Kareem Yusuf, Ph.D.

Assistant professor, Department of Chemistry, King Saud University, KSA

Kareem Youssif I 00966561371903	Mahmoud kmahmoud@ksu.edu.sa 3 Google Scholar in In in in in dr_kareemyusuf@yahoo.com
SUMMARY	
Teaching	 + 1546 teaching hours in General and Analytical Chemistry. 4 graduate students, 2 master and 1 PhD supervision.
Research	 Separation materials development and related techniques. 7 Funded projects as a PI, CO-I, Researcher or student. 779 total citations & 13 h-index. 33 papers, 2 review, 2 US patent and 2 book chapters. 1 translated book (English to Arabic). 11 International Conferences participation
Community services	 +500 Training hours in chromatography. +100 Training hours in laboratory Quality Management.
	IRCA International certified auditor for Quality Management Systems.
	 Affiliate Assessor for the Saudi Accreditation Center (SAC). 8 Administrative committees' participation.
PROFESSIONAL PREPARATION	
Ph.D.	2013 – 2016: Analytical Chemistry, College of Science, King Saud University, KSA.
	Thesis entitled "Fabrication of monolithic capillary columns incorporated with metal-organic frameworks as a composite stationary phase for chromatographic applications
M.S.	2010 – 2013: Chemistry, College of Science, King Saud University, KSA. Thesis entitled "Preparation and characterization of polymethacrylate based monolithic capillary columns for gas

- Chromatography applications".

 2007 2010: Material Science, Graduate Studies and Research Institute, Alexandria
- B.S.
 B.S.
 University, Alexandria, Egypt.
 B.S.
 2000 2004: Chemistry & Biochemistry, Faculty of Sciences, Alexandria University, Alexandria, Egypt.

AWARDS AND SCHOLARSHIPS

June 2015: 2nd place KSU Scientific Excellence Prize.

Jan. 2013: 7th place the annual postgraduate students' conference of KSA universities.

2013: Attracting Outstanding Faculty and Researchers Program PhD Fellowship, KSU, KSA

2008: Attracting Outstanding Faculty and Researchers Program M.S. Fellowship, KSU, KSA

EMPLOYMENT HISTORY

12/2018 – current: Assistant professor

Analytical Chemistry, Chemistry Department, College of Science, King Saud University (KSU), KSA.

5/2016 – 8/2018: Researcher & Cooperative Assistant professor

Analytical Chemistry, Chemistry Department, College of Science, King Saud University (KSU), KSA.

1/2017 - 5/2017: cooperative Lecturer

Basic Sciences Department, Prince Sattam Bin Abdulaziz University (PSAU), KSA.

10/2008 – 5/2016: Researcher

Analytical Chemistry, Chemistry Department, College of Science, King Saud University (KSU), KSA.

12/ 2007 - 9/2008: Chemist

Easy Beauty Personal Care Group, Egypt, Research and Development Department.

9/2007 - 12/2007: Chemistry Specialist

Mubarak City for Scientific Researches & Technology Applications, Egypt, Advanced Technology & New Materials Institute, Central Lab. of Material Analysis & Characterization.

2/2005 - 8/2007: Chemist

Chemicals & Dyes Factory "Lactuel Cosmetics", Egypt, QC department

RESEARCH INTERESTS AND EXPERIENCES

• Research Interest

Developing new materials for separation:

- ✓ Developing new materials for sample pretreatment, sample preparation, membrane separation and chromatographic analytical, preparative and large scale applications.
- ✓ New materials including among others; organic polymeric monoliths, natural spores (sporopollenin), Carbon Nanotubes (CNT), Metal-Organic Frameworks (MOFs), Covalent Organic Framework (COFs)...etc.
- ✓ Developed materials could be fabricated in various forms such as; capillary fused silica immobilized monolithic columns, stainless steel packed columns, composite materials, wall-coated capillary columns, supported porous membranes, Core-shell, Mixed Matrix Membranes (MMMs), monolithic or packed pretreatment cartilages, Molecularly Imprinted Polymers (MIPs)...etc.
- ✓ Separation techniques included; Liquid Chromatography (LC), High Performance Liquid Chromatography (HPLC), Gas Chromatography (GC), Gas Chromatography/Mass Spectrometry (GC/MS), membrane separation...etc.
- ✓ Applications included but were not limited to petrochemical, pharmaceutical, food, and gases.

Physicochemical characterization of materials using Inverse Gas Chromatography (IGC)

- ✓ Both dispersive and specific properties of solids surface could be explored using IGC technique such as; The dispersive component of the surface energy (γ_S^D), Lewis acidity or Lewis basicity properties, Henry constants (K'), The adsorption enthalpy change (ΔH_{ads}), The standard free energy change of adsorption (ΔG_{ads}), The standard entropy change of adsorption (ΔS_{ads}), The acceptor constant (K_A), The donor constant (K_D), The Flory-Huggins parameter(χ)...etc.
- ✓ Various forms of materials could be considered using IGC such as; porous or solid, micro- or nano- size, crystalline or amorphous, fibers...etc.

• Research collaborations

02-2021 - current: Dichtel Research Group, Department of Chemistry. Northwestern University, IL, USA

"Developing Covalent Organic Frameworks (COFs) for separation applications"

Group supervisor; William Dichtel, Ph.D.

<u>12-2019 – current:</u> Advanced Membranes and Porous Materials Centre (AMPMC). Physical Sciences and Engineering Division, Functional Materials Design, Discovery and Development Research Group (FMD3), King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, KSA

"Developing Metal Organic Frameworks (MOFs) for separation applications"

Center Director; Mohamed Eddaoudi, Ph.D.

• Research projects participation

<u>1-2023 – current:</u> Principle Investigator (PI) Researchers Supporting Project no. 2022R429

"Developing new materials for separation science and related analytical techniques"

<u>1-2022 – 12-2022:</u> Principle Investigator (PI) Researchers Supporting Project no. 2022R429

"Developing new materials for separation science and related analytical techniques"

Funded by; The Distinguished Scientist Fellowship Program, Deanship of Scientific Research, KSU, KSA.

<u>4-2020 – current: Principle Investigator (PI)</u> Research Project no. 14-ADV2447-02

"Development of metal-organic framework-based materials as a composite stationary phase for chromatographic applications"

Funded by; The Science, Technology and Innovation Unit (STU), KACST, KSA.

4-2020 – current: Co- Principle Investigator (CO-PI) Research Project no. 2-17-01-001-0053

"Preparation and characterization of organic polymer based monolithic columns for capillary chromatography applications"

Funded by; The Science, Technology and Innovation Unit (STU), KACST, KSA.

<u>2-2020 – 2-2022:</u> Principle Investigator (PI) Research Group no. RG-312

"Separation science and related analytical techniques"

Funded by; The Research Group Program (RG), Deanship of Scientific Research, KSU, KSA.

2-2020 – current: Research Assistant Research Project no. DRI-KSU-572

"Design and synthesis of multifunctional microporous metal-organic framework materials for potential energy applications"

Funded by; The Deputyship for Research& Innovation, Ministry of Education, KSA.

<u>5-2016 – 4-2017:</u> Inventor US Patent registration US9624335B1

"Functionalizable monolithic platforms"

Funded by; Vice- Rectorate for Graduate Studies and Scientific Research Intellectual Property and Technology Licensing Program, KSU, KSA.

<u>4-2015 – 4-2017:</u> Ph.D. student Research Project no. ADV2120-02

"Preparation of Metal-organic frameworks (MOFs) from heterogeneously arranged building units with unique properties and applications in gas storage, gas separations, and catalysis"

Funded by; National Science, Technology and Innovation Plan (NPST), KACST, KSA.

<u>2-2010 – 2-2012</u>: Research Assistant Research Group Project no. RGP-VPP-130

"Protection effect of α -tocopherol and selenium against acute effects of malathion on rats"

Funded by; Deanship of Scientific Research, KSU, KSA.

<u>11-2007 – 10-2008:</u> Diploma student

"New low emissivity and long-lasting paint for cost effective solar collectors (TERMISOL)"

Funded by; European six frame program (FP6), Alexandria University, Alexandria, Egypt.

• Students' supervision

2020 - current: Ph.D. student Mr. Ali Alghamdi

"Synthesis and characterization of carbon/Schiff's bases functionalized composites for improving chromatographic separation of organic and chiral compounds"

2022 - current: MSc. student Ms. Saetah ALHarbi

"Energy efficient separation and purification of industrial mixtures via Mixed Matrix Membrane pervaporation"

2020 - current: MSc. student Ms. Khadra AL-Qahtani

"Effect of Gamma Irradiation on Structural, Porosity, Stability and Sorption Properties of Bimetallic MOFs"

2021/2022: Graduation project, Master of Environmental Science Mr. Salman ALQahtani

"Monitoring the environmental pollution of pesticides in their storage and use sites"

2019/2020: Graduation project Mr. Ahmed AL-Maqrahi

"Qualitative and quantitative analysis of commercial refrigerant samples using GC-MS"

2018/2019: Graduation project Mr. Khalid AL-Subaie

"Preparation and characterization of Hexyl methacrylate-based monolithic columns for gas chromatography applications"

2015/2016: Graduation project Mr. Khalid AL-Otaibi

"Qualitative and quantitative determination of D- and L- amino acids in dates and date products using GC.FID and GC.MS.MS."

• Publications

<u>Patents</u>

- 1. **K. Youssif** *, W. R. Dichtel*, A. Natraj, W. Ji, M. Ateia, Covalent Organic Frameworks for Gas Chromatographic Separations, U.S. patent Disclosure Accepted Review Complete, Disc-ID-22-07-08-001
- 2. **K. Youssif***, Z. ALOthman and A. El-Faham, Functionalizable monolithic platforms, U.S. patent 9624335 B1, Apr. 18, 2017.

<u>Reviews</u>

1. **K. Yusuf***, O. Shekhah, Z. ALOthman, M. Eddaoudi, Inverse pulse gas chromatography as a tool for the physicochemical characterization of metal-organic frameworks, Appl. Sci. 2021, 11(21), 10243

2. **K. Yusuf*,** A. Aqel and Z. Al-Othman, metal organic frameworks in chromatography, Journal of Chromatography A, 2014, 1348, 1.

Papers

- 1. **K. Yusuf***, O. Shekhah, S. Alharbi, A. Alghamdi, R. Aljohani, Z. ALOthman, M. Eddaoudi, A promising sensing platform for explosive markers: Zeolite-like metal-organic framework based monolithic composite as a case study, Journal of Chromatography A, 2023, 1707, 464326.
- A. Alghamdi, K. Yusuf, M. Habila, Z. ALOthman, Fabrication and Characterization of Sulfonated Carbon Materials and Chitosan-Derived Functioned Carbon via Schiff's BaseProcess for Separation Purposes, separations, 2023, 10, 475.
- 3. S. Thenmozhi, V. Gowri, K. S. Vinayaka, Ravindra Pratap Singh, V. M. Vel, **K. Yusuf**, Ahmed muteb Aljuwayid, Md Ataul Islam, Abdi Diriba, Bar Adsorbent Microextraction with Carbon-Based Sorbent Layers for the Identification of Pharmaceutic Substances, Adsorption Science & Technology, 2023, 6153630.
- 4. K. Kala, G. Anbuchezhiyan, K. Pingili, P. Singh, V. Vel, **K. Yusuf**, A. Aljuwayid, M. Islam, D. Christopher, Employing a carbon-based nanocomposite as a diffusive solid-phase extraction adsorbent for methamphetamine for therapeutic purposes, Adsorption Science & Technology, 2023, 8650678.
- K. Yusuf*, O. Shekhah, A. Aqel, S. Alharbi, A. Alghamdi, R. Aljohani, Z. ALOthman, M. Eddaoudi, Feasible ethylene separation from a ternary mixture using zeolite-like metal-organic framework@divinylbenzene composite monolith, Microporous and Mesoporous Materials, 2023, 357, 112630.
- K. Yusuf*, O. Shekhah, A. Aqel, S. Alharbi, A. Alghamdi, R. Aljohani, M. Eddaoudi, Z. ALOthman, A monolithic composite based on zeolite-like metal-organic framework@divinylbenzene polymer separates azeotropic fluorocarbon mixture efficiently, Journal of Chromatography A, 2023, 1694, 463922.
- K. Yusuf*, A. Natraj, K. Li, M. Ateia, Z.A. ALOthman, W. R. Dichtel*, Inverse Gas Chromatography Demonstrates the Crystallinity-Dependent Physicochemical Properties of Two Dimensional Covalent Organic Framework Stationary Phases, Chemistry of Materials, 2023, 35, 4, 1691–1701
- 8. A. Aqel, A. Ghfar, **K. Yusuf**, K. Alotaibi, R. Alafra'a, M. Habila, A. Badjah-Hadj-Ahmed, Z. ALOthman, Montmorillonite-based polymethacrylate composite monoliths as stationary phase materials for food and pharmaceutical analysis in capillary liquid and gas chromatography, Journal of Chromatography A, 2023, 1690, 463695.
- 9. A. Aqel, M. Obbed, A. Ghfar, **K. Yusuf**, A. Alsubhi, A. Badjah-Hadj-Ahmed, Naturally Occurring Montmorillonite-Based Polymer Monolith Composites as Stationary Phases for Capillary Liquid and Gas Chromatography, Separations, 2022, 9(12), 389
- A. Natraj, W. Ji, J. Xin, I. Castano, D. W. Burke, A. M. Evans, M. J. Strauss, M. Ateia, L. S. Hamachi, N. C. Gianneschi, Z.A. ALOthman, J. Sun*, K. Yusuf*, W. R. Dichtel*, Single-Crystalline Imine-Linked Two-Dimensional Covalent Organic Frameworks Separate Benzene and Cyclohexane Efficiently, Journal of the American Chemical Society, 2022, 144, 43, 19813–19824
- 11. I. Ali, R. Raja, S. Dilshad Alam, A. Kumar Jain, **K. Yusuf**, A. muteb Aljuwayid, M. Sillanpää, Rapid chiral separation of potential antibiotics using supercritical fluid chromatography, Chirality, 2022, 34, 10, 1383.
- 12. I. Ali, S. Dilshad Alam, R. Raja, V. Shirsath, A. K. Jain, **K. Yusuf**, A. muteb Aljuwayid, M. Sillanpää, Chiral separation of β-blockers by supercritical fluid chromatography using Chiralpak-IG and Chiralpak IBN-5 columns, Chirality, 2022, 34, 6, 848.
- 13. S. Sultana, A. Al Mamun, S. Aktar, S. Mahbub, **K. Yusuf**, A. Alothman, S. Wabaidur, S. Rana, Md. A. Islam, Md. A. Hoque, Impacts of polyols and temperature on the micellization, interaction and thermodynamics

behavior of the mixture of tetradecyltrimethylammonium bromide and polyvinyl alcohol, Zeitschrift für Physikalische Chemie, 2022, 236, 3, 3065.

- I. Ali, K. Sekkoum, N. Belboukhari, M. N. Rebizi, M. Zaid, K. Yusuf, A. Alothman, B. AlJumah, M. Ouladsmane, Determination of enantio-separation, absolute configuration and chiral recognition mechanism of ofloxacin and flumequine by HPLC and modeling studies, Journal of Chemical Technology & Biotechnology, 2021, 96 (10), 2901.
- M. S. Sheikh, N. Shafi, A. J. Khanam, K. Yusuf, A. Alothman, S. M. Wabaidur, Influence of hydrotrope on micellization behaviour of zwitterionic dimeric surfactants carrying ammonium and phosphodiester headgroups at different temperatures in aqueous medium, Journal of Molecular Liquids, 2021, 341, 116927.
- 16. T. Ahamad, Z. ALOthman, Mu. Naushad, K. Yusuf, Synthesis and Characterization of CuO doped lithium magnesium borate glasses for thermoluminescence dosimetry, Optik, 2021, 231, 166369.
- A. Aqel, S. Alzahrani, A. Al-Rifai, M. Alturkey, K. Yusuf, Zeid A. ALOthman, Ahmed-Yacine Badjah-Hadj-Ahmed, Determination of monoaromatic hydrocarbons in water samples by nano-liquid chromatography using a composite carbon nanotubes-lauryl polymethacrylate capillary monolithic column, Current Analytical Chemistry, 2020, 16, 3, 223.
- 18. **K. Yusuf*,** A. Aqel, A. Dyab, Z. Al-Othman, A. Badjah-Hadj-Ahmed, Effect of Sporopollenin Microparticles Incorporation into the Hexyl Methacrylate Based Monolithic Columns for Capillary Liquid Chromatography, Journal of Liquid Chromatography & Related Technologies, 2016, 39, 16, 752.
- A. Aqel, A. Dhabbah, K. Yusuf, N. AL-Harbi, Z. Al-Othman, A. Badjah-Hadj-Ahmed, Determination of Gasoline and Diesel Residues on Wool, Silk, Polyester and Cotton Materials by SPME–GC–MS, Journal of Analytical Chemistry, 2016, 71, 7, 730.
- K. Yusuf*, A. Badjah-Hadj-Ahmed, A. Aqel, Z. Al-Othman, Zeolitic imidazolate framework-methacrylate composite monolith characterization by inverse gas chromatography, Journal of Chromatography A, 2016, 1443, 233.
- 21. **K. Yusuf***, A. Badjah-Hadj-Ahmed, A. Aqel, Z. A. Al-Othman, Monolithic metal–organic framework MIL-53(Al)-polymethacrylate composite column for the reversed-phase capillary liquid chromatography separation of small aromatics, Journal of Separation Science, 2016, 39, 880
- 22. A. Aqel, K. Yusuf, Z. A. Al-Othman, A. Badjah-Hadj-Ahmed, Sporopollenin Microparticle-Based Monolithic Capillary Columns for Liquid Chromatography, Chromatographia, 2015, 78, 481.
- K. Yusuf*, A. Badjah-Hadj-Ahmed, A. Aqel, Z. A. Al-Othman, Fabrication of zeolitic imidazolate framework-8-methacrylatemonolith composite capillary columns for fast gas chromatographic separation of small molecules, Journal of Chromatography A, 2015, 1406, 299.
- 24. A. Aqel, Z. Al-Othman, **K. Yusuf**, A. Badjah-Hadj-Ahmed, A. Alwarthan, Preparation and Evaluation of Benzyl Methacrylate Monoliths for Capillary Chromatography, Journal of Chromatographic Science, 2014, 52, 201
- K. Yusuf*, A. Aqel, Z. Al-Othman, A. Badjah-Hadj-Ahmed, Preparation and characterization of alkyl methacrylate based monolithic columns for capillary gas chromatography applications, Journal of Chromatography A, 2013, 1301, 200.
- G. El-Desoky, S. Bashandy, I. Alhazza, Z. Al-Othman, M. Aboul-Soud, K. Yusuf, Improvement of Mercuric Chloride-Induced Testis Injuries and Sperm Quality Deteriorations by Spirulina platensis in Rats, PLOS ONE, 2013, 8, 3.

- 27. A. Aqel, **K. Yusuf**, Z. Al-Othman, A. Badjah-Hadj-Ahmed, A. Alwarthan, Effect of multi-walled carbon nanotubes incorporation into benzyl methacrylate monolithic columns in capillary liquid chromatography, Analyst, 2012, 137, 4309.
- 28. A. Al-Othman, Z. Al-Othman, G. El-Desoky, **K. Yusuf**, M. Aboul-Soud. Effect of malathion on plasmatic biochemical indices and lesions in the liver, Current Pharmaceutical Analysis, 2012, 8, 214.
- 29. G. El-Desoky, M. Abdelreheem, A. AL-Othman, Z. ALOthman, M. Mahmoud, **K. Yusuf**, Potential hepatoprotective effects of vitamin E and selenium on hepatotoxicity induced by malathion in rats, African Journal of Pharmacy and Pharmacology, 2012, 6, 806.
- 30. M. Aboul-Soud, A. Al-Othman, G. E. El-Desoky, Z. Al-Othman, K. Yusuf, J. Ahmad, A. Al-Khedhairy, Hepatoprotective effects of vitamin E-selenium against malathion-induced injuries on the antioxidant status and apoptosis-related gene expression in rats, Journal of Toxicological Sciences, 2011, 36, 285.
- A. Al-Othman, K. Al-Numair, G. El-Desoky, K. Yusuf, Z. Al Othman, M. Aboul-Soud, J. Giesy, Protection of αtocopherol and selenium against acute effects of malathion on liver and kidney of rats, African Journal of Pharmacy and Pharmacology, 2011, 5, 1054.

Book Chapters

- 1. **K. Yusuf**, A. Aqel, Ayman Abdel Ghfar, Z. ALOthman, UPLC-MS as an analytical tool for the determination of aflatoxins in food, In: Ultra Performance Liquid Chromatography Mass Spectrometry: Evaluation and Applications in Food Analysis, Taylor and Francis publisher, 2014.
- 2. A. Aqel, **K. Yusuf**, A. Al-Rifai, Z. ALOthman, Vitamins Analysis in Food by UPLC-MS, In: Ultra Performance Liquid Chromatography Mass Spectrometry: Evaluation and Applications in Food Analysis, Taylor and Francis publisher, 2014.

Book translation (English into Arabic)

1. Chromatography: Basic Principles, Sample Preparations and Related Methods, Lundanes, Elsa, Lon Reubsaet, Tyge Greibrokk, Wiley-Blackwell, 2014, translated by K. Yusuf, Z. ALOthman, 2019.

• Conferences

- 1. International conference and exhibition for science (ICES2023), February 6-8 (2023), Riyadh, Saudi Arabia. Workshop
 - a. International infrastructure of lab quality management system ISO/IEC 17025:2017
- 26th International symposium on separation sciences (ISSS 2022), June 28- July 1 (2022), Ljubljana, Slovenia. Oral presentation
 - a. Development of metal-organic framework based materials as a composite stationary phase for chromatographic applications
- 42nd International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2015), June 21-25 (2015), Geneva, Switzerland.
 Poster presentation,
 - a. Incorporation of sporopollenin microparticles to hexyl methacrylate monolithic columns in capillary liquid chromatography
- 41st International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2014), May 11-15 (2014), New Orleans, Louisiana, USA. Two posters presentation,
 - a. Using of sporopollenin microparticles to enhance the liquid chromatographic separation of ketonic molecules.

- *b.* Preparation of novel functional polymeric monoliths for specific capillary liquid chromatographic separations.
- 4th Postgraduate students conference of KSA universities, April 29- May 2 (2013), Macca, Saudi Arabia. Oral presentation,
 - a. Preparation and Characterization of Polymethacrylate Capillary Monolithic Columns for Applications in Gas Chromatography
- 39th International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC2013), June 16-20 (2013), Amsterdam, Netherlands.
 - Two posters presentation,
 - a. Incorporation of sporopollenin particles into polymethacrylate based monolithic capillary columns to be used as templates for HPLC separations.
 - b. Preparation, Characterization and Application of Methacrylate Monolithic Columns for Capillary Liquid Chromatography.
- 7th Singapore International Chemical Conference and 12th Asia-Pacific International Symposium on Capillary Electrophoresis and Microscale Separation and Analysis (SICC-7 and APCE 2012), December 16-19 (2012), Singapore.

Oral presentation,

- a. Development and Application of Methacrylate Monolithic Columns for Capillary Liquid Chromatography
- 14th International Union of Pure and applied Chemistry Conference on Polymers and Organic Chemistry (POC2012), January 6-9 (2012), Doha, Qatar.

Poster presentation,

- a. Incorporation of carbon nanotubes into organic polymer monolithic columns for capillary chromatography.
- 4th International Chemistry Conference, November 19-21 (2011), Riyadh, Kingdom of Saudi Arabia (KSA). Two posters presentation,
 - a. Preparation, Characterization and Application of Benzyl Methacrylate Capillary Monolithic Columns
 - b. Preparation, characterization and application of polyalkyl methacrylate monolithic columns in gas chromatography
- 1st Arab Emirates Conference on Pure and Applied Chemistry (ECPAC11), March 1-3, (2011), American University of Sharjah (AUS), Sharjah, United Arab Emirates (UAE). Two posters presentation,
 - a. Preparation, Characterization and Application of Alky Methacrylate Monolithic Columns for Capillary Chromatography.
 - b. Stearyl Methacrylate Monolithic Capillary Column Preparation, Characterization and Qualitative Analysis of Some Drugs.

TEACHING INTERESTS AND EXPERIENCES

• Teaching interest

General chemistry; General organic chemistry; Analytical chemistry; Separation science; Chromatography; Instrumental analysis; Spectroscopy.

• Teaching experience

Instrumental Training (497 CHEM), KSU (3 hrs. x 14 weeks) 09/2020 – 01/2021

Environmental Chemistry course (ENVS 512), KSU (3 hrs. x 14 weeks) 02/2020 – 06/2021

Basic Principles of Analytical Chemistry course (253 CHEM), KSU (2 hrs. x 14 weeks) 08/2019 – 12/2019; 01/2020 –05/2020; 08/2021 –12/2021; 12/2022 – 03/2023

Spectroscopic Techniques course (256 CHEM), KSU (3 hrs. x 14 weeks) 09/2016 -01/2017; 01/2019 - 05/2019; 08/2019 - 12/2019

Separation and Chromatographic Techniques course (451 CHEM), KSU (2 hrs. x 14 weeks) 09/2016 –01/2017; 02/2020 – 06/2021; 08/2021 – 12/2021 (practical class)

Graduation Project (499 CHEM), KSU (3 hrs. x 14 weeks) 01/2019 - 05/2019; 08/2019 - 12/2019; 02/2020 - 06/2021; 01/2022 - 05/2022

Fundamentals of Organic Chemistry course (106 CHEM), PSAU (4 hrs. x 14 weeks) 01/2017 –05/2017

Fundamentals Chemistry course (101 CHEM), KSU (4 hrs. x 14 weeks) 09/2015 - 05/2016; 09/2017 - 05/2018; 01/2019 - 05/2019; 09/2019 - 05/2020; 08/2021 - 12/2021; 01/2022 - 05/2022;

Statistical treatment of chemical data (455 CHEM), KSU (1 hrs. x 14 weeks) 01/2022 - 05/2022; 12/2022 - 03/2023; 03/2023 - 06/2023

Graduation Project (master of environmental science) (599 CHEM), KSU (3 hrs. x 14 weeks) 01/2022 – 05/2022

Electro-analytical methods (practical course) (353 CHEM), KSU (1 hrs. x 14 weeks) 12/2022 – 03/2023; 03/2023 – 06/2023

Environmental analysis (practical course) (457 CHEM), KSU (1 hrs. x 14 weeks) 12/2022 – 03/2023

SERVICES AND PROFESSIONAL ACTIVITIES

<u>8-2021 – current</u>; **Coordinator** of Lab Quality Management Training Program, Saudi Chemical Society (SCS), KSU.

<u>1-2020 – current;</u> Officer of Quality and development, Advanced Materials Research Chair (AMRC), KSU.

<u>1-2018 – 1-2021;</u> **Translator** of "Chromatography: Basic Principles, Sample Preparations and Related Methods, 2014" book from English into Arabic, project funded by Translation Center, KSU, KSA

2016 - current; Editorial board member of the Journal of Pharmaceutical and Analytical Chemistry

<u>2014 – current</u>; Journal Reviewer for the Journal of Chromatography A, Talanta, Journal of Separation Science and Journal of Liquid Chromatography & Related Technologies.

Trainer:

Chromatography

Annual Students HPLC fundamentals training course (30 hrs.) <u>2013 – current;</u> Organized by Saudi Chemical Society (SCS), KSA Annual GC and GC-MS-MS fundamentals training course (30 hrs.) 2010 - current; Organized by Saudi Chemical Society (SCS), KSA

Fire debris residues analysis using GC and GC-MS-MS training course (72 hrs.) <u>11/2013 - 5/2014;</u> Saudi Civil Force officers, KSA

Fundamentals of HPLC training of trainer's course (30 hrs.) 06/2017: Technical and Vocational Training Corporation, KSA

Fundamentals of GC training of trainer's course (30 hrs.) 06/2017; Technical and Vocational Training Corporation, KSA

Laboratory quality management

Basic Statistical Analysis for Testing Laboratories training course (12 hrs.) 02/2021; Saudi Chemical Society (SCS), KSA

Measurement Uncertainty in Chemical Analysis (as per ISO/IEC 17025:2017) training course (12 hrs.) 02/2021; Saudi Chemical Society (SCS), KSA

ISO:IEC 17025:2017 Laboratory Quality Management Awareness training course (12 hrs.) 01/2021; Saudi Chemical Society (SCS), KSA 03/2020; Saudi Chemical Society (SCS), KSA 12/2019; Advanced Materials Research Chair (AMRC), King Saud University (KSU), KSA 11/2019; Advanced Materials Research Chair (AMRC), King Saud University (KSU), KSA

Analytical Method Validation and its economic impact training course (3 hrs.) <u>10/2019</u>; Environmental Pollution Research chair, Princess Nourah bint Abdulrahman University, KSA <u>03/2019</u>; Saudi Chemical Society (SCS), KSA

Introduction to Laboratory Quality Management (ISO/IEC 17025:2017) training course (3 hrs.) <u>10/2019</u>; Environmental Pollution Research chair, Princess Nourah bint Abdulrahman University, KSA

Chemicals management: from Purchasing to waste disposal "Cradle-to-grave" training course (3 hrs.) <u>11/2017</u>; Technical and Vocational Training Corporation, KSA

Committee member:

4/2019- current: Member of the College of Science 17025:2017 implementation committee, KSU.

2/2019 – current: Member of the lab safety committee of the Chemistry department, College of Science, KSU.

<u>3/2019 – current:</u> Member of postgraduate accreditation committee, Chemistry department, KSU.

12/2019 - 12/2020: Member of the scientific committee to prepare a report on the research achievements of the College of Science, KSU.

<u>2/2017 – 5/2017</u>: Member of the foundation committee of Industrial Chemistry Major, Chemistry Department, College of Science, PSAU.

2015 – 8/2018: Member of the academic accreditation committee of Chemistry department, KSU.

<u>2016</u>: Organization member in the sixth international chemistry conference in Riyadh organized by Chemistry Department, College of Science, KSU.

<u>2011:</u> Organization member in the fourth international chemistry conference in Riyadh organized by Chemistry Department, College of Science, KSU.

CONTINUAL DEVELOPMENT

• Chemistry

TSQ (GC-MS/MS) Quantum Operation Training Course (40 hrs.) 4-7/9/2012; Thermo Scientific Training Institute, UK.

Workshops on Intellectual Property Protection (8 hrs.) 23-25/4/2012; King Saud University, KSA.

GC applications Training Course (30 hrs.) 20-24/3/2010; King Saud University, KSA.

Workshops on Chemical Safety (8 hrs.) 18-19/3/2010; Chemical Pollution Protection Committee, King Saud University, KSA.

HPLC applications Training Course (30 hrs.) 19-23/4/ 2009; King Saud University, KSA.

• Laboratory quality management

General strategy for Measurement Uncertainty in Testing and Calibration Labs (18 hrs.) 1-3/11/2022; Saudi Accreditation Committee (SAAC), KSA.

Risk Management and Risk Assessment as per ISO/IEC 31010:2019 (8 hrs.) 4/4/2021; Saudi Accreditation Committee (SAAC), KSA.

Method Validation & Measurement Uncertainty (15 hrs.) 1-3/3/2021; Deanship of skills development, KSU, KSA.

First meeting for SAAC assessors (ILAC new policies regarding Conformity Assessment Bodies) (8 hrs.) 16/2/2021; Saudi Accreditation Committee (SAAC), KSA.

ISO/IEC 19011:2018 new requirement (8 hrs.) 4/2/2021; Saudi Accreditation Committee (SAAC), KSA.

ISO/IEC 17025:2017 new requirement (8 hrs.) 3/2/2021; Saudi Accreditation Committee (SAAC), KSA.

Calculate Measurement Uncertainty in Chemistry (9 hrs.) 12/2020; ISObudgets, USA, Online course.

International standard ISO9001:2015(QMS) (10 hrs.) 4-5/3/2020; Deanship of skills development, KSU, KSA.

Types of International ISO standards (5 hrs.) 3/3/2020: Deanship of skills development, KSU, KSA.

PMP – PMBOK 6th Edition (40 hrs.) 01-30/11/2018; New Horizons, Alexandria, Egypt.

ISO 9001:2015 (10 hrs.) 17-20/08/2018; Egyptian Syndicate of Scientific Professions, Alexandria, Egypt.

ISO/IEC 17025:2017 (10 hrs.) 04-07/08/2018; Egyptian Syndicate of Scientific Professions, Alexandria, Egypt.

IRCA certified ISO/IEC 17025:2017 Lead Assessor training course (40 hrs.) + IRCA Exam

14-19/4/2018; BEMCON, Riyadh, KSA.

REFERENCES

Zeid ALOthman, Ph.D.

Dean of the College of Science, King Saud University, KSA Supervisor of Advanced Materials Research Chair (AMRC), King Saud University, KSA President of Saudi Chemical Society (SCS), King Saud University, KSA **E-mail:** <u>zaothman@ksu.edu.sa</u>

Mohamed Eddaoudi, Ph.D.

Discovery and Development Research Group (FMD3) Director, Advanced Membranes and Porous Materials Centre (AMPMC), King Abdullah University of Science and Technology (KAUST), KSA **E-mail:** <u>mohamed.eddaoudi @kaust.edu.sa</u>

William Dichtel, Ph.D.

Robert L. Letsinger Professor of Chemistry Department of Chemistry. Northwestern University, IL, USA **E-mail:** <u>wdichtel@northwestern.edu</u>

Osama Shekhah, Ph.D.

Group Leader, Advanced Membranes and Porous Materials Centre (AMPMC), King Abdullah University of Science and Technology (KAUST), KSA E-mail: <u>Osama.shekhah@kaust.edu.sa</u>

Mohamed Ateia, Ph.D.

Group Leader, US Environmental Protection Agency (US EPA), Ohio, USA E-mail: <u>ibrahim.mohamed@epa.gov</u>

Ayman El-Faham, Ph.D.

Professor of Organic chemistry, College of Science, Alexandria University, Egypt **E-mail:** <u>Aymanel faham@hotmail.com</u>