and to extend the analytical scope of CME to thermally labile-, high molecular weight-, and other types of compounds that are not amenable to GC.

Hirsch Index (h-index):	32 (According to Google Scholar)	
i10-index	65 (According to Google Scholar)	
Number of citations:	2836 (According to Google Scholar)	
Publications:	>130 publications including book chapters, review articles research articles and patent publications.	
Conference Proceedings:	>130 presented in national and international conferences	
Patents:	21 (15 issued; 6 pending)	
Google Scholar ID	https://scholar.google.com/citations?user=ovZ73-UAAAAJ&hl=en	
PubFacts ID	https://www.pubfacts.com/author/Abuzar+Kabir	
LinkedIn ID	https://www.linkedin.com/in/abuzar-kabir-0161027/	

RESEARCH ACCOMPLISHMENTS

HONORS AND AWARDS

- Separations 2019 Highly Cited Paper Awards for the article "Recent Trends in Microextraction Techniques Employed in Analytical and Bioanalytical Sample Preparation", 2020
- Separations 2019 Highly Cited Paper Awards for the article "Fabric Phase Sorptive Extraction Explained", 2020
- **Best Invention Productivity Award,** Florida International University, **2018**
- **Best Invention Productivity Award, Florida International University, 2017**
- **4** Tharp Summer Research Award, Department of Chemistry, University of South Florida, 2003

SERVICE AS JOURNAL EDITOR/ GUEST EDITOR/EDITORIAL BOARD MEMBER

- Guest Editor, Molecules (IF: 3.267), Special Issue on "Advances in Chemical Analysis Procedures (Part I): Extraction and Instrument Configuration", 2019 (<u>https://www.mdpi.com/journal/molecules/special issues/chemical analysis extraction instrumen</u> t configuration).
- Guest Editor, Molecules (IF: 3.267), Special Issue on "Advances in Chemical Analysis Procedures (Part II): Statistical and Chemometric Approaches", 2019 (<u>https://www.mdpi.com/journal/molecules/special_issues/chemical_analysis_statistical_chemomitr_ic_approaches</u>).
- Guest Editor, Molecules (IF: 3.267), Special Issue on "Innovative Extraction Techniques and Hyphenated Instrument Configuration for Complex Matrices Analysis II", 2020 (<u>https://www.mdpi.com/journal/molecules/special issues/extration complex matric analy</u>)
- Guest Editor, Molecules (IF: 3.267), Special Issue on "Forensic Practices and Innovations: Instrumental Analyses, Data Correlations, Legislative Comments, and Case Studies", 2020 (https://www.mdpi.com/journal/molecules/special_issues/Molecules_Forensic)
- Guest Editor, Molecules (IF: 3.267), Special Issue on "Analytical Methods for Toxics Determination ", 2020 (https://www.mdpi.com/journal/molecules/special issues/Analytical toxics Determination 2)
- Guest Editor, Separations (IF: 1.90), Special Issue on "Advances in Fabric Phase Sorptive Extraction", 2018 (<u>https://www.mdpi.com/journal/separations/special_issues/FPSE</u>).
- **Member, Scientific Committee, ITAC 2018,** International Trace Analysis Congress, Cumhuriyet University-Faculty of Pharmacy, Sivas, Turkey, June 20-23, **2018**.
- Member, Organizing Committee, International Conference on Analytical & Bioanalytical Techniques, Columbus, Ohio, October 31-November 1, 2018.
- Member, Organizing Committee, 18th International Conference on World HPLC & Separation Techniques, Toronto, Ontario, Canada, August 29-30, 2018.
- **Member, Organizing Committee**, 2nd World Conference on Analytical & Bioanalytical Chemistry, Las Vegas, USA, July 11-12, **2019.**
- Associate Editor, Reviews in Separation Sciences (<u>https://www.betasciencepress.com/index.php/for-authors/reviews-in-separation-sciences/editorial-board-reviews-in-separation-sciences</u>)
- Co-Editor-in-Chief, Advanced Journal of Chemistry-Section A (<u>http://www.ajchem-a.com/journal/editorial.board?edbc=6445</u>)

Member, Editorial Board:

- Advances in Applied Chemistry and Biochemistry
 (https://ocimumpublishers.com/journal/applied-chemistry-biochemistry/board-members/2)
- Peertechz Journal of Forensic Science and Technology (<u>https://www.peertechz.com/journals/peertechz-journal-of-forensic-science-and-technology/editorial-board</u>)
- Cancer Society and Oncology (<u>http://globalaccesspub.com/listofjournals/cancer_science_and_oncology</u>)
- Trends in Pharmaceutical and Biomedical Analysis (<u>http://www.oatext.com/Trends-in-Pharmaceutical-and-Biomedical-Analysis-TPBA.php#About_Journal</u>)
- Scholar Journal of Food and Drug Research (<u>http://www.srojonline.org/food-drug-research/editorial-board.php</u>)
- Forensic Sciences: Methods and Techniques
 (https://ocimumpublishers.com/journal/forensic-sciences/board-members)
- Trends in Pharmaceuticals and Biomedical Analysis (TPBA) (<u>http://www.oatext.com/Trends-in-Pharmaceutical-and-Biomedical-Analysis-TPBA.php#Editorial_Board</u>)
- Trends in Research (TR) (<u>http://www.oatext.com/Trends-in-Research-TR.php#Editorial_Board</u>)
- Reviews in Separation Sciences (<u>https://betasciencepress.com/index.php/for-authors/reviews-in-separation-sciences/editorial-board-reviews-in-separation-sciences</u>)

SERVICE AS BOOK EDITOR

- 1. A. Kabir, M. Locatelli, Eds. "Fabric Phase Sorptive Extraction: Principles, Applications and Potentials", Elsevier Science, 2021 (in progress).
- 2. M. Locatelli, A. Tartaglia, D. Melucci, A. Kabir, H.I. Ulusoy, V. Samanidou, Eds. "Advances in Chemical Analysis Procedures (Part I): Extraction and Instrument Configuration, Printed Edition of the Special Issue Published in *Molecules*, MDPI, 2020.
- M. Locatelli, A. Tartaglia, D. Melucci, A. Kabir, H.I. Ulusoy, V. Samanidou, Eds. "Advances in Chemical Analysis Procedures (Part II), Printed Edition of the Special Issue Published in *Molecules*, MDPI, 2020.

PATENTS

- 20. A. Kabir, K. G. Furton, "Sol-gel Primary Secondary Amine (Sol-gel PSA) sorbents and their composites, US Patent Application (in progress)
- **19. A. Kabir,** K.G. Furton, "Materials and Methods for Extracting Metals", **United States Patent Application No. US 17/483,961** (September 24, 2021), **2021.**
- **18. A. Kabir**, K.G. Furton, "Mesoporous Silica and Stationary Phases and Solid Phase Sorbents Therefrom" **US Patent Application No. US 16,252,829 (January 21, 2019).**

- 17. A. Kabir, K.G. Furton, "Sol-Gel Polymeric Stationary Phases for High-Performance Liquid Chromatography and Solid Phase Extraction: Their Method of Making", United States Patent No. 10,335,767 (July 2, 2019).
- A. Kabir, K.G. Furton, "Microcrystalline Cellulose Particle Supported Sol-gel Sorbents and Methods of Manufacturing the Same", United States Patent No. US 11,135,567 (October 5, 2021).
- 15. K. G. Furton, M. Cerreta, A. Kabir, "Polymer-based Training Aids and Methods of Use", United States Patent No. 11,129,363 (September 28, 2021).
- 14. A. Kabir, K.G. Furton, "Materials and methods for the detection of trace amounts of substances in biological and environmental samples", United States Patent No. 10,768,157 (September 8, 2020).
- 13. A. Kabir, K.G. Furton, "Microextraction Capsules and Methods of Making", United States Patent No. 10,352,833 (July 16, 2019).
- 12. A. Kabir, K.G. Furton, "Encapsulated Particulate Matters in a Sol-gel Silica Matrix and Method of Preparation", US Patent No. 10,183,270 (January 22, 2019).
- A. Kabir, K.G. Furton, "Sol-Gel Polymeric Stationary Phases for High-Performance Liquid Chromatography and Solid Phase Extraction: Their Method of Making", United States Patent No. 9,925,518 (March 27, 2018).
- A. Kabir, K.G. Furton, "Alkyl Functionalized Porous Silica Liquid Chromatographic Stationary Phases and Solid Phase Extraction Sorbents", United States Patent No. 9,925,515 (March 27, 2018).
- A. Kabir, K.G. Furton, "Materials and Methods for the Detection of Trace Amounts of Substances in Biological and Environmental Samples", United States Patent No. 9,772,338 (September 26, 2017).
- A. Kabir, K.G. Furton, "Superpolar Chromatographic Stationary Phases and Extraction Sorbents and Their Methods of Synthesis", United States Patent No. 9,700,872 (July 11, 2017).
- 7. A. Kabir, K.G. Furton, "Fabric Phase Sorptive Extractors", United States Patent No. 9,557,252 (January 31, 2017).
- 6. A. Kabir, K.G. Furton, "In-Vial Microextraction (IVME) Systems and Their Method of Making", United States Patent No. 9,851,281 (December 26, 2017).
- 5. A. Kabir, K.G. Furton, "Field Sampling Kit for Chemical Recovery, Storage, and Profiling, Method of Making and Using the Kit, and a Dynamic Fabric Phase Sorptive Extraction (DFPSE) Media", United States Patent No. 9,527,059 (December 27, 2016).
- 4. A. Kabir, K.G. Furton, "Fabric Phase Sorptive Extractors", United States Patent No. 9,283,544 (March. 15, 2016).
- 3. Malik, A. Kabir, C. Shende, "High Efficiency Sol-Gel Gas Chromatography Column", United States Patent No. 8,685,240 (April 1, 2014).
- 2. A. Malik, A. Kabir, "Polytetrahydrofuran-based Coating for Capillary Microextraction", United States Patent Application No. 20060013981 (filed on January 19, 2006).
- A. Malik, A. Kabir, G.R. Newkome, K.S. Yoo, "Sol-Gel Dendron Separation and Extraction Capillary Column", United States Patent Application No. 20050106068 (filed on May 19, 2005).

PEER-REVIEWED PUBLICATIONS

BOOK CHAPTERS:

- **18.** D. Bitas, V. Samanidou, **A. Kabir**, R. Lucena, S. Cardenas, "**Membrane Sorptive Phases**", in: Analytical Sample Preparation with Nano- and Other High-Performance Materials, Edited by Soledad Cardenas and Rafel Lucena, Elsevier, **2021**.
- 14. N. Manousi, A. Kabir, G. Zachariadis, "Fabric Phase Sorptive Extraction in Analytical Toxicology", in: *Microextraction Techniques in Analytical Toxicology*, Edited by Rajeev Jain and Ritu Singh, CRC Press, 2020.
- **15. A. Kabir, "Microextraction methods in analytical toxicology: An overview**", in: *Microextraction Techniques in Analytical Toxicology,* Edited by Rajeev Jain and Ritu Singh, CRC Press, **2020**.
- **15. A. Kabir**, "**Current standing of therapies: treatment limitations**" in: *Phytomedicines in the treatment of diabetes*, Edited by Haroon Khan and Mohammad Ajmal Shah, Springer Nature, **2020**.
- 14. A. Kabir, "Phytomedicines and multi-drug targets in diabetes", in: *Phytomedicines in the treatment of diabetes*, Edited by Haroon Khan and Mohammad Ajmal Shah, Springer Nature, 2020.
- **13. A. Kabir**, "Antidiabetic potential of naphthoquinones", in: *Phytomedicines in the treatment of diabetes*, Edited by Haroon Khan and Mohammad Ajmal Shah, Springer Nature, **2020**.
- A. Kabir, "Therapeutic potential of phytonutrients: an overview", in: *Phytomedicines in treatment of diabetes*, Edited by Haroon Khan and Mohammad Ajmal Shah, Springer Nature, 2020.
- **11. A. Kabir,** K. G. Furton, "Application of Gas Chromatography in Forensic Science", In: *Chromatography, 2nd Edition, Edited by* Colin Poole, Elsevier, Amsterdam, **2020**.
- A. Kabir, K.G. Furton, "Forensic Sampling and Sample Preparation", In: Forensic Chemical sensing and Detection, 1st Edition, Edited by T.R.L.C. Paixão and W.K.T. Colrto, The Royal Society of Chemistry, London, UK, 2019.
- A. Kabir, K.G. Furton, "Fabric Phase Sorptive Extraction", In: Handbooks of Separation Science Series, Extraction: Solid-Phase Extraction, Edited by C. Poole, Elsevier, Amsterdam, 2019.
- 8. A. Kabir, M. Locatelli, "Analysis of Protein, Peptides and Amino acids", In: *Recent Advances in Natural Product Analysis*, Chapter 23, Edited by S. M. Nabavi, A. Silva, M. Saeedi, and S.F. Nabavi, Elsevier, Amsterdam, 2020.
- A. Kabir, A. Mocan, S. Piccolantonio, E. Sperandio, H.I. Ulusoy, M. Locatelli, "Analysis of Amines", In: *Recent Advances in Natural Product Analysis*, Chapter 16, Edited by S. M. Nabavi, A. Silva, M. Saeedi, and S.F. Nabavi, Elsevier, Amsterdam, 2020.
- A. Kabir, F. Cacciagrando, M. Lipsi, H.I. Ulusoy, M. Locatelli, "Analysis of Monoterpenes and Monoterpenoids", In: *Recent Advances in Natural Product Analysis*, Chapter 7, Edited by S. M. Nabavi, A. Silva, M. Saeedi, and S.F. Nabavi, Elsevier, Amsterdam, 2020.
- 5. A. Kabir, A. Mocan, M. Santoleri, M.D. Simone, F. Cacciagrano, H.I. Ulusoy, M. Locatelli, "Analysis of Monophenols", In: *Recent Advances in Natural Product Analysis*, Chapter 2, Edited by S. M. Nabavi, A. Silva, M. Saeedi, and S.F. Nabavi, Elsevier, Amsterdam, **2020**.
- 4. A. Kabir, K.G. Furton, "Sample Preparation in Food Analysis: Practices, Problems and Future Outlook", In: Analytical Chemistry: Developments, Applications and Challenges in Food Analysis (ISBN: 978153612282), Edited by Marcello Locatelli, Nova Science Publishers, Inc., Hauppauge, New York, USA, 2017.
- 3. A. Kabir, K.G. Furton, "Novel Sol-Gel Sorbents in Sorptive Microextraction", In: Analytical Microextraction Techniques, Edited by M. Valcarcel, M. Cardenas, R. Lucena, Bentham Science Publishers, Sharjah, UAE, 2016.

- 2. A. Kabir, K. G. Furton, "Application of Gas Chromatography in Forensic Science", In: Gas Chromatography (ISBN: 0123855403), Edited by Colin Poole, Elsevier, Amsterdam, 2012.
- 1. A. Kabir, H. Holness, J. Almirall, K. G. Furton, "Sampling and Sample Preparation for Forensic Chemical Analysis", In: *Comprehensive Sampling and Sample Preparation: Analytical Techniques for Scientists (ISBN: 0123813735)*, Edited by J. Pawliszyn, Elsevier, Amsterdam, 2012.

REVIEW ARTICLES:

- 14. N. Manousi, A. Kabir, G.A. Zachariadis, "Recent Advances in the extraction of triazine herbicides from water samples", Journal of Separation Science, 2021, I.F. 2.516.
- **13.** N. Manousi, **A. Kabir**, G.A. Zachariadis, "Green Bioanalytical Sample Preparation: Fabric Phase Sorptive Extraction", Bioanalysis, **2021**, I.F. **2.673**.

12. G.M. Merone, A. Tartaglia, E. Rosato, C. D'Ovidio, **A. Kabir**, H.I. Ulusoy, F. Savini, M. Locatelli, **"Ionic Liquids in Analytical Chemistry: Applications and Recent Trends**", Current Analytical Chemistry, **2021, I.F. 1.365.**

- 11. A. Kabir, V. Samanidou, "Fabric Phase Sorptive Extraction: A Paradigm Shift Approach in Analytical and Bioanalytical Sample Preparation", Molecules, 2021, 26(4), 865 (https://doi.org/10.3390/molecules26040865), I.F. 3.267.
- M. Locatelli, A. Tartaglia, S. Piccolantonio, L. A. Di Lorio, E. Sperandio, H. I. Ulusoy, K. G Furton, A. Kabir, "Innovative Configurations of Sample Preparation Techniques Applied in Bioanalytical Chemistry: A Review", Current Analytical Chemistry, 2019, 15(7), 744 (https://doi.org/10.2174/1573411015666190301145042).
- M. Locatelli, A. Tartaglia, S. Piccolantonio, E. Sperandio, H.I. Ulusoy, K.G. Furton, A. Kabir, "Advances in Innovative Sample Preparation Configurations Applied to Bioanalytical Chemistry: A Critical Review", Current Analytical Chemistry, 2019, 15(3) 313-320 (https://doi.org/10.2174/1573411014666180502105225), I.F. 1.365.
- 8. **A. Kabir**, M. Locatelli, H.I. Ulusoy, K.G. Furton, "Recent Advances in Sorbent Based On-Line Sample Preparation Techniques Hyphenated to Liquid Chromatography", Current Analytical Chemistry, 2019, I.F. 1.365.

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- 116. M. Locatelli, K.G. Furton, A. Tartaglia, E. Sperandio, H.I. Ulusoy, **A. Kabir**, "*Simultaneous determination of solar UV filters in three biological fluids by FPSE-HPLC-PDA method*" Euroanalysis 2019, Istanbul, Turkey, September 1-5, **2019**.
- 115. A. Kabir, M. Locatelli, K.G. Furton, H.I. Ulusoy, A. Tartaglia, V. Samanidou, "*Capsule Phase Microextraction: a field deployable complete sample preparation solution for modern high throughput analytical laboratories*", Euroanalysis 2019, Istanbul, Turkey, September 1-5, 2019.
- 114. M. Locatelli, A. Tartaglia, K.G. Furton, F. Maroni, P. Bruni, F. Croce, H.I. Ulusoy, V. Samanidou, A. Kabir, "*Comparison between exhaustive and equilibrium extraction: SPE and FPSE media*", Euroanalysis 2019, Istanbul, Turkey, September 1-5, 2019.
- 113. S. Gulle, H.I. Ulusoy, A. Kabir, M. Locatelli, K.G. Furton, "*Development of analytical method for determination of parabens at trace levels in cosmetic samples*", Euroanalysis 2019, Istanbul, Turkey, September 1-5, **2019**.
- 112. B. Surucu, H.I. Ulusoy, A.G. Canli, M. Locatelli, **A. Kabir**, "*Development of analytical method for sensitive determination of antibiotic residues in milk samples*", Euroanalysis 2019, Istanbul, Turkey, September 1-5, **2019**.
- 111. A.G. Canli, H.I. Ulusoy, B. Surucu, E. Yilmaz, A. Kabir, M. Locatelli, "*Decanoic acid functionalized magnetic particles for sensitive determination of Propoxur and Fenitrothionin residues in environmental samples*", Euroanalysis 2019, Istanbul, Turkey, September 1-5, 2019.
- 110. A. Tartaglia, M. Locatelli, K.G. Furton, E. Sperandio, S. Ulusoy, H.I. Ulusoy, A. Kabir, "FPSE-HPLC-PDA method for rapid determination of solar UV filters in human whole blood, plasma and urine", HPLC 2019 48th International Symposium on High Performance Liquid Phase separations and Related Techniques, Milan, Italy, June 16-20, 2019.
- 109. N. Kalogiouri, A. Tsalbouris, A. Kabir, K.G. Furton, S. Victoria, "Application of molecular imprinted polymers (MIPs) as extracting media for the chromatographic determination

of industrial chemicals: a case study of bisphenol A", International Conference on Chemistry and the Environment 2019 (ICCE 2019), Thessaloniki, Greece, June 16-20, 2019.

108. **A. Kabir**, "*Fabric phase sorptive extraction: a total sample preparation solution to serve high throughput modern analytical laboratories*", International Conference on Chemistry and the Environment 2019 (ICCE 2019), Thessaloniki, Greece, June 16-20, **2019**.

107. A. Kabir, "Fabric phase sorptive extraction: a paradigm shift sample preparation strategy for pharmacokinetics, pharmacodynamics, toxicokinetics, and therapeutic drug monitoring studies directly from whole blood", International Conference on Chemistry and the Environment 2019 (ICCE 2019), Thessaloniki, Greece, June 16-20, **2019**.

- 106. A. Kabir, M. Locatelli, K.G. Furton, A. Tartaglia, H. Ulusoy, "Capsule phase microextraction: a field deployable complete sample preparation solution for modern high throughput analytical laboratories", Euroanalysis 2019, Istanbul, Turkey, September 1-5, 2019.
- 105. A. Kabir, M. Locatelli, K.G. Furton, H. Ulusoy, A. Tartaglia, "Fabric phase sorptive extraction: novel sample preparation strategy for pharmacokinetics, pharmacodynamics, toxicokinetics, and therapeutic drug monitoring studies directly from whole blood", Euroanalysis 2019, Istanbul, Turkey, September 1-5, 2019.
- 104. M. Locatelli, A. Tartaglia, K.G. Furton, F. Maroni, P. Bruni, F. Croce, H. I. Ulusoy, V. Samanidou, A. Kabir, "*Comparison between exhaustive and equilibrium extraction: SPE and FPSE media*", Euroanalysis 2019, Istanbul, Turkey, September 1-5, 2019.
- 103. M. Locatelli, K.G. Furton, A. Tartaglia, E. Sperandio, H. I. Ulusoy, A. Kabir, "Simultaneous determination of solar UV filters in three biological fluids by FPSE-HPLC-PDA method", Euroanalysis 2019, Istanbul, Turkey, September 1-5, 2019.
- 102. A. Kabir, "Encapsulation of High Surface Area Carbonaceous Particles into Sol-gel Matrix: A New Generation Adsorbents for Environmental Pollution Mitigation", Invited Talk, 27th Assembly of European Advanced Materials Congress, Stockholm, Sweden, August 11-14, **2019**.

101. A. Kabir, "Fabric Phase Sorptive Extraction: A green sample preparation technique for pharmacokinetics, pharmacodynamics, toxicokinetics, and therapeutic drug monitoring studies directly from whole blood, 28th International Conference on Chemistry and Drug Designing", Vancouver, Canada, December 5-6, 2018.

100. K. Koseoglu, H.I. Ulusoy, M. Locatelli, **A. Kabir**, S. Gulle, S. Ulusoy, "*Trace Determination of Pirimicarb and Fenitrothionin in Water Samples by HPLC-DAD System*", 18Th International Participation Chromatography Congress, Istanbul, Turkey, November 15-18, **2018**.

99. A. Kabir, "Fabric Phase Sorptive Extraction: A Versatile Sample Preparation Technique to Meet the Demands of Twenty First Century Modern Analytical Laboratories", Invited Keynote Lecture, International Conference on Analytical and Bioanalytical techniques, Columbus, Ohio, USA, October 31-November 1, 2018.

98. A. Kabir, *"Fabric Phase Sorptive Extraction (FPSE): A Paradigm Shift Sample Preparation Approach for Whole Blood Analysis Targeted to Metabolomics Disease Biomarker Discovery*", Invited Keynote Lecture, 13th International Conference on Metabolomics and System Biology, Zurich, Switzerland, October 11-12, 2018.

- 97. H.I. Ulusoy, S. Gulle, M. Locatelli, A. Kabir, S. Ulusoy, "Development of Fast and Cheap Analytical Methodology for Trace Determination of Methyl, Propyl, and Butyl Paraben", Poster Presentation in 11th Aegean Analytical Chemistry Days International Conference (AACD 2018), September 25-29, **2018**, Chania, Crete, Greece.
- 96. A. Kabir, K.G. Furton, A Tartaglia, S. Piccolantonio, E. Sperandio, F. Cacciagrano, N. Tinari, L. Grossi, M. Locatelli, "FPSE-HPLC-PDA Method for the Determination of Inflammatory Bowel Disease Treatment Drugs in Whole Blood, Plasma and Urine",

Poster Presentation in the XXVII Congress of The Analytical Chemistry Division, Bologna, Italy, September 16-20, **2018**.

- 95. A. Kabir, K.G. Furton, "Capsule Phase Microextraction: A Field Deployable Sample Preparation Technique with Integrated Filtration and Stirring Mechanism for Rapid Environmental Pollution Monitoring", Invited Keynote Lecture, 18th International Conference on Pure & Applied Chemistry, Toronto, Ontario, Canada, August 31- September 1, 2018.
- 94. A. Kabir, K.G. Furton, "Fabric Phase Sorptive Extraction (FPSE): A Novel Strategy in Metabolomics Sample Preparation for Disease Biomarker Discovery", Invited Keynote Lecture, 18th International Conference on World HPLC & Separation Techniques, Toronto, Ontario, Canada, August 29-30, 2018.
- 93. A. Kabir, K.G. Furton, "Fabric Phase Sorptive Extraction: A Versatile Sample Preparation Technology that Meets the Demands of Twenty First Century Modern Analytical Laboratories", Invited Keynote Lecture, 18th World Analytical Chemistry & Mass Spectrometry Conference, Toronto, Ontario, Canada, August 29-30, 2018.
- 92. A. Kabir, "High Performance Sol-gel Composite Materials with Encapsulated Carbonaceous Particles for Environmental Pollution Mitigation", Invited Lecture, 30th International Conference on Materials Chemistry & Science, Toronto, Ontario, Canada, August 27-28, 2018.
- 91. A. Kabir, M. Locatelli, H.I. Ulusoy, K. G. Furton, "Whole Blood Analysis Using Fabric Phase Sorptive Extraction (FPSE): A New Strategy in Metabolomics Sample Preparation for Disease Biomarker Discovery", Invited Lecture, iTAC 2018, 5th International Trace Analysis Congress. 23, 2018.
- 90. A. Kabir, M. Locatelli, H.I. Ulusoy, K. G. Furton, "Significance of Sol-gel Materials in Chromatographic Separation and Analytical/Bioanalytical Sample Preparation", Poster presentation, iTAC 2018, 5th International Trace Analysis Congress. Cumhuriyet University-Faculty of Pharmacy, Sivas, Turkey, June 20-23, 2018.
- 89. A. Kabir, K.G. Furton, Nicola Tinary, Angela Tartaglia, Daniela Macerola, Cristian D'Ovidio, H.I. Ulusoy, M. Locatelli, "An FPSE-HPLC-PDA Method for the Determination of Anticancer Drugs in Human Whole Blood, Plasma, and Urine", Invited Lecture, iTAC 2018, 5th International Trace Analysis Congress. Cumhuriyet University-Faculty of Pharmacy, Sivas, Turkey, June 20-23, 2018.
- H. I. Ulusoy, M. Locatelli, A. Kabir, "Recent Trends in Microextraction Techniques Employed in Analytical and Bioanalytical Sample Preparation", Invited Lecture, iTAC 2018, 5th International Trace Analysis Congress. Cumhuriyet University-Faculty of Pharmacy, Sivas, Turkey, June 20-23, 2018.
- 87. A. Kabir, K.G. Furton, "Fabric Phase Sorptive Extraction: a Unique Integration of Solid Phase Extraction (SPE) and Solid Phase Microextraction (SPME)". Presented in 94th Florida Annual Meeting and Exposition (FAME) 2018, American Chemical Society, Florida Section, Innis Brook, Palm Harbour, Florida, USA, May 3-5, 2018.
- 86. A. Kabir, C.J. McBride, K.G. Furton, "Encapsulation of High Surface Particulates into Solgel Matrix and Their Use in Environmental Pollution Mitigation" Presented in 94th Florida Annual Meeting and Exposition (FAME) 2018, American Chemical Society, Florida Section, Innis Brook, Palm Harbour, Florida, USA, May 3-5, 2018.
- 85. **A. Kabir**, K.G. Furton, R. Mesa, "*Fabric phase sorptive extraction (FPSE): a new strategy in metabolomics sample preparation for disease biomarker discovery*", Analytix 2018, Miami, Florida, **USA**, March 26-28, **2018**.

- 84. **A. Kabir**, R. Mesa, Cassie-Jo McBride, S. Khandaker, S. Rakela, K.G. Furton, "*Capsule Phase Microextraction: A Field Deployable Sample Preparation Technique for Rapid Environmental Pollution Monitoring*", 18th European Conference on Environmental Chemistry, Porto, **Portugal**, November 26-29, **2017**.
- 83. A. Kabir, R. Mesa, Cassie-Jo McBride, S. Khandaker, S. Rakela, K.G. Furton, *"Encapsulation Their Use in Environmental Pollution Mitigation"*, 18th European Conference on Chemistry, Porto, Portugal, November 26-29, 2017.
- 82. S. Santana-Viera, R. Guedes-Alonso, Z. Sosa-Ferrera, J. J. Santana-Rodriguez, A. Kabir, K.G. Furton, "Application of a microextraction technique based on fabric phase sorptive extraction to the analysis of cytostatic drugs in wastewaters", 2nd International Caparica Conference on pollutant toxic ions and molecules. Lisbon, Portugal, November 6-9, 2017.
- 81. A. Kabir, M. Locatelli, R. Mesa, S. Rakela, K.G. Furton, "Capsule Phase Microextraction: A Field Deployable Sample Preparation Technique for Rapid Screening of Environmental Pollution in Water", 19th International Symposium on Advances in Extraction Technologies (ExTech 2017), Santiago de Compostela, Spain, June 27-30, 2017.
- 80. A. Kabir, M. Locatelli, E. De Luca, K.G. Furton, "FPSE-HPLC-PDA Analyses for Triple Therapy in the Treatment of Inflammatory Bowel Disease", 19th International Symposium on Advances in Extraction Technologies (ExTech 2017), Santiago de Compostela, Spain, June 27-30, 2017.
- 79. S.S. Lakade, F. Borrull, K.G. Furton, **A. Kabir**, N. Fontanals, R.M. Marce, "**Novel Microextraction Capsule Technique to Extract Personal Care Products in Environmental Water Samples**", 16th International Conference on Chemistry and the Environment, Oslo, **Norway**, June 18-22, **2017**.
- 78. M. Locatelli, A. Kabir, S. Carradori, E. De Luca, D. Innosa, T. Lopatriello, K.G. Furton, "FPSE-HPLC-PDA Method for the Determination of Twelve Azole Antimicrobial Drug Residues in Human Plasma and Urine", HPLC 2017, 45th International Symposium on High Performance Liquid Phase Separations and Related Techniques, Prague, Czech Republic, June 18-22, 2017.
- 77. A. Kabir, R. Mesa, S. Rakela, K.G. Furton, "Fabric Phase Sorptive Extraction Media: A Green Sample Preparation Technique for Food, Pharmaceutical, Environmental and Biological Samples", Presented in 93nd Florida Annual Meeting and Exposition (FAME) 2017, American Chemical Society, Florida Section, Innis Brook, Palm Harbor, Florida, USA, May 4-6, 2017.
- 76. A. Kabir, K. Powell, R. Blanco, R. Mesa, K.G. Furton, "Capsule Phase Microextraction (CPME): A New and Powerful Arsenal in Analytical and Forensic Sample Preparation", 69th Annual Scientific Meeting of American Academy of Forensic Sciences (AAFS), New Orleans, LA, USA, February 13-18, 2017.
- 75. A. Kabir, K. Powell, R. Blanco, R. Mesa, K.G. Furton, "Fabric Phase Sorptive Extraction Media: A Novel Forensic Sample Collection and Storage Device", 69th Annual Scientific Meeting of American Academy of Forensic Sciences (AAFS), New Orleans, LA, USA, February 13-18, 2017.
- 74. M. Goudarzi, A. Kabir, K.G. Furton, B.-H. Moon, J. Lacombe, A.J. Fornace Jr., F. Zenhausern. "Fabric Phase Sorptive Extraction A novel and field deployable metabolomic sample preparation approach for rapid radiation injury assessment", 62nd Annual International Meeting. Radiation Research Society. Walkoloa Village-Big Island, Hawaii, USA, October 16-19, 2016.
- 73. A. Anthemidis, V. Kazantzi, V. Samanidou, A. Kabir, K.G. Furton, "Flow-injection online fabric disk sorptive extraction (FDSE) coupled with atomic spectrometry for metal

determination", 20th International Conference on Flow Injection Analysis and Related Techniques, Mallorca, **Spain**, October 2-7, **2016**.

- 72. V. Samanidou, O. Philippou, E. Marinou, A. Kabir, K.G. Furton, "Evaluation of Fabric Phase Sorptive Extraction Media Coated with Sol-Gel Graphene for Rapid and Efficient Sample Clean-Up of Cow and Human Breast Milk Prior to HPLC-DAD Analysis of Bisphenol A and Residual Dental Restorative Material", 10th Aegean Analytical Chemistry Days (AACD 2016), Canakkale, Turkey, Sept. 29-Oct. 2, 2016.
- 71. K.G. Furton, L. Colon, V. Shellman, M. Cerreta, R. Mesa, A. Kabir, "Pioneering uses of headspace analysis for rapid identification of objects of forensic interest in the field", SCIX 2016, The Federation of Analytical Chemistry and Spectroscopy Societies, Minneapolis, Minnesota, USA, September 18-23, 2016.
- 70. A. Kabir, R. Blanco, J. Mejia, K.G. Furton, "Sol-Gel Based Molecularly Imprinted Polymers: Highly Sensitive Synthetic Receptors Created by Functional Materials", Abstract, Advances in Functional Materials Conference 2016, ICC, Jeju Island, South Korea, Aug. 8 -11, 2016.
- 69. M. Aznar, S. Ubeda, C. Segura, C. Nerin, A. Kabir, "Fabric Phase Sorptive Extraction (FPSE): A Novel Sample Preparation Methodology Applied to the Analysis of Volatiles in Orange Juice", Presented in 18th International Symposium on Advances in Extraction Technologies (ExTech 2016) & 22nd International Symposium on Separation Sciences (ISSS 2016), Torun, Poland, July 3-6, 2016.
- R. Mesa, A. Kabir, K.G. Furton, "Fabric Phase Sorptive Extraction Media: A Highly Effective and Versatile Chemical Storage Device", Presented in 92nd Florida Annual Meeting and Exposition. FAME 2016, American Chemical Society, Innis Brook, Palm Harbor, Florida, USA, May 5-7, 2016.
- 67. A. Kabir, R. Blanco, J. Mejia, K.G. Furton, "Capsule Phase Microextraction (CPME): An Ideal Sample Preparation Technique for Environmental and Biological Samples", Presented in 92nd Florida Annual Meeting and Exposition. FAME 2016, American Chemical Society, Innis Brook, Palm Harbor, Florida, USA, May 5-7, 2016.
- 66. A. Kabir, R. Blanco, R. Mesa, K.G. Furton, "Microextraction Capsules: Integration of Extraction Sorbent, Filtering Medium, and Stirring Mechanism into One", Presented in 5th Annual International Forensic Research Institute (IFRI) Forensic Symposium 2016, Florida International University, Miami, Florida, USA.
- 65. R. Blanco, R. Mesa, A. Kabir, K.G. Furton, "Fabric Phase Sorptive Extraction: An Indispensable Tool for Food Forensics", Presented in 5th Annual International Forensic Research Institute (IFRI) Forensic Symposium 2016, Florida International University, Miami, Florida, USA.
- 64. R. Mesa, A. Kabir, K.G. Furton, "Direct Ultra-Trace Analysis of Selected Estrogenic Endocrine Disruptors Including Bisphenol A from Whole Milk Using Fabric Phase Sorptive Extraction", Presented in 5th Annual International Forensic Research Institute (IFRI) Forensic Symposium 2016, Florida International University, Miami, Florida, USA.
- 63. A. Kabir, R. Mesa, R. Blanco, K.G. Furton, "A Green Sample Preparation Device for Complex Biological, Environmental, Food, Pharmaceutical and Toxicological Samples", Presented in Pittcon Conference & Expo 2016, Atlanta, Georgia, USA, March 2016.
- A. Kabir, R. Blanco, R. Mesa, K.G. Furton, "Microextraction Capsules: A New Direction in Green Analytical and Forensic Sample Preparation", 68th Annual Scientific Meeting, American Academy of Forensic Sciences (AAFS), Las Vegas, Nevada, USA, Feb 22-27, 2016.

- 61. R. Racamonde, R. Rodil, J.B. Quintana, B.J. Sieira, A. Kabir, K.G. Furton, R. Cela, "Fabric Phase Sorptive Extraction for the Determination of Non-steroidal Anti-Inflammatory Drugs in Water Samples", Presented in XX Meeting of the Spanish Society of Analytical Chemistry (SEQA), 1-3 July, 2015, Santiago de Compostela, Spain. This poster won the "Analytical and Bioanalytical Award" sponsored by Springer.
- M. Del Bubba, L. Ciofi, R. Guedes-Alonso, Z. Sosa-Ferrera, J. J. Santana-Rodriguez, A. Kabir, K. G. Furton, "Fabric Phase Sorptive Extraction (FPSE) Followed by UHPLC-MS/MS Analysis of Steroid Hormones in Biological and Environmental Samples", 21st International Symposium on Separation Science, Ljubljana, Slovenia, June 30-July 3, 2015.
- 59. R. Guedes-Alonso, L. Ciofi, M.D. Bubba, Z. Sosa-Ferrera, J.J. Santana-Rodríguez, A. Kabir, K.G. Furton, "Determination of Steroid Hormones in Wastewaters by Using Fabric Phase Sorptive Extraction (FPSE) and Ultra-High Performance Liquid Chromatography Tandem Mass Spectrometry", 42nd International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC 2015), Geneva, Switzerland, June 21-25, 2015.
- 58. **A. Kabir, "Background and Implications of Fabric Phase Sorptive Extraction (FPSE) on Environmental Sample Preparation**", eSeminar: Advances in Environmental Analysis. Organized by <u>www.SeparationScience.com</u>. June 23, June 25, **2015.**
- 57. R. Guedes-Alonso, L. Ciofi, M. D. Bubba, Z. Sosa-Ferrera, J.J. Santana-Rodríguez, A. Kabir, K.G. Furton, "Determination of Steroid Hormones in Wastewaters by Using Fabric Phase Sorptive Extraction (FPSE) and Ultra-High Performance Liquid Chromatography Tandem Mass Spectrometry", 42nd International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC 2015), Geneva, Switzerland, June 21-25, 2015.
- 56. A. Kabir, R. Mesa, R. Blanco, M. A. Bode, N. Khajanchi, K. G. Furton, "Fabric Phases: Unique Sorptive Extraction Media with Diversified Applications", The 2015 Florida Annual Meeting and Exposition of the American Chemical Society (FAME 2015), Palm Harbor, FL, USA, May 7-9, 2015.
- 55. A. Kabir, R. Mesa, K.G. Furton, "In Search of Advanced Materials for Sorptive Microextraction: A Facile Sol--Gel Synthesis Approach", The 2015 Florida Annual Meeting and Exposition of the American Chemical Society (FAME 2015), Palm Harbor, FL, USA, May 7-9, 2015.
- 54. R. Blanco, M.A. Bode, N. Khajanchi, R. Mesa, **A. Kabir**, K.G. Furton, "**Fabric Phase Sorptive Extraction: A Novel Approach for Field Sampling and In Situ Sample Preparation**", The 2015 Florida Annual Meeting and Exposition of the American Chemical Society (FAME 2015), Palm Harbor, FL, **USA**, May 7-9, **2015**.
- 53. R. Mesa, A. Kabir, K.G. Furton, "Trace Analysis of Endocrine Disrupting Chemicals in Whole Milk Using Fabric Phase Sorptive Extraction", The 2015 Florida Annual Meeting and Exposition of the American Chemical Society (FAME 2015), Palm Harbor, FL, USA, May 7-9, 2015.
- 52. S. Montesdeoca-Esponda, R. Alonso-Guedes, Z. Sosa-Ferrera, A. Kabir, K.G. Furton, J.J. Santana-Rodriguez, "Fabric Phase Sorptive Extraction (FPSE) followed by UHPLC for the Analysis of UV Stabilizers in Aqueous Samples from Gran Canaria Island (Spain)", Society of Environmental Toxicology and Chemistry (SETAC) Europe 25th Annual Meeting, Barcelona, Spain, May 3-7, 2015.
- 51. A. Kabir, "Diversified Applications of Fabric Phase Sorptive Extraction Media: From Field Sampling to Long-Term Analytes Storage", Fourth Annual IFRI Forensic Science Symposium, International Forensic Research Institute at Florida International University, Miami, FL, USA, May 5-6, 2015.

- 50. K.G. Furton, L. Colon, V. Shellman, M. Cerreta, R. Mesa, A. Kabir, "Development of Novel Forensic Sampling Methods and Evaluation of Microextraction Data for the Identification and Classification of Forensic Specimens Utilizing Gas Chromatography-Mass Spectrometry", Invited lecture at Pittcon Conference & Expo 2015, New Orleans, LA, USA, March 8-12, 2015.
- 49. **A. Kabir**, R. Mesa, K.G. Furton, **"Fabric Phase Sorptive Extraction Media: A Highly Effective Forensic Sample Collection and Storage Device**", 67th Annual Scientific Meeting, American Academy of Forensic Sciences, Orlando, FL, **USA**, February 16-21, **2015**.
- 48. N. Fontanals, S. Lakade, **A. Kabir**, K.G. Furton, R.M. Marce, F. Borrull, "**Fabric Phase Sorptive Extraction: A New Direction in Enriching Polar Emerging Contaminants from Environmental Samples**", 14th Instrumental Analysis Conference, Barcelona, **Spain**, October 1-3, **2014**.
- 47. A. Kabir, R. Mesa, J. Jurmain, K.G. Furton, "Fabric Phase Sorptive Extraction (FPSE): A new Direction in Sorptive Microextraction", Florida Annual Meeting and Exposition 2014 (FAME 2014), American Chemical Society Florida Section, Innisbrook, Palm Harbor, Florida, USA, May 8-10, 2014.
- 46. V. Samanidou, L.-D. Galanopoulos, A. Kabir, K.G. Furton, "A Novel Sample Preparation Approach for the Fast Extraction of Amphenicols Residues from Milk Using Fabric Phase Sorptive Extraction (FPSE)", Abstract, 16th International Symposium on Advances in Extraction Technologies, ExTech 2014, Chania-Crete, Greece, May 25-28, 2014.
- 45. R. Mesa, A. Kabir, K.G. Furton, "Analysis of Trace Organics at Part Per Trillion Level Concentrations Using a Novel Sample Preparation Technique: Fabric Phase Sorptive Extraction", Third Annual Forensic Symposium, International Forensic Research Institute, Florida International University, Miami, Florida, USA, April 30-May 1, 2014.
- 44. P. Davis, **A. Kabir**, K.G. Furton, "Development of an Improved Extraction and Analysis Technique for Human Scent Evidence Analysis", Third Annual Forensic Symposium, International Forensic Research Institute, Florida International University, Miami, Florida, USA, April 30-May 1, 2014.
- 43. L.J. Colon-Crespo, D. Herrera-Hernandez, H. Holness, **A. Kabir**, K.G. Furton, "**Evaluation of Human Scent as Possible Classification Evidence**", Third Annual Forensic Symposium, International Forensic Research Institute, Florida International University, Miami, Florida, **USA**, April 30-May 1, **2014**.
- 42. J. Jurmain, R. Mesa, A. Kabir, K.G. Furton, "High Sensitivity Extraction of Substituted Phenols from Environmental Water using Fabric Phase Sorptive Extraction (FPSE)", Abstract, Fourth Annual Florida Undergraduate Research Conference (FURC 2014), Miami, USA, February 21-22, 2014.
- 41. K.G. Furton, N.I. Caraballo, L. Colon, A. Huertas, M. Cerreta, R. Mesa, A. Kabir, "Development of New Extraction and Analysis Methods for the Rapid Detection of Characteristic Chemicals from Humans and Contraband Materials", Invited lecture at Pittcon Conference & Expo 2014, Chicago, IL, USA, March 2-6, 2014.
- L.J. Colón-Crespo, D. Herrera-Hernández, H. Holness, A. Kabir, K. G. Furton, A. Fan, L. D. Du-Thumm, "Evaluation of Human Scent as Possible Classification Evidence", Abstract, American Academy of Forensic Science (AAFS), 66th Annual Scientific Meeting, Seattle, WA, USA, February 17-22, 2014.
- R. Mesa, A. Kabir, K.G. Furton, "Analysis of Trace Organics at Parts per Trillion Level Concentrations Using a Novel Sample Preparation Technique: Fabric Phase Sorptive Extraction", Abstract, American Academy of Forensic Science (AAFS), 66th Annual Scientific Meeting, Seattle, WA, USA, February 17-22, 2014.

- P. Davis, A. Kabir, K. G. Furton, "Development of an Improved Extraction and Analysis Technique for Human Scent Evidence", Abstract, American Academy of Forensic Science (AAFS), 66th Annual Scientific Meeting, Seattle, WA, USA, February 17-22, 2014.
- 37. K.G. Furton, C. Sanchez, K. Beltz, J. Brown, N.I. Caraballo, L. Colon, A. Huertas, M. Cerreta, A. Kabir, "Advances in the Sampling and Identification of Illicit Substances and Persons in the Field and in the Lab", Invited lecture in Pittcon 2013, Philadelphia, PA, USA, March 17-21, 2013.
- 36. M. Cerreta, A. Kabir, K.G. Furton, "The Development of a Novel Sol Gel Polymeric Network for the Molecular Imprinting of Illicit Drugs", Abstract, Florida Annual Meeting and Exposition, FAME 2012, Innis Brook, Florida, USA, May 17-20, 2012.
- 35. M. Cerreta, A. Kabir, K.G. Furton, "The Development of a Novel Sol Gel Polymeric Network for the Molecular Imprinting of Illicit Drugs", Abstract, Pittcon 2012, Orlando, Florida, USA, March 11-15, 2012.
- 34. A.A. McKenzie Coe, J.S. Brown, N.I. Caraballo, A. Kabir, K.G. Furton, "Identification and Comparison of Volatile Organic Compounds in Cigarettes and Marijuana Samples Using Solid-Phase Microextraction and Gas Chromatography/Mass Spectrometry (SPME-GC/MS)", Annual IFRI Forensic Science Symposium, International Forensic Research Institute, Florida International University, Miami, Florida, USA, March 9-10, 2012.
- 33. M. Cerreta, A. Kabir, K.G. Furton, "The Development of a Novel Sol Gel Polymeric Network for the Molecular Imprinting of Illicit Drugs", Annual IFRI Forensic Science Symposium, International Forensic Research Institute, Florida International University, Miami, Florida, USA, March 9-10, 2012.
- 32. V. Shellman, N.I. Caraballo, J.S. Brown, A. Kabir, K.G. Furton, "Headspace Solid-Phase Microextraction Coupled to Gas Chromatography/Mass Spectrometry (HS-SPME-GC/MS) for the Detection of Caffeine, an Over the Counter (OTC) Medicine and a Coffee Sample", Annual IFRI Forensic Science Symposium, International Forensic Research Institute, Florida International University, Miami, Florida, USA, March 9-10, 2012.
- 31. M. Cerreta, A. Kabir, K.G. Furton, "The Optimization of a Sol Solution for its Use with the Molecular Imprinting for the Extraction of Illicit Drugs", Abstract, American Academy of Forensic Science (AAFS), 2012 Annual Meeting, Atlanta, GA, USA, February 20-25, 2012.
- 30. S. Kulkarni, T.Y. Kim, A. Kabir, L. Fang, A. Shearrow, E. Turner, G. R. Newkome, A. Malik, "Sol-gel Hybrid Organic-Inorganic Sorbents with Linear and Dendritic Cyano Ligands for Capillary Microextraction of Underivatized Highly Polar Analytes from Aqueous Samples", Invited plenary lecture at the 8th International Symposium on Advances in Extraction Technologies, ExTech 2006, York, UK, February 6-10, 2006.
- A. Malik, A. Kabir, S. Kulkarni, L. Fang, A. Shearrow, K. Alhooshani, T.Y. Kim, "Sol-Gel Polar Stationary Phases for Capillary-based Separation and Solvent-free Extraction Methods", Invited Lecture at the 28th International Symposium on Capillary Chromatography and Electrophoresis, Las Vegas, USA, May 22-25, 2005.
- 28. A. Malik, A. Kabir, W. Li, T.Y. Kim, K. Alhooshani, "Sol-Gel Organic-Inorganic Hybrid Materials for Ultra-Trace Analysis of Organic Pollutants in Aqueous Media", Oral presentation at Pittcon 2005, Orlando, Florida, USA, Feb 26-March 4, 2005.
- 27. A. Malik, A. Kabir, T.Y. Kim, W. Li, K. Alhooshani, S. Kulkarni, L. Fang, A. Shearrow, "Sol-gel Coatings and Monolithic Beds in Analytical Microseparation and Sample Preconcentration", Invited Lecture at the graduate seminar, Department of Chemistry and Biochemistry, Southern Illinois University, Carbondale, IL, USA, April 22, 2005.
- 26. A. Kabir, C. Hamlet, and A. Malik, "Parts Per Quadrillion Level Ultra-Trace Analysis of Polar and Nonpolar Compounds via Solventless Microextraction on Sol-Gel

Polytetrahydrofuran Coated Capillaries and GC-FID", **Poster presentation** at 27th International Symposium on Capillary Chromatography, Riva del Garda, **Italy**, May 31- June 4, **2004**.

- 25. A. Kabir, C. Hamlet, and A. Malik, "Capillary Microextraction on Sol-gel Dendrimer coatings", Oral presentation at 2004 Florida Annual Meeting and Exposition of the American Chemical Society (FAME 2004), Orlando, Florida, USA, May 6-8, 2004. Abstract # 4, p. 16.
- A. Malik, A. Kabir, W. Li, K. Alhooshani, T.-Y. Kim, S. Kulkarni, L. Fang, "Sol-Gel Stationary Phases in Chromatographic Separations", Abstracts, 56th Southeast Regional meeting of the American Chemical Society, Research Triangle Park, NC, USA, 2004.
- 23. A. Malik, K. Alhooshani, T.Y. Kim, A. Kabir, W. Li, S. Kulkarni, and L. Fang, "Sol-gel Titaniaand Zirconia-Based Organic-Inorganic Hybrid Materials for Solventless Microextraction of Trace Analytes", Invited Lecture, ExTech 2004, Sixth International Symposium on Advances in Extraction Technologies, Leipzig, Germany, September 6-8, 2004.
- 22. W. Li, T.Y. Kim, K. Alhooshani, A. Kabir, S. Kulkarni, D.P. Fries, A. Malik, "Novel Sol-gel Strategies for On-line Preconcentration of Biomolecules and Environmental Pollutants in Liquid-Phase Trace Analysis", Plenary Lecture, 27th International Symposium on Capillary Chromatography, Riva del Garda, Italy, May 31-June 4, 2004.
- 21. A. Kabir, C. Hamlet, and A. Malik, "Novel Sol-gel Polytetrahydrofuran Coatings for Trace Analysis of Polar and Non-polar Analytes from Aqueous Media by Capillary Microextraction Coupled to Gas Chromatography", Poster presentation, Fifth International Symposium on Advances in Extraction Technologies (ExTech 2003), St. Pete Beach, Florida, USA, March 5-7, 2003.
- A. Malik, T.Y. Kim, K. Alhooshani, S. Kulkarni, A. Kabir, W. Li, J. Medlar, "Transition Metal Oxide-Based Organic-Inorganic Hybrid Sol-Gel Stationary Phases", Invited Lecture at the 26th International Symposium on Capillary Chromatography and Electrophoresis, Las Vegas, USA, May 18-22, 2003.
- H. Kay, N. Poor, S. Campbell, J. Barltrop, A. Kabir, R. Tremblay, V. Bhethanabotla, A. Zelalem, D. Anderson, L. Stockburger, E. Swartz, "Atmospheric Deposition of Polycyclic Aromatic Hydrocarbons (PAHs) of Tampa Bay", Abstracts, 96th Annual Conference of Air & Waste Management Association (A& WMA), San Diego, CA, USA, June 22-26, 2003.
- A. Malik, A. Kabir, W. Li, K. Alhooshani, T.Y. Kim, and J. Medlar, "New Direction in Stationary Phase Technology for Analytical Microseparations-The Sol-Gel Approach", Invited Lecture at 2003 Florida Annual Meeting and Exposition of the American Chemical Society (FAME 2003), Orlando, Florida, USA, May 8-10, 2003. Abstract # 86, p. 45.
- 17. W. Li, T.Y. Kim, K. Alhooshani, A. Kabir, C. Shende, A. Malik, "Sol-Gel Materials for the Preconcentration and Separation of Biomolecules", Invited Lecture at the Pittsburgh Conference, Orlando, Florida, USA, March 9-14, 2003.
- A. Malik, W. Li, A. Kabir, C. Hamlet, K. Alhooshani, J. Medlar, T.Y. Kim, and S. Kulkarni, "Sol-Gel Stationary Phases in Analytical Microextraction", Invited Lecture, Fifth International Symposium on Advances in Extraction Technologies (ExTech 2003), St. Pete Beach, Florida, USA, March 5-7, 2003.
- 15. W. Li, T.Y. Kim, K. Alhooshani, A. Kabir, C. Shende, A. Malik, "Sol-Gel Materials for the Preconcentration and Separation of Biomolecules", Invited lecture at the Pittsburgh Conference (Pittcon), Orlando, Florida, USA, March 9-14, 2003.

- 14. J. Medlar, A. Kabir, and A. Malik, "Effect of Coating Thickness in Capillary Microextraction with a Sol-gel Poly(dimethyldiphenylsiloxane) Coating", Poster presentation, Fifth International Symposium on Advances in Extraction Technologies, ExTech 2003, St. Pete Beach, Florida, USA, March 5-7, 2003.
- C. Hamlet, A. Kabir, G. R. Newkome, K. S. Yoo, and A. Malik, "Novel Sol-Gel Dendrimer Coatings for Ultra-Trace Environmental Analysis by Capillary Microextraction Coupled to Gas Chromatography", Poster presentation, Fifth International Symposium on Advances in Extraction Technologies, ExTech 2003, St. Pete Beach, Florida, USA, March 5-7, 2003.
- 12. T.Y. Kim, K. Alhooshani, **A. Kabir**, and A. Malik, "**Hybrid Organic-Inorganic Sol-Gel Titania Coatings for Sample Extraction and Preconcentration for Gas- and Liquid-Phase Separation**", **Poster presentation**, Fifth International Symposium on Advances in Extraction Technologies, **ExTech 2003**, St. Pete Beach, Florida, **USA**, March 5-7, **2003**.
- 11. W. Li, K. Alhooshani, T.Y. Kim, C. Shende, **A. Kabir**, A. Malik, "**Sol-Gel Chemistry in Separation Science**", **Invited Lecture** at the 2002 Eastern Analytical Symposium, Somerset, New Jersey, **USA**, November 18-21, **2002**.
- W. Li, K. Alhooshani, T.Y. Kim, C. Shende, A. Kabir, A. Malik, "Sol-Gel Coatings and Monolithic Beds for Analytical Microseparations and Sample Preconcentrations", Invited Lecture at the Analytical Division Seminar of the Department of Chemistry, Florida State University, Tallahassee, Florida, USA, October 31, 2002.
- A. Malik, S. Bigham, A. Kabir, C. Hamlet, C. Shende, C. Tolar, and K. Alhooshani, "Sol-Gel Materials for Analytical Microextraction", Invited Lecture, ExTech 2002, Advances in Extraction Technologies, Paris, France, July 3-5, 2002.
- 8. A. Kabir, C. Hamlet, S. Bigham, T.Y. Kim, J. Medlar, C. Tolar, and A. Malik, "Sol-Gel Capillary Microextraction with Organic-Inorganic Hybrid Surface Coatings and Monolithic Beds", Plenary lecture, 25th International Symposium on Capillary Chromatography, Riva del Garda, Italy, May 13-17, 2002.
- S. Bigham, A. Kabir, C. Shende, T.Y. Kim, W. Li, J. Medlar, C. Tolar, A. Alli, C. Hamlet, and A. Malik, "Sol-Gel Coatings and Monolithic Beds in Chromatographic Separations and Solventless Capillary Microextractions", Plenary Lecture (PL 3), 9th Latin American Congress on Chromatography, Cartagena, Colombia, February 20-22, 2002. Proceedings, pp. 9-10.
- D.X. Wang, J.D. Hayes, S. Bigham, A. Kabir, C. Shende, T.Y. Kim, W. Li, J. Medlar, C. Tolar, A. Alli, C. Hamlet, and A. Malik, "Sol-Gel Approach to Column Technology for Analytical Microseparations", Invited Presentation at World Precision Instrument, Sarasota, Florida, USA, January 23, 2002.
- 5. A. Malik, S. Bigham, J. Medlar, C. Ashford, C. Tolar, A. Kabir, "Capillary Microextraction with Sol-Gel Coatings and Monolithic Beds", Invited lecture at ExTech 2001, Advances in Extraction Technologies, Barcelona, Spain, September 17-19, 2001.
- A. Malik, A. Kabir, C. Shende, W. Li, T.Y. Kim, S. Bigham, J. Medlar, C. Ashford, C. Tolar, "Sol-Gel Coatings and Monolithic Beds Gas- and Liquid Phase Separation and Sample Preconcentration", Invited Lecture at the 24th International Symposium on Capillary Chromatography and Electrophoresis, Las Vegas, USA, May 20-24, 2001.
- A. Malik, J.D. Hayes, D.X. Wang, A. Kabir, S. Bigham, C. Ashford, "New Developments in Sol-gel Column Technology for Analytical Microseparations", Invited Lecture for Chemistry in Interface Lecture Series, University of Tubingen, Germany, June 13, 2000.

- A. Malik, J.D. Hayes, D.-X. Wang and A. Kabir, "Surface-bonded Organic-inorganic Solgel Coatings and Monolithic Separation Beds: Their in-situ Creation, Performance, and Analytical Potential in Microseparations", Invited Lecture, 32nd Central Regional Meeting of the American Chemical Society: The Ohio Valley Chromatography Symposium, Covington, Kentucky, USA, May 16-19, 2000, Abstract # 154, p. 114.
- 1. A. Malik, S. Bigham, J. Medlar, C. Ashford, A. Kabir, "Sol-gel Approach to in situ Creation of Surface Coatings and Monolithic Beds for analytical Microextraction", Invited Lecture, ExTech 2000, Advances in Extraction Technologies, University of Waterloo, Waterloo, Canada, May 1-3, 2000, Abstracts p. 35.

RESEARCH FUNDING

- 1. **A. Kabir**, K.G. Furton, "Support for Commercialization of New Sample Preparation Technologies", Division of Research, Florida International University, November **2018**, **US \$60,000.00**.
- 2. **A. Kabir**, Subcontract for "Synthesizing Molecularly Imprinted Polymer for 6 Human Metabolites" by the Center for Applied Nanobioscience and Medicine, College of Medicine Phoenix, University of Arizona; Original award granted by National Institute of Allergy and Infectious Diseases (NIAID), National Institute of Health, Center for Countermeasures Against Radiation (CMCR), June **2017**, **US \$10,500.00**.
- 3. **A. Kabir**, K.G. Furton, "Support for Commercialization of New Sample Preparation Technologies", Division of Research, Florida International University, May **2017**, **US \$60,000.00**.
- 4. **A. Kabir,** K.G. Furton, *Support for* "Fabric Phase Sorptive Extraction Technology Commercialization", Division of Research, Florida International University, April **2014**, **US \$43,597.00**.
- 5. K. G. Furton, **A. Kabir**, H. Holness and J. Almirall, "Validation and Implementation of Canine Training Aids Using Controlled Odor Mimic Permeation System (COMPS)", National Forensic Science Technology Center, Clearwater, FL. August **2011**, **US \$62,000.00**.
- Facilitated Furton Research Group at FIU in writing grant proposals to secure US \$750,000.00 extramural research funding from federal, nonprofit and commercial enterprises during 2010-2013.

TEACHING EXPERIENCE AND COURSE DEVELOPMENT PLAN

Interested in teaching General Chemistry (undergraduate), Elementary Analytical Chemistry (undergraduate), Advanced Analytical Chemistry (graduate), Separation Science (graduate), Statistics and Chemometrics (graduate).

INSTITUTION		COURSE TITLE	COURSE LEVEL	SEMESTERS TAUGHT
Nova University	Southeastern	Introduction to Environmental Chemistry	CHM 1500	1
Nova University	Southeastern	Survey of Forensic Science (plus Lab)	CHM 1200/L	2
Nova University	Southeastern	General Chemistry II (plus Lab)	CHM 1310/L	2
Nova	Southeastern	General Chemistry I (plus Lab)	CHM 1300/L	2

University			
Miami Dade College	General Chemistry/Qualitative Analysis	CHM 1046	1
Broward College	Chemistry for Health Sciences (plus Lab)	CHM 1032/L	9
Broward College	General Chemistry	CHM 1045	4
Florida International University	Instrumental Analysis Lab	CHM 4130L	12
University of South Florida	Instrumental Methods of Analysis Lab	CHM 4130L	6
University of South Florida	Elementary Analytical Chemistry Lab	CHM 3120L	2
University of South Florida	General Chemistry II Lab	CHM 2046L	2
University of North Carolina - Greensborough	Organic Chemistry I Lab	CHM 2210L	1
University of Dhaka	Pharmaceutical Technology	Graduate	12
University of Dhaka	Applied Chemistry II Lab	Graduate	12
University of Dhaka	Applied Chemistry I Lab	Undergrad	12
University of Dhaka	Inorganic Chemistry II	Undergrad	12
University of Dhaka	Chemical Technology II	Undergrad	12
University of Dhaka	Pharmaceutical Process & Technology	Undergrad	12
University of Dhaka	Industrial Economics, Psychology & Management	Undergrad	12

STUDENT ADVISEMENT

Ph.D. Student Mentoring:

- 3. Janet Crespo Cajigas (Fall 2020-)
- 2. Basit Olayanju (Spring 2020-)
- 1. Rodolfo Mesa (Fall 2012-Fall 2017)

Dissertation Title: "Simplifying Sample Preparation Using Fabric Phase Sorptive Extraction: Analysis of Trace Targeted Pollutant Residues in Environmental, Biological and Food Samples" (http://digitalcommons.fiu.edu/etd/3513; defended Oct 25, 2017).

Undergraduate Student Mentoring:

NAME	LEVEL	SEMESTER
Aleksandra Antevska	Undergraduate Research	Summer 2018-Summer 2019
Stephanie Castano	Undergraduate Research	Summer 2018-Spring 2019
Cassie Jo McBride	Undergraduate Research Assistant	Fall 2017-Fall 2019
Sumaiya Khandker	Undergraduate Research	Fall 2017
Samantha Rakela	Undergraduate Research	Spring 2017 – Fall 2017
Tanzila Auni	Undergraduate Research	Summer 2017
Katherine Powell	Undergraduate Research	Summer 2016
Rayma Blanco	Undergraduate Research	Spring 2015 – Summer 2015
Manuel A. Bode	Undergraduate Research	Spring 2015 – Summer 2015
Namita Khajanchi	High School Valedictorian	Spring 2015 – Summer 2015
Jessica Jurmain	Undergraduate Research	Spring 2014
Linda Maiben	Undergraduate Research	Summer 2013
Jocelyn Martinez	Undergraduate Research	Summer 2012 – Fall 2012
Rosalba Parrazal	Undergraduate Research	Summer 2012 – Fall 2012

Linet Lopez	Undergraduate Research	Summer 2012
Alan A. McKenzie	McNair Summer Research	Spring 2012
Vanquilla Shellman	McNair Summer Research	Spring 2012
Rodolfo Mesa	Undergraduate Research	Summer 2011

NATIONAL AND INTERNATIONAL RESEARCH COLLABORATION

The diversified invention portfolio in the field of **Chromatographic Separation and Analytical/Bioanalytical Sample Preparation** have drawn immense interests among researchers across the world. As a result, we have successfully established **Research Collaboration and Material Transfer Agreements** between FIU and more than **forty** academic research groups in the USA and abroad. Under these agreements, collaborative research on analytical, environmental, toxicological, forensic, food and clinical samples are being carried out to explore new applications of the invented technologies and the research findings are being published jointly in reputed journals on a regular basis. As the **primary inventor** of these technologies, I am among the principal investigators of these collaborative research projects and am working as the Project Manager of these collaborative research efforts.

PROFESSIONAL TRAINING

- Effective Instruction for STEM Disciplines Center for Advancement of Teaching, Florida International University, Miami, FL, 2012.
- Clinical Trial Workshop
 H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL, 2010.
- Experimental Design for Productivity and Quality in R&D American Chemical Society (ACS), Houston, TX, 2007.
- Statistical Analysis of Laboratory Data American Chemical Society (ACS), San Francisco, CA, 2006.
- **Agilent GC/MSD ChemStation and Instrument Operation** Agilent Training Institute, Alpharetta, GA, **2006**.

Flavor Research Workshop

Division of Agriculture and Food Chemistry, American Chemical Society (ACS), Washington, DC, **2005**.

Theory and Practice of Modern Sample Preparation ExTech 2003, St. Pete Beach, FL, 2003.

AFFILIATION TO PROFESSIONAL SOCIETIES

- American Chemical Society (ACS).
- American Society for Pharmaceutical Scientists (ASPS).
- Association of Chemistry and the Environment (ACE).

UNIVERSITY AND COMMUNITY SERVICES

 Moderator, Tuesday Times Roundtable. Minority Participation in Science, Technology, Engineering and Math (STEM): Problem and their Potential Solutions. Sponsored by FIU Student Government Association, The New York Times and FIU Department of Global Learning, November 19, 2013.

- 2. Moderator, Tuesday Times Roundtable. Underrepresentation of Women in STEM Field: Causes and Remedies. Sponsored by FIU Student Government Association, The New York Times and FIU Department of Global Learning, March 26, 2013.
- 3. Science Education: Global Challenges and Social Impact. Sponsored by FIU Student Government Association, The New York Times and FIU Department of Global Learning, October 23, 2012.
- 4. **Project Manager,** JMP Statistical Software purchase, distribution and maintenance, Florida International University, Miami, FL, **2011-2012**.
- 5. Moderator, Tuesday Times Roundtable. Science, Technology, Engineering and Math (STEM): Are We Prepared Enough to Meet the Evolving Global Challenges? Sponsored by FIU Student Government Association, The New York Times and FIU Department of Global Learning, November 8, 2011.
- Moderator, Tuesday Times Roundtable. The Complex Immigration Policies of the United States. Sponsored by FIU Student Government Association, The New York Times and FIU Department of Global Learning, February 22, 2011.
- 7. Guest Speaker, Forensic Panel, Florida International University, Miami, Florida, November 16, 2010.

MS THESIS AND PHD DISSERTATION BASED ON FABRIC PHASE SORPTIVE EXTRACTION AND OTHER INVENTIONS

- 1. Ramandeep Kaur, PhD Dissertation, Department of Chemistry, Punjabi University, Patiala, India, "Trace Analysis of Toxic Substances in the Environment using Chromatographic Techniques", December, 2018.
- 2. Denise Innosa, MS Thesis, Department of Pharmacy, University of Chiety-Pescara "G. d' Annunzio", Chiety, Pescara, Italy, "A Fabric Phase Sorptive Extraction-High Performance Liquid Chromatography-Photo Diode Array Detection Method for the Determination of Twelve Azole Antimicrobial Drug Residues in Human Plasma", March, 2017.
- 3. Teresa Lopatriello, MS Thesis, Department of Pharmacy, University of Chiety-Pescara "G. d' Annunzio", Chiety, Pescara, Italy, "A Fabric phase sorptive extraction-High performance liquid chromatography-photo diode array detection method for the determination of twelve azole antimicrobial drug residues in human urine", March 2017
- 3. Daniela Macerola, **MS Thesis**, Department of Pharmacy, **University of Chiety-Pescara "G. d' Annunzio**", Chiety, Pescara, Italy, "*Fabric phase sorptive extraction-high performance liquid Chromatography-photodiode array detection method for simultaneous monitoring of three inflammatory bowel disease treatment drugs in whole blood, plasma and urine*", March 2018.
- 4. Angela Tartaglia, **MS Thesis**, Department of Pharmacy, **University of Chiety-Pescara "G. d' Annunzio**", Chiety, Pescara, Italy, "*FPSE-HPLC-DAD method for the quantification of anticancer drugs in human whole blood, plasma, and urine*", March 2018.
- Elena Sperandio, MS Thesis, Department of Pharmacy, University of Chiety-Pescara "G. d' Annunzio", Chiety, Pescara, Italy, "Analysis of Solar UV Filters in Biological Matrix", October 2018.
- 6. Rodolfo Mesa, PhD Dissertation, Department of Chemistry and Biochemistry, Florida International University, Miami, Florida, USA, "Simplifying Sample Preparation Using Fabric

Phase Sorptive Extraction: Analysis of Trace Targeted Pollutant Residues in Environmental, Biological and Food Samples" October 25, 2017 (https://digitalcommons.fiu.edu/etd/3513/).

MEDIA COVERAGES & RECOGNITIONS

- Journal Highlight: Application of fabric phase sorptive extraction with GC-MS for the determination of organophosphorus pesticides in selected vegetable published in separationsNOW.com (http://www.separationsnow.com/details/ezine/16884dca3e5/Journal-Highlight-Application-of-fabric-phase-sorptive-extraction-with-GC-MSfor.html#.XFb8uJaeQvM.linkedin)
- Raise a glass of Christmas cheer: Extracting pesticides from wine with a sol-gel: A feature published in separationsNOW.com on December 17, 2018 (http://www.separationsnow.com/details/ezine/167bbfc09b9/Raise-a-glass-of-Christmas-cheer-Extracting-pesticides-from-wine-with-a-sol-gel.html?tzcheck=1).
- Recognized as a book author in Faculty Book Authors Reception by Florida International University (https://news.fiu.edu/2018/05/facultys-newest-works-perfect-forsummer/123239).
- **FIU Develops New Chemical Sampling Technology. A** feature published in Lab News (https://www.lanews.org/fiu-develops-new-chemical-sampling-technology/), March 28, 2018.
- Analysis Breakthrough. Florida Trend (www.floridatrend.com), September 2017 Issue (http://www.fau.edu/jupiter/emails/FAUJupiter/Fl%20Trend_Sept_17_FAU.pdf).
- Featured in FIU Chemistry Department News on November 1, 2017 (https://chemistry.fiu.edu/news/2017/dr-abuzar-kabir-to-serve-as-guest-editor/).
- Fabric phase sorptive extraction for cheaper, faster, and more sensitive biological and environmental sampling, featured in Phys.org on June 8, 2017 (https://phys.org/news/2017-06-fabric-phase-sorptive-cheaper-faster.html)
- Chemical Sampling Technology: An Industry Game-Changer. FIU News, June 08, 2017 (https://news.fiu.edu/2017/06/chemical-sampling-technology-an-industry-game-changer/112261).
- Cotton-Based Material Could Yield Much Faster Chemical Screening. CEMINFO, June 30, 2017 (https://www.chem.info/news/2017/06/cotton-based-material-could-yield-much-fasterchemical-screening).
- Using Fabric, FIU Researchers Find Fast New Way to Test for Chemicals. Miami Herald (Premier Florida Newspaper), June 28, 2017 (http://www.miamiherald.com/news/local/community/miami-dade/article158691894.html).
- Novel Sampling Technique for Sex Pheromone Analysis in Air. May 18, 2017 (http://www.chromatographyonline.com/novel-sampling-technique-sex-pheromone-analysis-air).
- Green Perspective in Sample Preparation Prior to Chromatographic Analysis. Atlas of Science, May 09, 2017 (https://atlasofscience.org/green-perspective-in-sample-preparation-priorto-chromatographic-analysis/).
- Fruit Freshness Ripe for Innovation with Use of Coated Fabric. Food Navigator, June 14, 2017 (http://www.foodnavigator.com/Science/Fruit-freshness-ripe-for-innovation-with-use-of-coated-fabric).
- A Rapid, Reliable Way to Determine the Freshness of Fruit, Technology Networks, June 19, 2017 (https://www.technologynetworks.com/analysis/news/rapid-reliable-way-to-determine-thefreshness-of-fruit-289704).

- **New Fabric Could Test Fruit Freshness at the Farm.** Fresh Plaza, June 19, **2017** (http://www.freshplaza.com/article/177382/New-fabric-could-test-fruit-freshness-at-the-farm).
- Coated Fabric Reveals Ripeness of Fruit. Queensland Country Life, June 13, 2017 (http://www.queenslandcountrylife.com.au/story/4725562/fabric-delivers-fresh-fruitsolution/?cs=4699).
- Research work used for the front cover of Handbook of Sample Preparation, Janusz Pawliszyn, Heather Lord, Eds.; Wiley-Blackwell, October 2010 (https://www.amazon.com/Handbook-Sample-Preparation-Janusz-Pawliszyn/dp/0470099348/ref=sr_1_1?ie=UTF8&qid=1510859635&sr=8-1&keywords=handbook+of+sample+preparation).
- Analysis: how low it can go? A feature published in <u>www.separationsnow.com</u>, an online forum for Separation Scientists, Oct 12, 2004 (http://www.separationsnow.com/details/ezine/sepspec679ezine/Analysis---how-low-can-you-go.html).

