

# Abdelhamid Khodja

American University of Sharjah, Sharjah, UAE

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## EDUCATION

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### B.Sc. in Biology

2020-2024

American University of Sharjah (AUS), Sharjah, UAE

Honors: *Magna Cum Laude* & Valedictorian

Interests: computational structural biology, molecular dynamics, drug design, computational biology.

- Simulation & Modelling Work: <https://t.ly/JHs9>

Research Projects: Antibacterial Nanoparticle Cellulose Fabrics for Self-Disinfection & Hybrid Antimicrobial Composites.

## PUBLICATIONS

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1. Ravindran, S., Khan, D., **Khodja, A.**, *et al.* Harnessing Piperine for Enhanced Antimicrobial Activity of Carbon Dot-Modified Cellulose Fibers (2024) *Accepted September 4<sup>th</sup>, 2024*
2. Akram, M., **Khodja, A.**, Majdalawieh, A., Dalibalta, S. The role of lipids in atherosclerosis: focus on molecular biology (2024) *Submitted August 23<sup>rd</sup>, 2024*
3. Makhoulouf, 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)
4. 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>

## RESEARCH 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 |

## EXPERIENCE

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### Undergraduate Research Assistant

March 2023-June 2024

Supramolecular & Nano-Chemistry Group (SNCG), 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.
- Responsible for developing, synthesizing, and testing novel antibacterial nanoparticles.
- 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

Oct. 2021-2022

Neuroanatomy Laboratory, 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.
- Responsible for setting up lab equipment, preparing buffering reagents, and prepared the manual for the vibrating microtome.
- 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 Pfizer and AstraZeneca COVID-19 vaccine distribution.
- Worked with patients to ensure an efficient experience at the KFUPM vaccine center.
- Collaborated closely with the lead clinician and the clinic staff on a daily basis.

## TEACHING

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### Biochemistry Teaching Assistant

Jan. 2024-June 2024

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

- Assisted Dr. Amin Majdalawieh in grading assessments and exams.
- Provided one-on-one and group tutoring to students requiring additional assistance.
- Supported student involvement in research and extracurricular activities related to biochemistry.

### BCE Learning Center Academic Tutor

August 2023-June 2024

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

- Provided 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.
- Instructed students on creating effective study systems, emphasizing prioritization of active learning, and adopting efficient study habits.

## AWARDS AND HONORS

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|--|-----------------------|
| • UAE Distinguished Student Golden Visa              | 2024                  |
| • 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 |
| • 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             |

## CONFERENCES & TALKS

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- 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

## SKILLS

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- **Wet lab:** staining, culture preparation, culture isolation, smear preparation, plating techniques, cell culture, ultracentrifugation, molecular cloning, biosafety, mammalian cell culture
- **Major lab equipment:** Rotatory Evaporator, UV/VIS Microplate Spectrophotometer, Lyophilizer, Fourier-Transform Infrared Spectroscopy (FTIR), Fluorescence Spectroscopy, Compresstome VF-310-0Z vibrating microtome, Carl Zeiss Axio Imager M2 Microscope
- **Computer:**
  - Python & R
  - Adobe After Effects, Adobe Premiere Pro, Adobe Photoshop, and Adobe Media Encoder; Experienced
  - Maxon Cinema 4D, Blender, Octane Render; Experienced
  - MS Office Suite; Experienced
- **Languages:** English (native), Arabic (native), French (beginner)

## EXTRACURRICULAR ACTIVITIES

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<b>Science Educator</b> YouTube Channel	Nov. 2019-present
• Channel Link: <a href="https://www.youtube.com/@abdelhamidkhodja">https://www.youtube.com/@abdelhamidkhodja</a>	
<b>Public Relations Coordinator</b> American Chemical Society (ACS) – AUS Student Chapter	July 2022-May 2023
<b>President, College of Arts and Sciences Student Team</b> American University of Sharjah (AUS)	May 2022-May 2023
<b>Vice President, Neuroscience Society</b> American University of Sharjah (AUS)	May 2022-May 2023
<b>Head of the Logistics Team</b> BCE Student Outreach Committee, American University of Sharjah (AUS)	Feb. 2022-Jan. 2023
<b>Executive Secretary, College of Arts and Science Student Team</b> American University of Sharjah (AUS)	Sept. 2021-May 2022
<b>Founding President, Neuroscience Society</b> American University of Sharjah (AUS)	April 2021-May 2022

## PRESS & FEATURED WORKS

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- Delivered the [AUS Commencement Address](#) as the 2024 Class Valedictorian.
- Featured as the [Spring 2024 Ambassador](#) for the College of Arts and Science (2024).
- Audio podcast interview on [Science Talks with Tala Zoubi](#) (2024).
- Featured in [MIT Technology Review Arabia](#) (2023) for the development of self-disinfectant fabrics.
- Featured in [Al Khaleej News](#) (2023) for the development of novel antibacterial nanoparticles.
- Featured in [AUS News](#) (2023) for nanomaterials for healthcare & environmental applications.
- Audio podcast interview on the [Tea With GenZ](#) (2021).