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**Interdisciplinary Scientific Researcher, skilled in Supramolecular Chemistry and Environmental Technology and an experienced University Lecturer in Biochemistry and Chemistry Modules.**

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### **CORE SKILLS**

Supramolecular Chemistry | Electrochemistry | Scanning Electron Microscope | Analytical Chemistry | Microbiology | Environmental Science | NMR Spectroscopy | Grant Applications | Analytical Research | Publications | University Teaching | IT Literacy | Bi-lingual | Strong Communication | Team Collaboration | Self-Directed Learning.

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### **CAREER SUMMARY**

- **February 2021-date; Beirut Arab University**  
**Full time Assistant Professor of Biophysical Chemistry**
  - **Teaching and Coordination of the following courses:**
    - Principles of Chemistry, CHEM241
    - Chemical Kinetics, CHEM343
    - Physical Chemistry, CHEM333
    - Advanced Physical Biochemistry, BCHM620
    - Clinical Biochemistry, BCHM432
    - Metabolic Biochemistry, BCHM336
    - Biochemistry, BCHM331
    - Biochemical Principles of Nutrition, BCHM445
    - Bioinformatics, BIOL451
    - Biology I: BIOL231
    - General Biology, BIOL121
    - Immunology, BIOL236
    - Human Physiology, BIOL337.
    - Developmental Biology, BIOL433
    - Environmental Studies, BIOL453
    - Ecology, BIOL432
  - Carrying out departmental duties such as, advising, grant application and supervising PhD, MSc and senior students.
  
- **June 2018- date; University of Surrey, Guildford-United Kingdom.**  
**Visiting Research Fellow in the School of Chemical Engineering and Chemistry.**
  - Designed and synthesized a chromogenic macrocyclic probe configured to sense and/or capture carbon dioxide.
  - Investigating the anticancer activity of calix[4]arene derivatives on colorectal cancer cell line Caco-2 using Biophysical methods.
  
- **September 2017-June 2020; Lebanese American University, Beirut-Lebanon.**

### **Part-time Assistant Professor in Natural Sciences Department**

- Teaching Environmental Sciences and Sustainability Module.
- Teaching Organic Chemistry I (CHM313) and Introduction to Chemistry (CHM101) Modules.
- Carrying out other teaching duties that include, examining, tutoring, field work, organizing seminars and e-learning.
- **April 2016-June 2017; University of Surrey, Guildford-United Kingdom.**

### **Teaching Assistant in Chemistry and Bio-sciences Departments**

- Teaching and marking the following practical modules:
  - CHE2030, Intermediate Analytical Chemistry module
  - CHE2025, Intermediate Physical Chemistry module
  - BMS1032, Human Physiology module
- **March 2009-June 2012 Lebanese American University; Beirut-Lebanon.**

### **Part-time Laboratory Instructor in Natural Science Department**

- Coordination, manual and syllabi preparation, teaching, tutoring, examining the following practical modules: Microbiology 312, General Biology 201, General Biology 202 and General Biology 101, Ecology 331, and Food Microbiology NUT 378.
- Co-supervised senior biology students in their projects.
- **March 2010- September 2010; Lebanese International University, Beirut-Lebanon.**

### **Part-time Laboratory Instructor in Biomedical Science Department**

- Coordination, syllabus preparation, teaching, examining the following practical modules: General Biology, Microbiology and Plant Physiology.
- **October 2008 –January 2012; Beirut Arab University, Beirut-Lebanon.**

### **Part-time Laboratory Instructor**

- Coordination, syllabus and manual preparation, teaching, examining the following practical modules; Diagnostic Microbiology, General Microbiology, Food Microbiology, Applied Microbiology, Botany I, Botany II, Parasitology, Plant Physiology, Mycology and Plant Ecology (1st to 4th year biology), Medical Microbiology (Nursing) and Oral Microbiology (1st year and Masters Dentistry).

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### **ACADEMIC CREDENTIALS**

- **PhD specialized in Biophysical Chemistry**, Date of Award, 29 September 2017  
University of Surrey (Guildford, United Kingdom), Faculty of Engineering and Physical Sciences, Department of Chemical Engineering and Chemistry.  
*Thesis title: Calix-Macrocycles: From synthesis and physico-chemical properties to analytical and biological applications.*
- **Master of Science in Biology specialized in Environmental Microbiology**, Date of Award, 6 June 2008  
Beirut Arab University (Beirut, Lebanon), Faculty of Science, Department of Biology and Environmental Science.  
*Thesis title: Bioaccumulation of heavy metals by microorganisms and its application in Lebanon Environment.*

- **Bachelor of Science in Biology and Environmental Science**, Date of Award, June 2005  
Beirut Arab University (Beirut, Lebanon), Faculty of Science, Department of Biology and Environmental Science.
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## CERTIFICATIONS

- **Certified Master Trainer in Educational Technology for the Intel Teach to the Future Essentials Course**, Date of Award, September 2006.  
Intel® Education Teaching Tools and Resources, United States.
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## ACADEMIC HONORS AND AWARDS

- **Honorable award** from GIST Global Innovation through Science and Technology, December 2011.
  - **Travel Grant** from Beirut Arab University and EMUNI University, June 2010.
  - **International BioVision Next Fellowship** awarded from the BIOVISION, March 2009.
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## PATENT

**Title of the invention:** *Azocalixarene Probe and its Use for Detecting Carbon Dioxide*

**Inventors:** Prof. Angela F. Danil de Namor and **Dr. Nawal El Hakawati**

Filing Date: October 27, 2020.

US Application Number: 17/050,915.

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## MEMBERSHIP OF PROFESSIONAL BODIES

- University of Surrey Alumni
  - Member of Lebanon Climate Act.
  - Member of Lebanese Graduates British Universities
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## RESEARCH STUDENTS SUPERVISED/TRAINED

- Co-Supervising two PhD students in the field of Environmental Microbiology from Beirut Arab University in the following two projects; October 2018-February 2021
  1. *Characterization and Bioremediation Potential of Halophilic Bacteria Isolated from Lebanese Habitats*
  2. *Bioremediation and Biotechnological Applications of Alkaliphilic Bacterial Isolates*
- Mentoring a master's student from the Chemical Engineering Department at the University of Surrey in the following project: *Synthesis and characterization of functionalized pyrogallol[4]arene for the removal of pharmaceuticals from water*; October 2016-August 2017.
- Co-supervised three biology students at the Lebanese American University in their Senior Project; Research title: *Antibiotic-Assembled Silver Nanoparticles and their application on ESBL Bacteria*; Fall and Spring semesters of 2011.
- Co-supervised three biology students in their senior research at the Lebanese American University; Research title: *Antibiotic-Assembled Gold Nanoparticles: New Trend for the Development of Anti-ESBL Escherichia coli*; Fall and Spring semesters of 2012.

- Co-supervised a team of three senior biology students at Lebanese American University in *Silver Nanoparticles for milk and food preservation* project in Global Innovation through Science and Technology (GIST) competition; 2011.
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## SELECTED PUBLICATIONS

### Selected Journal Papers

- Israa Assaf, **Nawal Al Hakawati**, Jamilah Borjac, In-Silico Study of Lebanese Herbal Compounds against Carbapenem-Resistant *Acinetobacter baumannii* Proteins, *Informatics in Medicine Unlocked*, **2023**, Accepted.
- Angela F Danil de Namor **and Nawal Al Hakawati**, Anion Complexation by an Azocalix[4]arene Derivative and the Scope of Its Fluoride Complex Salt to Capture CO<sub>2</sub> from the Air, *Molecules*, **2023**, 28 (16), 6029.
- Angela F Danil de Namor, Alexandros Cambanis, **Nawal Al Hakawati**, Rasha Khalife, From Solution Studies of Pharmaceuticals (Aspirin and Related Compounds) to the Thermodynamics of Aspirin- $\beta$ -Cyclodextrin Interaction in water and N, N-Dimethylformamide, *International Journal of Molecular Sciences*, **2022**, 23(19), 11750.
- Angela F Danil de Namor, **Nawal Al Hakawati**, Sami Y Farhat, Targeting Colorectal Cancer Cells with a Functionalised Calix[4]arene Receptor: Biophysical Studies, *Molecules*, **2022**, 27(2), 510.
- Angela F Danil de Namor, Maan Al Nuaim, Gerard Fairclough, Rasha Khalife, **Nawal Al Hakawati**, Amine modified silica for removing aspirin from water, *Journal of Environmental Science and Technology*, **2021**, <https://doi.org/10.1007/s13762-021-03417-9>.
- **Nawal Al Hakawati**, Salman Alharthi, Angela F Danil de Namor, Thermodynamics, a Suitable Reporter in the Design of Mercury (II) Ion Selective Electrodes, *Journal of Chemistry*, **2020**, 13(12), 8671-8683.
- Angela F Danil de Namor, Salman Alharthi, Brendan Howlin and **Nawal Al Hakawati**, A selective and easily recyclable dimer based on a calix[4]pyrrole derivative for the removal of mercury (II) from water, *RSC Advances*, **2019**, 10, 3060-3071.
- Jinane K Chaaban, **Nawal Al Hakawati**, Brendan Howlin, Rachida Bance-Soualhi, Angela F Danil de Namor, An Asymmetric N-rim Partially Substituted Calix[4]pyrrole: its Affinity for Ag(I) and its Destruction by Hg(II), *Arabian Journal of Chemistry*, **2019**, 13, 4824-4834.
- Angela F. Danil de Namor, Salman Alharthi, Abdel Aziz El Gamouz, **Nawal Al Hakawati** and Brian G. Cox, Calix[4] Based Hg(II) Ion Selective Electrodes: A Thermodynamic Protocol to Address the Selectivity versus the Hosting Capacity Paradigm in the Selection of the Carrier, *Journal of Electrochemica Acta*, **2018**, 290, 686-694.
- Angela. F. Danil de Namor, Weam Abou Hamdan, Oliver Webb, Rachida Soualhi, Brendan Howlin and **Nawal Al Hakawati**, Calix[4]arene urea derivatives: the pathway from fundamental studies to the selective removal of fluorides and phosphates from water, *Journal of Hazardous Materials*, **2018**, DOI: 10.1016/j.jhazmat.2018.07.025.

- Rasha Khalife, Jinane Chaaban, **Nawal Al Hakawati** and Angela F. Danil de Namor, The Removal of Phosphate and Arsenate from Aqueous Solution using Silica Based Materials, *International Journal of Green Technology*, **2018**, 4, 29-37.
- Angela F. Danil de Namor, **Nawal Al Hakawati**, Weam Abou Hamdan, Rachida Soualhi, Samira Korfali, Liliana Valiente, Calix[4]pyrrole for the removal of arsenic (III) and arsenic (V) from water, *Journal of Hazardous Materials*, **2017**, 326, 61-68.
- Angela F. Danil de Namor, Abdelaziz El Gamouz, Salman\_Alharthi, **Nawal Al Hakawati** and John R. Varcoe, A ditopic calix[4]pyrrole amide derivative: highlighting the importance of fundamental studies and the use of NaPh<sub>4</sub>B as additive in the design and applications of mercury(II) ion selective electrodes, *Journal of Materials Chemistry A*, **2015**, 3, 13016-13030.

### **Selected Conferences Papers**

- Narmin Zmorrod, Hoda Yusef and **Nawal Al Hakawati**, Isolation and Characterization of Lead Tolerant Alkaliphilic Bacteria from Tannery Wastewaters, LAAS First Italian Lebanese Day, **2019**, Beirut, Lebanon.
- **Nawal Al Hakawati** and Angela Danil de Namor, Supramolecular Chemistry: From Fundamental Studies to the Applications, Festival of Research, **2016**, Guildford, United Kingdom.
- Angela Danil de Namor, Weam Abou Hamadan, Oliver Webb, **Nawal Al Hakawati**, Samira Korfali and Liliana Valiente, From Modified Naturally Occurring Materials to The Design of Novel Receptors For The Removal of Arsenic From Water, 5<sup>th</sup> International Congress on Arsenic in the Environment, Buenos Aires, Argentina, **2014**.
- Samira Korfali, **Nawal Al Hakawati** and Wissam Khadra, Evaluation of Metals and their Potential Hazard in the Awali River Surface Sediments, SEG2014, Newcastle, England, **2014**.
- **Nawal Al Hakawati** and Zakia Olama, Environmental Conditions Affecting the Single Cell Protein Production from Yeast Using Whey, International Conference on Research Trends in Food Safety and Security: Science, Technology and Policy, Lebanese American University, Beirut, Lebanon, **2011**.
- **Nawal Al Hakawati**, Iman Taleb, Zakia Olama and Hanafy Holail, Bioremediation of Heavy Metals and Crude Oil by Microorganisms, ReSouk 2010, EMUNI Student Research Multi-Conference, Alexandria-Egypt, **2010**.
- **Nawal Al Hakawati**, Zakia Olama and Hanafy Holail, Biovision Forum: The World Life Sciences Forum, Lyon-France, **2009**.  
Selected as a BioVision Next Fellow.

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**REFERENCES ARE AVAILABLE UPON REQUEST**