CURRICLUM VITAE

Samar Damiati, PhD

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Research Interest

Synthetic Biology, Biomimetic Model Membranes, Bio-inspired Materials, Nanobiotechnology, Biomimetic sensors, Detection Sensors, Lab-on-a-Chip and Microfluidics.

Academic Qualifications

2013	**Doctor of Philosophy, NanoBiotechnology** Institute for Synthetic Bioarchitectures, Department of Nanobiotechnology, University of Natural Resources and Life Sciences (BOKU), Vienna, Austria
2007	**Master of Science, Biochemistry** Biochemistry Department, Faculty of Science, King Abdullaziz University, Jeddah, Saudi Arabia
2004	**Bachelor of Science, Biochemistry** Biochemistry Department, Faculty of Science, King Abdullaziz University, Jeddah, Saudi Arabia

Employment History

2022 - present	**Associate Professor** Department of Chemistry, Sciences, University of Sharjah, Sharjah, UAE
2019 – 2020	**Invited Researcher** Division of Nanobiotechnology, Department of Protein Science, Science for Life Laboratory, School of Engineering Sciences in Chemistry, Biotechnology and Health, KTH Royal Institute of Technology, Stockholm, Sweden
2018 - 2021	**Associate Professor** Department of Biochemistry, Faculty of Science, KAU, Jeddah, Saudi Arabia
2014 - 2018	**Assistant Professor** Department of Biochemistry, Faculty of Science, KAU, Jeddah, Saudi Arabia

Editorial Activities

2022 - 2024	**Associate Editor** Research Topic: Insights in Micro- and Nano-fluidics Journal: Frontiers in Lab on a Chip Technologies - Micro- and Nano-fluidics
2022 - 2023	**Associate Editor**

	Research Topic: The Future of Lab on a Chip Technologies: An Early Career Scientists' Perspective Journal: Frontiers in Lab on a Chip Technologies - Imaging and Detection
2020 – 2023	**Guest Associate Editor** in Molecular Diagnostics and Therapeutics (Vol. I and II) Journal: Frontiers in Molecular Biosciences Research Topic: The Dual-Use Dilemma for Biomimicry

Scientific Memberships

2024 - present	Member of the UAE Research Map
2024 - present	Member of the Royal Society of Chemistry
2021 - present	Member of the IEEE
2020 - present	Member of the European Synthetic Biology Society (EUSynBioS)
2018 - 2021	Member of the Organ-an-a-Chip Technologies Network
2018 - 2022	Member of the European Association for Cancer Research
2014 – present	BOKU Vienna Alumni Association
2011 - present	Member of Austrian Association of Molecular Life Sciences and Biotechnology (ÖGMBT)

Patents

- Zamzami M, Choudhry H, **Damiati S**, Peacock M. (2021) Blood analysis cartridge (US20210308674A1). US Patent App. US17/351,492, 2021.

Book Chapters

- **Damiati S.** (2024) Polymers in sensory and lab-on-a-chip devices. In: Vallejos S, Trigo M, Garcia JM. (eds) Sensory Polymers: From their Design to Practical Applications. ELSEVIER. (Publication Date: 01-Aug-24)
- Damiati LA, Damiati SA, **Damiati S.** (2022) Developments in the use of Microfluidics in Synthetic Biology. In: Singh V, New Frontiers and Applications of Synthetic Biology. Elsevier.
- **Damiati S.** (2020) Acoustic Biosensors for Cell Research. In: Thouand G. (eds) Handbook of Cell Biosensors. Springer, Cham.
- **Damiati S.** (2018) Can We Rebuild the Cell Membrane?. In: Artmann G, Artmann A, Zhubanova A, Digel I. (eds) Biological, Physical and Technical Basics of Cell Engineering. Springer, Singapore

Selected Publications

- Al-Attar H, Damiati LA, Keshel SH, Tuinea-Bobe C, **Damiati S**, Saeinasab M and Sefat F (2024) Effect of TGF-β3 on wound healing of bone cell monolayer in static and hydrodynamic shear stress conditions. *Front. Med.* 11:1328466.
- AlMashrea BA, Almehdi AM and **Damiati S**. Simple microfluidic devices for in situ detection of water contamination: a state-of-art review. Front. Bioeng. Biotechnol, **2024**, 12:1355768.
- Damiati LA, Denetiu I, Bahlas S, **Damiati S**, Pushparaj PN. Immunoprofiling of cytokines, chemokines, and growth factors in female patients with systemic lupus erythematosus for personalized medicine – A pilot study. BMC Immunology, **2023**, 24, 13.
- **Damiati S**, Awan S.A., Peacock M, Schuster B. Functionalization of Graphene Oxide for Label-Free Electro-chemical Detection of Hepatic Cancer Cells. Eng. Proc. **2023**, 35, 15
- Damiati LA, El-Yaagoubi M, Damiati SA, Kodzius R, Sefat F, **Damiati S**. Role of Polymers in Microfluidic Devices. Polymers. **2022**; 14(23):5132.
- **Damiati S,** Mhanna R, Awan SA, Kodzius R and Schuster B. Editorial: The Dual-Use Dilemma for Biomimicry. Front. Mol. Biosci. **2022**, 9:915663.
- **Damiati S,** Søpstad S, Peacock M, Saleem A, Pinto I, Soares R, Russom A. Flex printed circuit board implemented Graphene-based DNA sensor for detection of SARS-CoV-2. *IEEE Sens J*. **2021**
- Damiati SA, **Damiati S.** Microfluidic Synthesis of Indomethacin-loaded PLGA Microparticles Optimized by Machine Learning. *Front. Mol. Biosci*. **2021**. 8:677547.
- Zayni S, **Damiati S**, Moreno-Flores S, Amman F, Hofacker I, Jin D, Sinner EK. Enhancing the cell-free expression of native membrane proteins by *in-silico* optimization of the coding sequence - an experimental study of the human voltage-dependent anion channel. *Membranes* **2021**,11(10),741
- Bungon T, Haslam C, **Damiati S**, O'Driscoll B, Whitley T, Davey P, Siligardi G, Charmet J, Awan S.A. Graphene FET sensors for Alzheimer's disease protein biomarker Clusterin detection. *Front. Mol. Biosci*. **2021,** 8:651232.
- Budreviciute A*, **Damiati S***, Sabir DK, Onder K, Schuller-Goetzburg P, Plakys G, Katileviciute A, Khoja S, Kodzius R. Management and Prevention Strategies for Non-Communicable Diseases (NCDs) and their Risk Factors. *Front. Public Health* **2020**, *8:574111.*
- Damiati SA, Rossi D, Joensson HN, **Damiati S.** Artificial intelligence application for rapid fabrication of size-tunable PLGA microparticles in microfluidics. *Sci Rep* **2020,** 10, 19517.
- **Damiati S.** In situ microfluidic preparation and solidification of alginate microgels. *Macromol Res* **2020,** 28
- **Damiati S,** Schuster B. Electrochemical biosensors based on S-layer proteins. *Sensors* **2020**, 20(6), 1721.
- **Damiati S**, Hersman C, Søpstad S, Peacock M, Whitley T, Davey P, Awan SA. Sensitivity comparison of macro- and micro-electrochemical biosensors for human chorionic gonadotropin (hCG) biomarker detection. *IEEE Access* **2019**, 7,94048-94058

- **Damiati S**. New Opportunities for creating man-made bioarchitectures utilizing microfluidics. *Biomed Microdev* **2019**, 21,62
- **Damiati S**, Scheberl A, Zayni S, Damiati SA, Schuster B, Kompella UK. Albumin-bound nanodiscs as delivery vehicle candidates: development and characterization. *Biophy Chem* **2019**, 251, 106178.
- **Damiati S**. A Pilot Study to Assess Kidney Functions and Toxic Dimethyl-arginines as Risk Biomarkers in Women with Low Vitamin D Levels. *Journal of Medical Biochemistry* **2019**, *38: 1–8.*
- Saliba J, Daou A, **Damiati S,** Saliba J, Marwan Sabban M, Mhana R. Development of microplatforms to mimic the in vivo architecture of CNS and PNS physiology and their diseases. *Genes* **2018,** 9,285.
- **Damiati S**, Peacock M, Mhana R, Søpstad S, Sleytr U.B, Schuster B. Bioinspired Detection Sensor Based on Functional Nanostructures of S-Proteins to Target the Folate Receptors in Breast Cancer Cells. *Sensors and Actuators B* **2018**, 267, 224-230.
- **Damiati S**, Mhana R, Kodzius R, Sinner EK. Cell-Free Approaches in Synthetic Biology utilizing Microfluidics. *Genes* **2018**, 9(3), 144.
- **Damiati S**, Kompella, UK, Damiati SA, Kodzius R. Microfluidic Devices for Drug Delivery Systems and Drug Screening. *Genes* **2018**, 9(2),103.
- **Damiati S**, Peacock M, Leonhardt S, Baghdadi MA, Damiati L, Becker H, Kodzius R, Schuster B. Embedded Disposable Functionalized Electrochemical Biosensor with a 3D-Printed Flow-Cell for Detection of Hepatic Oval Cells. *Genes* **2018**, 9(2), 89.
- Islam K*, **Damiati S***, Sethi J, Suhail A, Pan G. Development of a Label-Free Immunosensor for Clusterin Detection as an Alzheimer's Biomarker. *Sensors* **2018**, *18*(1), 308
- Haslam C, **Damiati S**, Whitley T, Davey P, Ifeachor E, Awan S.A. Label-Free Sensors Based on Graphene Field-Effect Transistors for the Detection of Human Chorionic Gonadotropin Cancer Risk Biomarker. *Diagnostics* **2018**; *8*(1), 5.
- Schulze F, Gao X, Virzonis D, **Damiati S**, Schneider M.R., Kodzius R. Air Quality Effects on Human Health and Approaches for Its Assessment through Microfluidic Chips. *Genes.* 2017, 8, 244.
- **Damiati S**, Küpcü S, Peacock M, Eilenberger C, et al. Acoustic and Hybrid 3D-Printed Electrochemical Biosensors for the Real-Time Immunodetection of Liver Cancer Cells (HepG2). *Biosensors and Bioelectronics* **2017**, 94, 500–506
- **Damiati S**, Zayni S, Schrems A, Kiene E, Sleytr UB, Chopineau J, Schuster B, Sinner, E.K. Inspired and Stabilized by Nature: Ribosomal Synthesis of the Human Voltage Gated Ion Channel (VDAC) into 2D-Protein-Tethered Lipid Interfaces. *Biomaterials Science* **2015**, 3, 1406-1413.
- **Damiati S**, Schrems A, Sinner E, Sleytr UB, Schuster B. Probing peptide and protein insertion in a biomimetic S-layer supported lipid membranes platform. *International Journal of Molecular Sciences* **2015**, 16, 2824-2838 ***(Selected as Journal Cover).***

- Schrems A, Larisch V, Dutter K, Stanetty C, **Damiati S**, Sleytr UB, Schuster B. Triggered liposome fusion on proteinaceous S-layer lattices via europium-complex formation. *Soft Matter* **2011**, 7(12): 5514-5518.

Selected Oral / Poster Presentations in Academic Meetings

- **Oral Presentation: Damiati S**. Electrochemical Biosensor Based on Graphene–Folic Acid Nanobiocomposite for Detecting Overexpressed Folate Receptor in Breast Cancer Cells. The 4th International Electronic Conference on Biosensors; May 20–22, 2024; Online.
- **Poster Presentation:** AlMashrea BA, Alrashdi M, Dek Al-Bab N, Al-Farooq M, Abdalla H, Al Taqaz K, Turky A, Almehdi AM, **Damiati S**. A Simple Paper-Based Microfluidic Device for Rapid Detection of Inorganic Chemicals. The 4th International Electronic Conference on Biosensors; May 20–22, 2024; Online.
- **Poster Presentation: Damiati S,** AlMashrea BA, Hamadeh S, Alrashdi M, Damiati SA. Combining microfluidic technology and artificial intelligence to generate monodisperse O/W emulsions. EMBL Symposium: AI and Biology; March 12-15, 2024; Heidelberg, Germany.
- **Workshop: Damiati S**, Almehdi AM, Turky A, AlMashrea BA. Detecting Contaminants in Water Samples Using Microfluidic Chips and Mobile Camera. University of Sharjah Innovation Week 2024; February 15-21, 2024; Sharjah, UAE. https://www.aletihad.ae/amp/news/الإمارات/4464055/ابتكارات-خلاقة-لطلبة-جامعة-الشارقة-ضمن--الإمارات-تبتكر
- **Workshop: Damiati S,** Turky A, Almehdi AM, Dek Al-Bab N, Al-Farooq M, Abdalla H, Al Taqaz K, Ahmed M, AlMashrea BA, Alrashdi M. Naked-eye Detection of Ions in Water using Paper-Based Microfluidics and Artificial Intelligence. COP28; December 10, 2023; Dubai, UAE.
- **Poster Presentation:** Al Mashrea B.A. and **Damiati S**. On-Site Detection of Ammonia-Contaminated Water Based on Microfluidic Chip. 16th Annual Lab-on-a-Chip & Microfluidics World Congress. Laguna Hills, California, USA. November 28-30, 2023
- **Invited Speaker: Damiati S.** Building an artificial cell membrane from scratch. An Intelligent Infusions Masterclass by Cube Biotech, Germany. August 24, 2023. Online. https://cube-biotech.com/iim-0823-samardamiati-artificialcellmembranes
- **Oral Presentation: Damiati S.** Assembling Natural Puzzle Pieces to Build Efficient Cell Biosensors. Single-Molecule Sensors and NanoSystems International Conference 2020. Barcelona, Spain. 2020
- **Poster Presentation: Damiati S.** Scheberl A, Zayni S, Damiati SA, Schuster B, Kompella UK. Does Fluorescent Labeling of a Model Therapeutic Protein Affect the Properties of Lipoprotein Nanodiscs? 10th Symposium on Pharmaceutical Profiling in Drug Discovery and Development. Uppsala, Sweden. January 30, 2020
- **Poster Presentation: Damiati S**. Zayni S, Sleytr UB, Chopineau J, Ehmoser EK**,** Schuster B. Monitoring Protein Channel Activity by Acoustic Technology. Life Science Technology (LST) Day 2019. Stockholm, Sweden. December 11, 2019

- **Poster Presentation: Damiati S**. Zayni S, Sleytr UB, Chopineau J, Ehmoser EK**,** Schuster B. Acoustic Biomimetic Membrane Biosensors for Monitoring Protein Channel Activity. Biomembrane Days 2019. Berlin, Germany. December 11-13, 2019
- **Poster Presentation: Damiati S.** Peacock M, Mhana R, Søpstad S, Sleytr UB, Schuster B. Modifying Biomaterials as Alternative Antibody Scaffold to Detect Breast Cancer Cells. 5th European Congress of Applied Biotechnology (ECAB 5). Florence, Italy. September 15-19, 2019
- **Guest Speaker: Damiati S**. Biomimetic and Detection Biosensors. KTH Royal Institute of Technology. Stockholm, Sweden, May 27, 2019
- **Flash Talk Presentation: Damiati S**, Zayni S, Sleytr UB, Chopineau J, Schuster B, Ehmoser EK. From DNA to Protein to Synthetic Membrane: A Lipid-Based Sensor Model. EMBL Symposium: Synthetic Morphogenesis: From Gene Circuits to Tissue Architecture. Heidelberg, Germany. March 17-20, 2019
- **Poster Presentation: Damiati S,** Haslam C, Awan SA, Kodzius R, Sleytr UB, Schuster B. Natural Nanomaterials as Building Blocks to Design Biosensors. KAUST Research Conference in Biosensors and Bioelectronics. King Abdullah University of Science and Technology (KAUST) Thuwal, SA. February 25-27, 2019
- **Poster Presentation:** Haslam C, **Damiati S**, Whitley T, Davey P, Ifeachor E, Awan SA. Graphene FET immunosensors for label-free detection of Human Chorionic Gonadotropin Cancer Risk Biomarker. Graphene Week 2018. San Sebastian, Spain. September 10-14, 2018.
- **Oral Presentation: Damiati S,** Haslam C, Kodzius R, Awan SA, Schuster B. Exploiting Natural Nanomaterials in Biosensor Technology. 11th International conference on Advanced Nanomaterials. Aveiro, Portugal. July 18-20, 2018
- **Poster Presentation: Damiati S**, Haslam C, Peacock M, Awan SA. A Modified Electrochemical Biosensor for Sensitive Detection of Human Chorionic Gonadotropin (hCG) Biomarker. 25TH Biennial Congress of the European Association for Cancer Research (EACR). Amsterdam, Netherland. June 30 – July 3, 2018
- **Oral Presentation: Damiati S.** Cancer Biomarkers in Biosensors Fabrication for Diagnostic Purposes. International Conference on Biomarker Research in Clinical medicine. Paris, France. February 19-21, 2018