

# Lamya Adnan Al-Haj

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**OBJECTIVE:** To enhance research and development in the Arab world and create positive change in my surrounding. I also aspire to work to promote STEM education and youth development initiatives in the region.

## Academic Experience and Membership

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- University College London, London, UK: PhD Molecular Biology 2014
- University of New South Wales, Sydney, Australia: Master of Science & Technology in Environmental Science with Distinction 2006
- Sultan Qaboos University, Oman: Bachelor of Science (B.Sc.) with Distinction and Honors, Major: Biotechnology Minor: Chemistry Cumulative GPA 3.73 2004

## Professional Experience

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**January 2014 – May 2019, Sultan Qaboos University, Muscat, Oman**

**Assistant professor**

**August 2006 – January 2014, Sultan Qaboos University, Muscat, Oman**

**Lecturer, Biology Department, College of Science**

- Lecture in General biology for entry level students
- Lecture in Experimental techniques for graduate students
- Lecture in Genetics, a university elective course for all SQU students

**September 2004 – June 2005, Sultan Qaboos University, Muscat, Oman**

**Teaching Assistant**

- Lecture in General biology for entry level students
- Assisted professors in mentoring undergraduate students in lab sessions
- Assisting students with lab equipment
- Assisting the professors with correcting of tests and quizzes

## Publications & Conference papers

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### *Publications*

- **Al-Haj**, LA (2012). Biofuels from microorganisms. *Asia-Pacific Biotech News* 16: 30-33
- Hellier P, **Al-Haj LA**, Talibi M, Purton S, Ladommatos N (2013). Combustion and emissions characterisation of terpenes with a view to their biological production in cyanobacteria. *Fuel*. 111, 670-688.
- **LA Al-Haj** (2014). Development of genetic engineering tools for the cyanobacterium *Synechocystis* PCC 6803 for advanced biofuel production. University College London (University of London).
- Farrukh Jamil, Ala'a H. Al-Muhtaseb, **Lamya Al-Haj**, Mohab A. Al-Hinai, Paul Hellier, Umer Rashid (2016). Optimization of oil extraction from waste "Date pits" for biodiesel production. *Energy Conversion and Management*, 117 264-272.
- **L Al-Haj\***, YT Lui, RMM Abed, MA Gomaa, S Purton (2016). Cyanobacteria as chassis for industrial biotechnology: progress and prospects. *Life* 6 (4), 42
- H Ala'a, F Jamil, **L Al-Haj**, MA Al-Hinai, M Baawain, MTZ Myint, D Rooney (2016). Efficient utilization of waste date pits for the synthesis of green diesel and jet fuel fractions. *Energy Conversion and Management* 127, 226-232.
- MA Gomaa, **L Al-Haj**, RMM Abed (2016). Metabolic engineering of cyanobacteria and microalgae for enhanced production of biofuels and high-value products. *Journal of Applied Microbiology*.
- Ahmad M Abu-Jrai, Farrukh Jamil, H Ala'a, Mahad Baawain, **Lamya Al-Haj**, Mohab Al-Hinai, volMohammed Al-Abri, Sikander Rafiq (2017). Valorization of waste Date pits biomass for biodiesel production in presence of green carbon catalyst. *Energy Conversion and Management* 135, 236-243.

- F Jamil, H Ala'a, **L Al-Haj**, MA Al-Hinai, M Baawain (2017). Phoenix Dactylifera Kernel Oil Used as Potential Source for Synthesizing Jet Fuel and Green Diesel. *Energy Procedia* 118, 35-39
- Farrukh Jamil, H Ala'a, Myo Tay Zar Myint, Mohab Al-Hinai, **Lamya Al-Haj**, Mahad Baawain, Mohammed Al-Abri, Gopalakrishnan Kumar, AE Atabani (2018). Biodiesel production by valorizing waste Phoenix dactylifera L. Kernel oil in the presence of synthesized heterogeneous metallic oxide catalyst (Mn@ MgO-ZrO<sub>2</sub>). *Energy Conversion and Management* 155, 128-137
- I Barkia, F Zadjali, N Saari, MH Zakaria, CL Li, A Witkowski, **L Al-Haj\*** (2018). Isolation and identification of indigenous marine diatoms (Bacillariophyta) for biomass production in open raceway ponds. *Aquaculture Research* 49 (2), 928-938
- Farrukh Jamil, Lamya Al-Haj, H Ala'a, Mohab A Al-Hinai, Mahad Baawain, Umer Rashid, Mohammad NM Ahmad, (2018). Current scenario of catalysts for biodiesel production: a critical review. *Reviews in Chemical Engineering*. 34 (2), 267-297
- H Ala'a, Farrukh Jamil, **Lamya Al-Haj**, Myo Tay Zar Myint, Eyas Mahmoud, Mohammad NM Ahmad, Ahmad O Hasan, Sikander Rafiq (2018). Biodiesel production over a catalyst prepared from biomass-derived waste date pits. *Biotechnology Reports*. 20, e00284
- Paul Hellier, Farrukh Jamil, Ernesto Zaglis-Tyraskis, H Ala'a, **Lamya Al Haj**, Nicos Ladommatos (2019). Combustion and emissions characteristics of date pit methyl ester in a single cylinder direct injection diesel engine. *Fuel* 243, 162 – 171
- Ines Barkia, **Lamya Al-Haj**, Azizah Abdul Hamid, Mutaharah Zakaria, Nazamid Saari, Fahad Zadjali (2019). Indigenous marine diatoms as novel sources of bioactive peptides with antihypertensive and antioxidant properties. *International Journal of Food Science & Technology* 54 (5), 1514-1522

#### ***Book chapters***

- H Ala'a, Farrukh Jamil, **Lamya Al Haj**, Eyas Mahmoud, Mohamed Becherif, Umer Rashid, Sikander Rafiq, AE Atabani, Gopalakrishnan Kumar (2019). Valorization of Waste Date Seeds for Green Carbon Catalysts and Biodiesel Synthesis. *Sustainable Agriculture Reviews* 34, 105-123 Springer, Cham.

#### ***Conference papers***

- Farrukh Jamil, Ala'a Al-Muhtaseb, **Lamya Al Haj**, Mohab Al-Hinai. Parametric study of oil extraction from phoenix dactylifera kernal (date seed) as green energy source. 4th International Conference on Renewable Energy: Generation and Applications. 8-10 Feb 2016. Belfort, France.
- F Jamil, H Ala'a, **L Al-Haj**, MA AlHinai, M Baawain, G Murshid . Clean Fuel Production from Waste Date Pits., ICTEA: International Conference on Thermal Engineering 2017.
- MAA A Al-Jari, AH Muhtaseb, M Baawain, **L AL-Haj**, M Al-Hinai. Utilization of waste date pits for biodiesel production in presence of green catalyst. 4th International Conference on Energy and Environment Research (ICEER 2017).
- Farrukh Jamil, **Lamya Al-Haj**, H Ala'a, Mohab A Al-Hinai, Mahad Baawain, Umer Rashid, Mohammad NM Ahmad. Current scenario of catalysts for biodiesel production: a critical review. *Reviews in Chemical Engineering*. 2017.

#### ***Research Grants***

- Secured an Internal grant of 20,000 USD for a 2 year project to genetically modify a cyanobacteria for the production of high value products. (2015)
- Secured a 650,000 USD grant from the Research Council of Oman to conduct a 4 year research of utilization of waste date seed pits for the production of second generation biofuels. (2015)
- Secured a 20,000 USD international collaborative grant with Durbin University in South Africa to work on a 2 year project to screen microalgae thriving in harsh conditions for its potentials in biofuel and high value product production. (2017)
- Secured a ~400,000 USD grant from Petroleum Development of Oman for a 3 year project to upscale biodiesel production from waste pits to be tested in the companies fields machinery in Oman. (2018)

#### ***Supervision***

- Co supervisor of a PhD student as part of the TRC grant received in 2014 with a tentative thesis title: Applying genetic engineering tools for production of biofuels and high value products in microalgae. (On-going)
- Co supervisor of a PhD student from University of Putra Malaysia with a thesis title: Production of microalgae-based functional food with antioxidant and antihypertensive properties from Omani waters. (On-going)
- Co supervisor of a PhD student as part of the TRC grant received in 2014 with a tentative thesis title: Volarization of Omani Waste Date pits (Phoenix Dactylifera) Pits for Production of Biofuels. (Completed 2017)
- Supervised a BSc student with a project entitled "Isolation, growth optimization and characterization of locally isolated Dunaliella salina and its ability to produce  $\beta$ -carotene" (2016-1017)

## **Awards & Recognitions**

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### **Sultan Qaboos University & National Awards**

- Received the SQU annual award for students with distinction for each of the years 2000 - 2003 inclusive.
- The prestigious "Award of Excellence" from His Majesty the Sultan Qaboos for top academic achievers in SQU where I was awarded a fully funded 5\* leisure trip to the Netherlands in 2003.
- National Research Award - 2018
- University day award for outstanding scientific achievements - 2019
- Omani woman of year award for Innovation and Technology - 2019

### **University of New South Wales**

- "The Boban Markovic Prize in Environmental Science" for achieving the highest graduating grade across all departments of the faculty of Science, University of New South Wales, Australia, 2007.

### **University College London**

- Received a monetary prize for winning in the "Strictly Come Science" competition that was organized as part of the Institute of Structural and Molecular Biology symposium in 2010.
- Received a monetary prize for winning the "Best Research Poster Competition" organized by the graduate school in 2011.
- Received a monetary prize for winning in the "TEyD; Tell Everyone your Dissertation" competition organized by the UCL Public Engagement Unit in 2011.
- Invited speaker by UCL Public Engagement Unit to give a "Bite Size Lunch Hour Lecture" titled (Biofuels from microorganism: Face or Fiction) in an effort to communicate science to the general public in 2011.
- Received a prize of £1000 for our team coming in second place out of 72 teams across the UK that came together in the nationwide Biotechnology YES (Young Entrepreneur Scheme)" competition 2011 held annually in the UK.
- Invited speaker by UCL Head of International Office to deliver a lecture titled "Life in the UK and studying at UCL" promoting studying at UCL to a delegation of 60 students from the Sultanate of Oman 2012.
- Mentor for a public engagement event " UCL CEPMaBC; Be a Polymath" organised by the chemistry department at UCL in 2012.
- Awarded several travel grants from both UCL graduate school and the Society of General Microbiology (~£2200) in support for presenting my research in China, Canada, Germany and Poland.

### **International Awards**

- The prestigious "L'Oréal UNESCO award for women in science- Middle east fellowship award" 2018.
- Best paper award in the ICREGA'16, held in Belfort - France February 8-10, 2016.
- Best paper award in France International conference on emerging and renewable energy - 2016
- Receive the "Occidental Oman –Gulf intelligence PhD student's award, 2016" for the advancement of post graduate education" at the Energy-industry - academia summit organized by Gulf intelligence.
- His Excellency the undersecretary of the ministry of Oil and Gas and The Occidental Oman CEO, presented the award to young scientists who promote postgraduate education in Oman. It was an honor and

great pride to be the only female amongst 4 winners to receive the award especially in the field of STEM research where females are reported to be underrepresented worldwide.

## **Workshops, Training & Conferences**

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### ***Programs***

- Participated in the National Training Program in Biotechnology 7-11 May 2005.
- Participated in an "Instructional Skills Development Program" from 13th Feb 2005 to 3rd April 2005

### ***Conferences***

- Participated with a lecture on "The Potential of Second Generation Biofuels in Oman" in the Biotechnology Symposium organized by Sultan Qaboos University that was held from 22ed -23ed April 2008.
- Participated with a lecture on "The potential of biofuels as a renewable energy resource" in the Environmental Symposium on Renewable Energy Resources that was organized by the Ministry of Environment & Climatic Affairs held in the Golden Tulip on the 14-March 2008.
- Participated in the International conference on Bio-safety held by the Ministry of Regional Municipalities, Environment & Water Resources from 21st- 23 February 2005.
- Participated in the International Symposium of Biotechnology and Conservation of Species from Arid Regions, February 10th – 13th, 2013.
- Participated in the third national conference on bio-safety organized by the Ministry of Environment and Climate affairs held in Park Inn Muscat, September 23ed – 25th, 2014.

### ***Workshops***

- Participated in organizing the first interim workshop on Al Jebal Al Akhdar Initiative Conservation and Sustainable Development in a Fragile Arid Mountain Ecosystem, organized by the Center for Environmental Studies and Research at the Sultan Qaboos University. February 8th -9th 2006.
- Participated in a workshop offered by Middle East Desalination Center (MEDRC) on "Combating the Emerging Impacts of Harmful Algal Blooms on Desalination Plants) held on the first of Jan of 2015.
- Participated in a workshop offered by the TRC on "How to write a TRC proposal" held on the 4th – 5th of October 2015.
- Participated in a workshop offered by the Centre for Excellence in Teaching & Learning (CETL) entitled "Developing both Assessment Tools & Rubrics" that took place on 12 November 2015.
- Participated in a workshop offered by the Academic Innovation Assistance Program (AIAP) "Innovation and Entrepreneurship" that took place between the 14th to 16 December 2015.
- Organised and conducted training sessions on using high technology instruments for the cultivation and analysis of algae growth for biofuel production to students inside & outside SQU including students from the higher technical college, Caledonian college and a student from college of engineering in SQU.
- Conducted a series of lectures on Biofuels at Sultan Qaboos University for the Independent Learning Center. (8-19th Jan,2017

### ***International workshops & Conferences***

- 8th European Workshop: Biotechnology of Microalgae, June 4-5th, 2010, Nuthetal/ Potsdam, Germany.
- Biofuels (C3), March 1-6th, 2011, Swissotel the Stamford, Singapore.
- Microorganisms for Bio-Fuel production from sunlight, September 18th – 21st, 2011, Bielefeld, Germany.
- BIT's 1st Annual International congress of Marine Alga, September 20th – 23ed, 2012, Dalian, China.
- Molecular Bioenergetics of Cyanobacteria: Shaping the Environment, April 15th- 20th, 2013, Pultusk, Poland.
- Algal Biomass, Biofuels and Bioproducts, Jun 16th-19th, 2013, Toronto, Canada.
- Invited speaker at "Rendez-Vous de Concarneau: Where Industry Meets Science in Marine Biotechnology", October 9th – 10th, 2014, Concarneau, France.

- Appearance in the French daily newspapers after being interviewed by the French press to understand the current and future plans SQU/Oman has for establishing biofuels in the region. The interview was a success and was followed by a second interview that that was also published in French.
- Invited speaker at the conference entitled “Energy, Water and Food Security” held on December 12th - 13th, 2014. Beirut- Lebanon.
- Speaker at the conference entitled “5th International Conference on Algal Biomass, Biofuels and Bioproducts” held between the 7th and 10th of Jun 2015 in San Diego, USA.

### ***Collaboration***

- Invited Professor Saul Purton from UCL (UK) to deliver high-level talks on “Algae Biology and Biotechnology” in support of achieving UCL-SQU collaboration.
- Received a TRC grant with 4 faculty members from college of science and college of engineering to carry out Biofuel research at SQU.
- A co- supervisor to a PhD student from University of Putra Malaysia in support of achieving SQU- university of Putra Malaysia collaboration)
- Participated with a presentation on my research activities and interest in the “Water and Energy Collaboration Symposium” that took place in SQU between 16th, 17th March 2016. The event was organized by the British council, Oman to initiate collaborative projects with UK universities. Established a collaboration with Qatar University by visiting and collaborating with the Alga Technology Program (ATP).
- Visited and established a collaboration for joint research with Qushim microalgae biorefinery (QMAB).
- Provided consultation for a Japanese company (Euglena) on how to start their business in Oman. The meetings lead to the establishing of a small facility on SQU campus.

### **Speaking, Media & Public/Community Services**

#### ***Public Speaking and Media***

- Invited speaker at the Harvard Business School conference entitled “4th annual HBS crossroads conference”. First Omani to be an invited speaker at the “Harvard Business School crossroad conference” in Dubai to discuss “Woman Education in STEM”. A very successful talk lead to a lot of networking and collaborations (April 2016).
- Delivered a talk “Engaging and empowering the millennials” to IMD alumni in the IMD Business Forum March 2018).
- Gave a TEDx talk at the Shangri-La Muscat entitled “Youth of today, leaders of tomorrow” 2nd of May 2016 which hit over 14k views on YouTube
- Invited by MAD talks (Dubai) to share my aspirations as n Omani female role model in higher academia and research (May 2016).
- Handpicked by the British council as one of the "Young Arab Leaders" to meet his Royal Highness, Princes Charles of Wales at the Al- Bustan Place (Muscat) on 6th of November 2016.
- Invited speaker with an inspirational talk entitled “The Art of Living” at the “Listen to Rise” 10th WIBCON, 2018 conference held in Lahore, Pakistan (April 2018).
- As a fresh entry student at SQU, I repeatedly hosted and moderated various university opening ceremonies, international conference and various university open day events.
- Held and won a large-scale debate in SQU in 1999 with an audience of about 1200 students, academic staff and high ranked administrative members. The debate was revolutionary with a big impact as it resulted in removing the Local Area Network (LAN) from the communication systems at the college of science. This event certainly helped shape my personality as I was still in the very young age of 17.
- At the age of 19 as a 4th year science student, I was handpicked to present a talk about the status of woman in Oman in the Netherlands in the presence of the Omani Ambassador in the Netherlands along with high society members of the Dutch community.
- Accepted an invitation by the Environmental Society of Oman (ESO) to give a talk about the potential of biofuels as an alternative energy resource. The title of this evening seminar was "Biofuels: Fact or Fiction?" The event took place in PDO oil and gas exhibition Centre on the 15th of Jun and had an excellent turn out

from the enthusiastic general public and resulted in initiating collaborations between PDO and SQU (Jun 2015).

- Designed and hosted an ongoing radio programme on 90.4 FM with the show title “The Art of Living” which mainly discusses topics of vital importance especially to the youth and the community as whole (2015 - 2018).
- Delivered several motivational talks to students from inside and outside SQU (2015-2019).
- An invited speaker to address 100’s of parents of SQU students at Sultan Qaboos University in a newly launched program called "Engagement" (1st of November, 2016).
- Shared our research team’s latest findings in our research on the production of biodiesel from waste date pits on the local Omani TV.
- Gave several local inspirations and motivational talks to the Omani Youth in the years 2014-2018 addressing and unleashing the potentials of hundreds of the countries youth.

#### ***Selected Community Service / Voluntary work***

- Handpicked by MIT Technology Review & Dubai Future Foundation to be an international judge for the “Innovators Under 35 competition” IU35 - 2019.
- Invited by MIT to mentor and coach 80 finalist teams for the MIT Pan Arab entrepreneurship program held in Oman (April 2018).
- Shared with an on-line workshop on the “Importance of life skills in the 21st century” for an Arabic educational platform “Edlaal” (February 2018).
- Coached teams for an “Ideathon” competition organized by the Animal and Plant Genetic Research Center to find workable solutions to environmental issues in the country. (February 2018).
- With an aspiration to inspire our little citizens, I volunteered to speak to 5th and 6th grade school children at TLC international school about my carrier as an academic and researcher at SQU on career day. Such events inspire the children and sparks their interest in dreaming big and aspiring high. The students were very motivated and inspired (May 12th 2015).
- Organized a visit for third grade students from TLC privet school to the physics department at SQU to learn about the concept of "Light" run in collaboration with the Physics department (October 2015).
- Organized a visit for sixth grade students from TLC privet school to the physics department at SQU to learn about the concept of "Light, reflection and refraction". The event was run in collaboration with the Physics department (November 2015).
- Invited by Petroleum Development of Oman (PDO) to give an inspirational talk about “The beauty of facing our fears “addressed to the woman on celebrating Omani woman day (21st Oct 2015).
- Trained students from the higher technical college on high tech research instrumentation in my laboratory.
- Actively supervised three students from outside college of science in an international environmental competition hosted by the Environmental Society of Oman (ESO) and Emirates Environmental Group, 2016.

#### **Additional information**

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- Languages: English (fluent), Arabic, (fluent)

#### **References**

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- References Available upon request