

Abdelhamid Khodja

American University of Sharjah, Sharjah, UAE

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EDUCATION

B.S. in Biology

2020-2024

American University of Sharjah (AUS), Sharjah, UAE

- Expected Graduation: 2024
- GPA: 3.83/4.00 (Honors: *Magna Cum Laude*)
- Academic interests: pharmacology, molecular biology, drug design, computational biology, and computational chemistry.
 - Simulation & Modelling Work: <https://t.ly/JHs9>
- Research Projects: Antibacterial Nanoparticle Cellulose Fabrics for Self-Disinfection & Hybrid Antimicrobial Composites.

AWARDS AND HONORS

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| • AUS Class of Spring 2024 Valedictorian | Spring 2024 |
| • Outstanding Graduating Student Award | Spring 2024 |
| • College of Arts and Science Spring 2024 Ambassador | Spring 2024 |
| • Chancellors List Scholarship, AUS | Fall 2023-Spring 2024 |
| • Short Listed for Sheikh Khalifa Scholarship, AUS | Spring 2023 |
| • Du Endowed Scholarship, AUS | 2022-2024 |
| • Dean's List Scholarship, AUS | Spring 2022-2024 |
| • Alpha Lambda Delta Honor Society, AUS | 2021 |
| • Financial Grant Award, AUS | 2020-2024 |
| • Outstanding Student Scholarship, AUS | 2020-2024 |

GRANTS

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| • College of Arts and Sciences Undergraduate Research Grant | Spring 2024 |
| • QUWA Research & Innovation Grant | Fall 2023 |
| • College of Arts and Sciences Undergraduate Research Grant | Spring 2023 |

PUBLICATIONS

1. Makhoul, Z., Khan, D., Terro, T., **Khodja, A.**, *et al.* Introducing antimicrobial activity into cellulose fibers using carbon dots: A step towards self-disinfecting fabric. *ACS Regional MEA Conference* (2024)
2. Siddiqui, R., **Khodja, A.**, Ibrahim, T. *et al.* The increasing importance of novel deep eutectic solvents as potential effective antimicrobials and other medicinal properties. *World J Microbiol Biotechnol* 39, 330 (2023). <https://doi.org/10.1007/s11274-023-03760-8>

FEATURED WORKS

- AUS Commencement Address delivered by the 2024 Class Valedictorian: <https://www.youtube.com/watch?v=HTTr0KtI0fi8>
- Our work on the development of self-disinfectant fabrics was featured in **MIT Technology Review Arabia** (2023): <https://technologyreview.ae/باحثون-من-الجامعة-الأميركية-بالشارقة/>

- Our work on the modification of cellulose-fibers with antibacterial nanoparticles was featured in **Al Khaleej News** (2023): <https://www.alkhaleej.ae/2023-11-21/باحثون-في-أمريكية-الشارقة-يطورون-أقمشة-ذاتية-التطهير/التربية-والتعليم/أخبار-الدار>
- Our work on constructing nanomaterials for healthcare applications and environmental remediation was featured in **AUS News** (2023): <https://www.aus.edu/media/news/aus-researchers-develop-materials-for-environmental-and-health-advancements>

CONFERENCES & TALKS

- May 2024 – “*Enhancing Cellulose Fibers with Carbon Dots for Antimicrobial Properties*”
Student Research Conference on Mathematics and Related Areas, AUS
- February 2024 – “*Introducing Antimicrobial Activity into Cellulose Fibers using Carbon Dots: A Step Towards Self-Disinfecting Fabric*”
American Chemical Society (ACS) Regional Middle East and Africa Conference, New York University Abu Dhabi
- September 2023 – “*Carbon Dot-Modified Cellulose Fibers: Advancements in the Pursuit of Self-Disinfecting Textiles*”
College of Arts and Sciences Research Day, AUS
- August 2023 – “*Cellulose Fibers Modified with Carbon Dots: A Promising Approach for Development of Self-Disinfecting Fabrics*”
The Fourth Forum for Women in Research, University of Sharjah
- January 2023 – “*Excelling In Chemistry: Learning to Master Organic Chemistry*”
American Chemical Society (ACS) - AUS Student Chapter, AUS

EXPERIENCE

BCE Learning Center Academic Tutor

August 2023-June 2024

Department of Biology, Chemistry, and Environmental Sciences (BCE)
College of Arts and Sciences (CAS), AUS

- Provide tutoring support for multiple courses including General Biology I (BIO 101), General Biology II (BIO 102), Introduction to Human Biology (BIO 103), General Chemistry I (CHM 101), Organic Chemistry I (CHM 215), and Organic Chemistry II (CHM 216).
- Successfully tutored over 250+ students with diverse academic backgrounds.
- Instruct students on creating effective study systems, emphasizing prioritization of active learning over passive methods, and guiding students towards adopting efficient study habits.

Undergraduate Research Assistant

March 2023-June 2024

Supramolecular & Nano-Chemistry Group (SNCG)
Department of Biology, Chemistry, and Environmental Sciences (BCE)
College of Arts and Sciences (CAS), AUS

- Assistant to Dr. Mohammad Al-Sayah, Head of SNCG
- Research interests: chemical biology, biochemical sensors, functional materials for biological application, polymers, and self-assembled nanostructures.
- Awarded the CAS Undergraduate Research Grant (2024) for our project entitled “*Development of CD-PDA Hybrid Composites on Cellulose and Polyester Fabrics for Enhanced Antimicrobial Textiles*”.
- Awarded the QUWA Research & Innovation Grant (2023) for our project entitled “*Cellulose Fibers Modified with Carbon Dots: A Promising Approach for Development of Self-Disinfecting Fabrics*”.

- Awarded the CAS Undergraduate Research Grant (2023) for our project entitled *"Modification of Cellulose-Based Fibers with Antibacterial Nanoparticles for Development of Self-Disinfectant Fabrics"*.

Lab Assistant

October 2021-2022

Neuroanatomy Laboratory
Department of Biology, Chemistry, and Environmental Sciences (BCE)
College of Arts and Sciences (CAS), AUS

- Assistant to Dr. Reem Khalil, Head of the Neuroanatomy Laboratory
- Research interests: neurophysiology, neuroanatomy, and development of visual circuits in the mammalian visual cortex.
- Investigated the organization and operational characteristics of neural circuits within the mammalian visual cortex, with a particular emphasis on their developmental aspects.
- Involved in unraveling the intricate relationships between neural connections across various visual regions and the physiological maturation of these circuitry.

COVID-19 Vaccine Campaign Volunteer

March-Sept. 2021

King Fahd University of Petroleum and Minerals (KFUPM)
Dhahran, Saudi Arabia

- +170 volunteering hours
- Supported the efforts to distribute the Pfizer-BioNTech and AstraZeneca COVID-19 vaccines through involvement in the organization and planning process.
- Worked with patients to ensure a smooth and efficient experience at the KFUPM vaccine center, providing them with guidance and support throughout the process.
- Collaborated closely with the lead clinician and the rest of the clinic staff on a daily basis.
- Received a certificate of participation.

SKILLS

- **Wet lab:** staining, culture preparation, culture isolation, smear preparation, plating techniques, cell culture maintenance, and ultracentrifugation
- **Major lab equipment:**
 - Rotatory Evaporator (Rotovap)
 - UV/VIS Microplate Spectrophotometer
 - Fourier-Transform Infrared Spectroscopy (FTIR)
 - Fluorescence Spectroscopy
 - Compressstome VF-310-0Z vibrating microtome (under supervision)
 - Carl Zeiss Axio Imager M2 Microscope (under training)
- **Computer**
 - Python (general-purpose programming language); Beginner
 - R (programming language for statistical computing and graphics); Beginner
 - Adobe After Effects, Adobe Premiere Pro, Adobe Photoshop, and Adobe Media Encoder (visual effects and motion graphics software); Experienced
 - Maxon Cinema 4D, Blender, Octane Render (3D modeling software); Experienced
 - MS Word, MS Excel, MS PowerPoint; Experienced
- **Languages**
 - Arabic (native)
 - English (fluent)
 - French (beginner)

LICENSES & CERTIFICATIONS

- Machine Learning Specialization – DeepLearning.ai & Stanford University, 2024 ([In progress](#))
- Data Analysis and Visualization Using Python – AUS, 2024
- Bayesian Belief Networks for Research – AUS, 2024
- Data Analysis and Machine Learning Using Python – AUS, 2024
- Disease Modeling and Target Discovery – Insilico Medicine, 2024
- R Programming for Biologists – NSTC, 2023

EXTRACURRICULAR ACTIVITIES

Science Educator YouTube Channel

November 2019-present

- Channel Link: <https://www.youtube.com/@abdelhamidkhodja>
- I often find that biology and organic chemistry are taught without purpose or relevance causing people to lose interest in the subject.
- My goal is to help students approach the subjects systematically to prioritize understanding over aimless memorization.

Public Relations Coordinator

July 2022-May 2023

American Chemical Society (ACS) – AUS Student Chapter

- Coordinating all external communications with sponsors and partners.
- Coordinating all internal communications with AUS chapter members, faculty, and staff.
- Responsible for promoting ACS and its activities within the local academic community.
- Responsible for arranging for guest and keynote speakers.
- Operating and managing the ACS Chemistry Helpline WhatsApp Group which provides free chemistry help to 130+ students.

President, College of Arts and Sciences Student Team

May 2022-May 2023

College of Arts and Sciences, AUS

- Assisting the Associate Dean in preparing event proposals and budget requests.
- Facilitating the smooth functioning of the Team.
- Responsible for ensuring that the Team achieves its objectives.
- Addressing the concerns of the College of Arts and Sciences students.
- Responsible for ensuring the activities of the Team comply with AUS policies and procedures.
- Coordinating the recruitment of new members.

Vice President, Neuroscience Society

May 2022-May 2023

College of Arts and Sciences, AUS

- Assisting the President and acting on their behalf in their absence.
- Coordinating with Society members to ensure tasks are completed on time.
- Providing support and guidance to Society members about event planning and organization.
- Assisting in the recruitment of new members.

Head of the Logistics Team

Feb. 2022-Jan. 2023

Biology, Chemistry, and Environmental Sciences (BCE) Student Outreach Committee
College of Arts and Sciences, AUS

- Coordinating the organization of Committee events.
- Responsible for booking venues, ordering supplies, managing budgets and expenses, and communicating with Committee members, faculty advisors, and external partners.
- Responsible for ensuring the activities of the Committee comply with AUS policies and procedures, and for representing the Committee in the wider university community.

Executive Secretary, College of Arts and Science Student Team

Sept. 2021-May 2022

College of Arts and Sciences, AUS

- Assisted the Associate Dean in preparing event proposals and budget allocation
- Implemented a task-managing system that helped optimize the Team's productivity
- Maintained the Team's records.

Founding President, Neuroscience Society

April 2021-May 2022

College of Arts and Sciences, AUS

- Cofounded the Society.
- Led the Society to achieve its objectives during its first year.
- Promoted interdisciplinary dialogue in an inclusive learning environment.
- Coordinated all the tasks of the Society for a smooth beginning.

REFERENCES

- **Dr. Mohammad Al-Sayah**, *Professor*, Department of Biology, Chemistry, & Environmental (BCE), American University of Sharjah
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- **Dr. Amin Majdalawieh**, *Professor*, Department of Biology, Chemistry, & Environmental (BCE), American University of Sharjah
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- **Dr. Ahmad Aissa**, *Associate Dean*, College of Arts & Sciences (CAS), American University of Sharjah
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- **Dr. Sara Dalibalta**, *Associate Professor*, Department of Biology, Chemistry, & Environmental (BCE), American University of Sharjah
sdalibalta@aus.edu; +971 6 515 4421
- **Dr. Reem Khalil**, *Associate Professor*, Department of Biology, Chemistry, & Environmental (BCE), American University of Sharjah
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