Business address Aljunaid street, Nablus Palestine

CURRICULUM VITAE MARYAM B. HMOUDAH

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EDUCATION

2020-2024: *DSc* in Chemical and Process Engineering, Laboratory of Industrial Chemistry and Reaction Engineering, Åbo Akademi University, Finland (*Cotutelle*, double degree)

2020-2024: *PhD student* in Chemical Sciences, industrial chemistry, University of Naples Federico II, Naples, Italy (*Cotutelle*, double degree)

2014-2016: *MSc* in Chemical Engineering (first class academic standing), specialty of Energy and Environment, University of Calgary, Schulich School of Engineering, Calgary, Canada, GPA: 3.93

2004-2009: *BSc* in Chemical Engineering (first class academic standing), An-Najah National University, Faculty of Engineering, Nablus, Palestine, GPA: 85.5

2003-2004: High School in Science stream, Kamal Junblat, Nablus, Palestine, GPA:95

WORK EXPERIENCE

- Assistant Professor at An-Najah National University: January 2024 Present
- Instructor at An-Najah National University: August 2016 December 2020
- Director of ABET Centre, An- Najah National University: September 2018 May 2019
- Advisor of AIChE student Chapter, An-Najah National University: January 2017 December 2020
- Research and Teaching Assistant: January 2014 June 2016
- Senior Quality Engineer: October 2013 December 2013
- Quality Executive Engineer: April 2011 October 2013
- Teaching and Research Assistant: January 2011 December 2011

TEACHING EXPERIENCE

- Courses taught at An-Najah National University, Nablus, Palestine (Fall 2016-Fall 2021)
- 1. Principles of Chemical Engineering Calculations (10626202)
- 2. Fluid Mechanics (10626231)
- 3. Numerical Methods for Engineers (10626251)
- 4. Principles of Scientific Research and Technical Writing (64300)
- 5. Special Topics in Environment (Engineered Nanotechnological materials) (1062954)
- 6. Introduction to Professional Engineering Concepts (10626301)
- 7. Design and Analysis of Experiments (10626554)
- 8. Supervised students on their graduation Project entitled "Adsorptive removal of dyes from textile wastewater using nanoparticles (nanopyroxene)"
 - Courses TA-ed at University of Calgary, Alberta, Canada (Fall 2014, 2015, Summer 2015 and Winter 2016):
- 1. Behaviour of Liquids, Gases and Solids (ENGG 201).
- 2. Internship (INTE 513.03)
 - Courses TA-ed at An-Najah National University, Nablus, Palestine (Winter, Summer and Fall 2011):
- 1. Fluid Mechanics (64231).
- 2. Mass Transfer (64361).

- 3. Reactor design (64441).
- 4. Computer Aided Equipment Design (64444).

AWARDS AND SCHOLARSHIPS_

- 1. Schlumberger Foundation, Faculty for the Future Fellowship, April 2022.
- 2. Society of Swedish Literature, Environmental management and technology, January, 2022.
- 3. 2021 Excellence in E-Learning Award in advancing the educational process and innovation in the field of educational course management system (Moodle), An-Najah National University, July 2021.
- 4. 2020 AIChE Student Chapter Advisor Honor Roll.
- 5. Scientific Research Award, Deanship of Scientific Research, An-Najah National University, July 2020.
- 6. Scientific Research Award, Deanship of Scientific Research, An-Najah National University, July 2019.
- 7. Scientific Research Award, Deanship of Scientific Research, An-Najah National University, June 2018.
- 8. Scientific Research Award, Deanship of Scientific Research, An-Najah National University, June 2017.
- 9. FGS Maternity and Miscellaneous Award, Graduate Scholarship Office, University of Calgary, December 2014.
- 10. Schulich Student Activities Fund (SSAF) (to attend 64th CSChE conference, Niagara Falls, Ontario Conference, October 18-22, 2014), Schulich School of Engineering, University of Calgary, December 2014.
- 11. Best 3MT presentation award in "Research Seminar" course, Schulich School of Engineering, University of Calgary, November 2014.
- 12. Graduate Research Scholarship (MSc), Department of Chemical and Petroleum Engineering, University of Calgary, AB, Canada, January 2014.
- 13. Tuition Fee Waiver Award for Nine Semesters, An-Najah National University, Nablus, Palestine, 2005-2009. Amount: 33% off total tuition fees.
- 14. Dean's List of Honor, An-Najah National University, Nablus, Palestine, 2004-2009.

_PUBLICATIONS, PRESENTATIONS, PERFORMANCES, EXHIBITIONS_____

Peer-reviewed journal articles:

- I. *M. Hmoudah*, C. Chianese, A. El-Qanni, V. Russo, M. Di Serio, T. Salmi, Photodegradation of ibuprofen using ZnO and TiO₂ nanoparticles: Comprehensive kinetics modeling, mechanisms, and thermodynamics study, Journal of Water Process Engineering 69 (2025): 106598. https://doi.org/10.1016/j.jwpe.2024.106598
- II. *M. Hmoudah*, R. Paparo, M. De Luca, M. E. Fortunato, R. Tesser, M. Di Serio, C. Ferone, G. Roviello, O. Tarallo, V. Russo, Adsorption of methylene blue on metakaolin-based geopolymers: a kinetic and thermodynamic investigation, Langmuir. *(under review)*
- III. *M. Hmoudah*, A. El-Qanni, R. Tesser, R. Esposito, A. Petrone, O. Jung, T. Salmi, V. Russo, and M. Di Serio Assessment of the Robustness of MIL-88A in an Aqueous Solution: Experimental and DFT Investigations, Materials Science and Engineering: B 288 (2023): 116179. doi.org/10.1016/j.mseb.2022.116179
- IV. M. Hmoudah, M. E. Fortunato, R. Paparo, M. Trifuoggi, A. El-Qanni, R. Tesser, D. Murzin, T. Salmi, V. Russo, M. Di Serio, Ibuprofen adsorption on activated carbon: thermodynamic and kinetic investigation via adsorption dynamic intraparticle model (ADIM), Langmuir, 2023. doi.org/10.1021/acs. langmuir.2c03350
- V. *M. Hmoudah*, A. El-Qanni, S. Abuhatab, N. N. Marei, A. El-Hamouz, B. J. Abu Tarboush, I. H. Alsurakji, H. M. Baniowda, V. Russo, M. Di Serio, Competitive adsorption of Alizarin Red S and Bromocresol Green from aqueous solutions using brookite TiO₂ nanoparticles: experimental and

- molecular dynamics simulation, Environmental Science and Pollution Research 29(51), (2022): 77992-78008. doi.org/10.1007/s11356-022-21368-7
- VI. N. Gallucci, *M. Hmoudah*, E. Martinez, A. El-Qanni, M. Di Serio, L. Paduano, G. Vitiello, V. Russo, Sustainable photodegradation of ibuprofen using CeO₂ nanostructured materials, Journal of Environmental Chemical Engineering 10.3 (2022): 107866. doi.org/10.1016/j.jece.2022.107866
- VII. M. Melchiorre, D. Lentini, M. Cucciolito, F. Taddeo, *M. Hmoudah*, M. Di Serio, F. Ruffo, V. Russo, and R. Esposito. Sustainable ketalization of glycerol with ethyl levulinate catalyzed by the iron(III)-based Metal-Organic Framework MIL-88A, Molecules 27, no. 21 (2022): 7229. doi.org/10.3390/molecules27217229
- VIII. M. Toscanesi, V. Russo, A. Medici, A. Giarra, *M. Hmoudah*, M. Di Serio, M. Trifuoggi, Heterogeneous Photodegradation for the Abatement of Recalcitrant COD in Synthetic Tanning Wastewater, Journal of ChemEngineering 6, no. 2 (2022): 25. doi.org/10.3390/chemengineering 6020025
- IX. A. El-Qanni, M. Alsayed, I. H. Alsurakji, M. Najjar, D. Odeh, S. Najjar, *M. Hmoudah*, M. Zubair, V. Russo, and M. Di Serio. A technoeconomic assessment of biological sludge dewatering using a thermal rotary dryer: a case study of design applicability, economics, and managerial feasibility, Biomass Conversion and Biorefinery (2022): 1-15. doi.org/10.1007/s13399-022-03480-3
- X. V. Russo, *M. Hmoudah*, F. Broccoli, M. R. Iesce, O. S. Jung, and M. Di Serio, Applications of Metal Organic Frameworks in Wastewater Treatment: A Review on Adsorption and Photodegradation, Front. Chem. Eng, 2 (2020): 581487. doi.org/10.3389/fceng.2020.581487
- XI. S. Abuhatab, A. El-Qanni, H. Al-Qalaq, *M. Hmoudah* and W. Ziad, Effective Asorptive Removal of Zn²⁺, Cu²⁺, and Cr³⁺ Heavy Metals from aqueous solutions using Silica-Based Embedded with NiO and MgO Nanoparticles, Journal of Environmental Management 268 (2020): 110713 doi.org/10.1016/j.jenvman .2020.110713
- XII. S. Abuhatab, A. El-Qanni, N. N. Marei, *M. Hmoudah* and A. El-Hamouz, Sustainable Competitive Adsorption of Methylene Blue and Acid Red 88 from Synthetic Wastewater using NiO and/or MgO Silicate Based Nanosorbcats: Experimental and Computational Modeling Studies, RSC Advances 9.61 (2019): 35483-35498. 10.1039/C9RA07001J
- XIII. N. Marei, N.N. Nassar, *M. Hmoudah*, A. El-Qanni, G. Vitale, and A. Hassan, Nanosize Effects of NiO Nanosorbcats on Adsorption and Catalytic Thermo-Oxidative Decomposition of Vacuum Residue Asphaltenes, Canadian Journal of Chemical Engineering (2017): 1864-1874. doi.org/10.1002/cjce.22884
- XIV. *M. Hmoudah*, N. N. Nassar, G. Vitale, and A. El-Qanni, Effect of nanosized and surface-structural-modified nano-pyroxene on adsorption of violanthrone-79, RSC Advances 69 (2016), 64482-64493. doi.org/10.1039/C6RA05838H

Peer-reviewed conference proceeding:

Abu-Safa, A. and *M. Hmoudah*, Engineering Education in Palestine (Evaluation and Accreditation Criteria), Second Conference of Engineering Education in the Arab Homeland in Lebanon, Beirut 22-23th March 2012.

Peer-reviewed abstracts:

- *M. Hmoudah*, C. Chianese, V. Russo, M. Di Serio, T. Salmi, Investigating Photocatalytic Performance and Kinetics of Commercial TiO₂-P25 and ZnO Nanoparticles for Ibuprofen Photodegradation. 15th European congress on catalysis, Prague, Czech Republic, August 27th September 1st, 2023. (Poster presentation)
- *M. Hmoudah*, P. Tolvanen, V. Russo, M. Di Serio, T. Salmi, Revolutionizing Wastewater Treatment: The Potential of Mxenes in Removing Emerging Contaminants, Finnish Young Scientist Forum for Catalysis, March 31st, 2023 (Poster presentation)

- *M. Hmoudah*, V. Russo, M. Di Serio, T. Salmi, The role of Women in STEM, Schlumberger Foundation Faculty for the Future Fellows & Alumnae Regional Forum, Cambridge, United Kingdom, October 23rd-26th, 2022. (Poster presentation)
- *M. Hmoudah*, V. Russo, M. Di Serio, T. Salmi, Innovative Materials for Water Purification, October 21st, 2022, Aurum day (Poster presentation)
- *M. Hmoudah*, A. El-Qanni, R. Tesser, R. Esposito, A. Petrone, F. Taddeo, O.S. Jung, T. Salmi, V. Russo, M. Di Serio, Assessment of the Robustness of MIL-88A in an Aqueous Solution: experimental and DFT investigations, XXII National Congress on Catalysis 2022, Riccione, Italy, 4-7 September, 2022. (Poster presentation)
- O. Tammaro, M. Chianese, *M. Hmoudah*, R. Tesser, L. Fabris, M. Camellone, B. Masenelli, V. Russo, M. Di Serio, S. Esposito, Reverse Micelles Synthesis of Mesoporous Fe-doped CeO₂ as UV/Visible Photocatalyst for Ibuprofen Degradation, 1° Congress Nazionale della Divisione di Chimica per le Tecnologie della Società Chimica Italiana, Naples, Italy, 21-25 August, 2022. (Oral presentation)
- *M. Hmoudah*, M. E. Fortunato, R. Paparo, M. Trifuoggi, R. Tesser, M. Di Serio, V. Russo, Adsorption of Ibuprofen on Activated Carbon: Experimental Data Validation using Adsorption Dynamic Intraparticle Model (ADIM)., 26th International Congress of Chemical and Process Engineering (CHISA), Prague, Czech Republic, 21-25 August, 2022. (Poster presentation)
- *M. Hmoudah*, M. Di Serio, V. Russo, Promising Applications of Metal Organic Frameworks (MOFs) in Wastewater Treatment through Adsorption and Photodegradation., 7th CUCS, Naples, Italy, April 21st-23rd, 2021. (Oral presentation)
- *M. Hmoudah*, N. Gallucci, E. Martinez, A. El-Qanni, M. Di Serio, L. Paduano, G. Vitiello, V. Russo, Sustainable Photodegradation of Ibuprofen using CeO₂ Nanostructured Materials, Merk Young Chemists Symposium, Rimini, Italy, November 22nd-24th, 2021. (Oral presentation)
- *M. Hmoudah*, V. Russo and M. Di Serio, Assessment of the Robustness of Iron-Based Metal organic Frameworks (MIL-88A) in an Aqueous Environment, XXVII Congresso Nazionale della Società Chimica Italiana September 14th-23rd, 2021, Virtual Conference. (Oral presentation)
- *M. Hmoudah*, V. Russo and M. Di Serio, Adsorption and Photocatalytic Degradation of Congo Red Dye from Aqueous Solution using MIL-88 A: Kinetics and Modeling, IUPAC-CCCE 2021 Virtual Conference, Canada, August 13th-20th, 2021. (Oral presentation)
- H. Baniowda, *M. Hmoudah*, A. El-Qanni, S. Abuhata, A. El-Hamouz and N. Marei, Competitive Adsorption and Photocatalytic Degradation of Alizarin Red S and Bromocresol Green Anionic Dyes Using TiO₂ nanoparticles, 2019 AIChE Annual Meeting, Orlando, FL, USA, 10-15 November, 2019.
- A. Shahin, H. Al-qalaq, A. El-Qanni, *M. Hmoudah*, A. El-Hamouz and M. Fuqha, Nickel Oxide Silica Based and Commercial Nickel Oxide Nanosorbcats for Adsorption of Cationic and Anionic Dyes Followed By Thermo-Oxidative Decomposition, 2019 AIChE Annual Meeting, Orlando, FL, USA, 10-15 November, 2019.
- S. Abuhatab, A. El-Qanni, A. El-Hamouz and *M. Hmoudah*, Competitive Adsorption Study of Cationic and Anionic Compounds over in-House Prepared Silicate Based Nanosorbcats, 2018 AIChE Annual Meeting, Atlanta, **Pittsburgh**, **PA**, USA, October 28-November 2, 2018.
- *M. Hmoudah.*, N. N. Nassar, A. El-Qanni, N. N. Marei, G. Vitale, and A. Hassan, Surface and structural-modified pyroxene nanoparticles for adsorption and catalytic thermal decomposition of visbroken residue asphaltenes, to be presented at 2016 AIChE Annual Meeting, San Francisco, U.S., November 13-18, 2016.
- *M. Hmoudah*, N. N. Nassar, G. Vitale, A. Hassan, Silicate-Based Nanoparticles for Enhancing Heavy Oil Quality, 2015 AIChE annual meeting, Salt Lake City, Utah, USA, November 8-13, 2015.

- *M. Hmoudah*, N. N. Nassar, G. Vitale, Adsorptive Removal of Visbroken n-C5 Asphaltenes from Heavy Oil by Silica-Based Nanoparticles, 65th Canadian Chemical Engineering Conference, Calgary, Alberta, Canada, October 4-7, 2015.
- *M. Hmoudah.*, N. N. Nassar, G. Vitale, A. El-Qanni, N. Marei, Development of New Iron Silicate-based Nanoparticles for Adsorptive Removal of Polar Heavy Hydrocarbons from Athabasca Bitumen, Alberta Nanotechnology Symposium, Banff, Alberta, Canada, May 30-31, 2015.
- El-Qanni, A., N. Nassar, E. Ehrmann, *M. Hmoudah*, N. Marei, Hydrocarbons Recovery and Water Recycling from SAGD Produced Water Using Metal Oxide Nanoparticles, Alberta Nanotechnology Symposium, Banff, Alberta, Canada, May 30-31, 2015.
- Marei, N., N. Nassar, G. Vitale, A. El-Qanni, *M. Hmoudah*, Effect of nanosize on adsorptive and catalytic properties of NiO nanoparticles towards Quinolin-65, Alberta Nanotechnology Symposium, Banff, Alberta, Canada, May 30-31, 2015.
- Hamouz, A., A. Jaaron, F. Halawa, B. Shaheen, *M. Hmoudah*, The Impact of Effective Staff Involvement on the Successful Realization of ABET Requirements, 14 AIChE Annual Meeting, Atlanta, GA, USA, November 16-21, 2014.
- *Hmoudah, M.*, N. N. Nassar, G. Vitale, Nano-Iron Silicate for Adsorption of Waste Heavy Hydrocarbons, 64th Canadian Chemical Engineering Conference, Niagara Falls, Ontario, Canada, October 19-22, 2014.

Funded Projects:

- Principle Investigator of the Project entitled "Development of Metal Oxide Based Nanosorbcats for Heavy Metals Treatment in Wastewater (\$15,000)": ANNU-MoHE-1819-Sc002
- Co-Investigator of the project entitled "Development of Metal Oxide Based Nanosorbcats for Wastewater Treatment in the West Bank (\$15,000)": ANNU-MoHE-1819-Sc019
- Co-Investigator of the project entitled "Application of Developed Nanoadsorbent for Waste Engine oil in the West Bank (\$5,000)": ANNU1819 Sc006

Seminar presentation:

- *Hmoudah*, *M*., Nano-Pyroxene for Adsorption and Catalytic Thermal Decomposition of Visbroken Residue Asphaltenes, MSc thesis, Schulich School of Engineering, University of Calgary, April 7th, 2016.
- *Hmoudah, M.*, Pyroxene Nanoparticles for Adsorption and Catalytic Thermo-Oxidative Decomposition of Visbroken Residue Asphaltenes, Catalysis for Bitumen Upgrading Research Group Seminar, University of Calgary, March 15th, 2016.
- *Hmoudah*, *M.*, Nano-Aegirine for Adsorption and Subsequent Oxidation of VO-79 model molecule and Asphaltenes, Catalysis for Bitumen Upgrading Research Group Seminar, University of Calgary, September 4th, 2015.
- *Hmoudah, M.*, Development of Nano-Aegirine Nanoparticles for Adsorptive Removal of Polar Heavy Hydrocarbons, 4th Chair Meeting, University of Calgary, March 10th, 2015.
- *Hmoudah, M.*, Nano-iron silicate for Enhancing Heavy Oil Quality, 3MT presentation, ENCH 601 Research Seminar, Schulich School of Engineering, University of Calgary, November 18th, 2014.

Thesis:

- *Hmoudah, M.*, Innovative Materials for Water Purification, University of Naples Federico II, Naples, Italy, and Åbo Akademi University, Finland (Cotutelle, double degree), 2024.

- *Hmoudah, M.*, Nano-Pyroxene for Adsorption and Catalytic Thermal Decomposition of Visbroken Residue Asphaltenes, Master of Science Thesis, Schulich School of Engineering, University of Calgary, Canada, 2016.
- *Hmoudah, M.*, Charcoal Production and its Pollution Mitigation, Bachelor of Science Thesis, An-Najah National University, West Bank, Palestinian Authority, 2009.

PROFESSIONAL AFFILIATIONS

- Member of SCI Giovani (membership # 24134), Italy, June 2021-Present.
- Director: AIChE student chapter, An-Najah National University, May 2017-Present.
- Member: Chemical Institute of Canada and Constituent Societies (MCIC), 2014-present.
- Research Assistant in CBUG, University of Calgary, 2014-2016.
- Scholar of An-Najah National University, 2013-2016.
- Member: American Institute of Chemical Engineers, USA. (AIChE), 2012-present.
- Member: Institute of Chemical Engineers, UK. (IChemE), 2011-2016.
- Member: Jordanian Engineers Association, 2009-present.

PROFESSIONAL CIRTIFICATIONS AND DEVELOPMENTS

- Safety Training Course, University of Naples Federico II, May, 2021.
- Coaching workshop, Center of Excellence in Learning and Teaching (An-Najah National University), August, 2019.
- Creating and editing instructional video, Center of Excellence in Learning and Teaching (An-Najah National University), August, 2019.
- Community based learning, Center of Excellence in Learning and Teaching, (An-Najah National University), August, 2018.
- Instructor TA: How to make the teamwork work, University of Calgary, April 2015.
- Instructional skills workshop for faculty members and graduate students, University of Calgary, April 2015.
- Graduate student teaching workshop: What makes a great TA? What is great about being a TA, University of Calgary, March 2015.
- Writing course learning outcomes and planning student assessment, University of Calgary, December 2014.
- First time TA orientation workshop, University of Calgary, September 2014.
- Overview of the NI LabVIEW environment, University of Calgary, April 2014.
- VMGSim Training Course, University of Calgary, March 2014.
- Valve Tube Bending Training Course, University of Calgary, February 2014.
- Workplace Hazardous Materials Information systems (WHIMIS), University of Calgary, February 2014.
- H₂S Alive, University of Calgary, February 2014.
- French Course (Level 4), September 2013.
- IELTS academic band score 6.5, February 2013.

REFERENCES

Prof. Martino Di Serio, Ph.D, Department of Chemical Sciences, Professor, University of Naples Federico II, Address: Via Cintia, Monte Sant'Angelo, 80126 Napoli, Italy, Phone: +39 081 674414, Email: diserio@unina.it

Prof. Tapio Salmi, Ph.D, Department of Chemical Reaction Engineering, Professor, Åbo Akademi University Address:AURUM, Henriksgatan 2, FI-20500 Turku/Åbo, Finland, Phone: 358 2 215 31, Email: tapio.salmi@abo.fi

Prof. Amer El-Hamouz, Ph.D, Department of Chemical Engineering, Professor, An-Najah National University, Address: Aljunaid Area, Rafidia P.O.Box 7 Nablus Palestinian Territories, Phone: +970 9 2345113 ext. 2199, Email: elhamouz@najah.edu

Dr. Ayham Jaaron, Ph.D, Department of Management and Entrepreneurship, Senior Lecturer in Business and Management, De Montfort University, Address: Hugh Aston, Leicester, LE2 7BY, UK, Phone: +44 (0) 116 366 4270, Email: ayham.jaaron@dmu.ac.uk

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