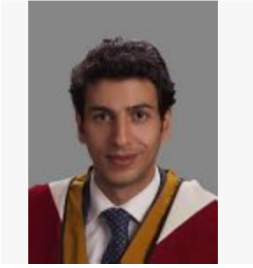


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Mohammed Rasool Qtaishat

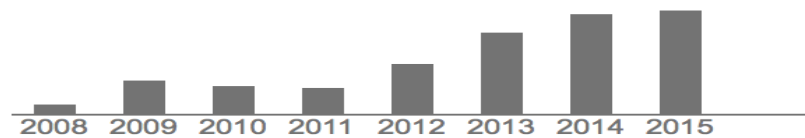
Associate Professor, Chemical Engineering Department, The University of Jordan

[Desalination](#), [membrane technology](#), [solar energy](#), [heat and mass transfer](#)

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PERSONAL DETAILS

Name Mohammed Rasool Qtaishat
Marital Status Married
Date of Birth 17/11/1978
Nationality Jordanian
Term Address Chemical Engineering Department
The University of Jordan
Amman 11942, Jordan
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Current Position Associate Professor at University of Jordan

EDUCATION

2005 - 2008 *Ph.D. in Chemical Engineering*
University of Ottawa, Ottawa, Ontario, Canada.
Thesis title: *Design of Novel Membranes for Desalination by Direct Contact Membrane Distillation*

2001 - 2004 *M.Sc. in Chemical Engineering*
Jordan University of Science and Technology, Irbid, Jordan.
Thesis title: *Use of Vacuum Membrane Distillation for Concentrating Sugars and Dyes from their Aqueous Solutions*

1996 - 2001 *B.Sc. in Chemical Engineering*
Jordan University of Science and Technology, Irbid, Jordan.
Thesis title: *Removal of Heavy Metals from Wastewater by Adsorption Using Waste Tires as an Adsorbent*

AWARDS AND SCHOLARSHIPS

- Technology Venture Challenge Award, first prize winner 2008, Ottawa, Ontario, Canada (<http://www.ottawatechcommunity.ca>)
- University of Ottawa Doctoral Research Award, 2006-2008.
- Middle East Desalination Research Center scholarship (MEDREC) for PhD, 2005 – 2008.
- EUROMED 2008, DEAD SEA 9-13 November 2008, Best Poster presentation Award.

MEMBERSHIP ASSOCIATION

- Jordanian Engineers Association
- The Jordanian Association for Water Desalination and Reuse

WORK EXPERIENCE

April 2014 -Present Associate Professor at Chemical Engineering Department, the University of Jordan

Jan. 2009- April 2014 Assistant Professor at Chemical Engineering Department, the University of Jordan

- **Undergraduate Courses:** *Chemical Reaction Engineering I, Chemical Reaction Engineering II, Petroleum Refining Engineering, Desalination, Local Industries, Process Safety Engineering.*
- **Graduate Courses:** *Advanced Mass Transfer and Wastewater Treatment*

Jan. 2005- Jan 2009 Research and Teaching Assistant at University of Ottawa
Duties involve:

- Conducting research in the field of membrane technology aiming at the development of novel membranes for desalination by direct contact membrane distillation in collaboration with Middle East Desalination Research Center, Muscat, Oman and University Complutense of Madrid, Madrid, Spain.
- Teaching assistant in many undergraduate courses such as: Process Synthesis, Phase Equilibria (thermodynamics I), 3rd and 4th year laboratories
- Supervising five undergraduate ChE senior projects

Aug 2003- Dec 2004 Process Engineer at Jordan Petroleum Refinery Company, Jordan

Duties involve:

- Processing of Hydrocracking unit for gasoline and diesel special cuts production.
- Processing of Steam reforming unit for hydrogen production.
- Processing of Vacuum distillation unit.
- Research and Development Engineer for process improvement and trouble shooting.
- Supervising 50 employees in the company

Jan 2001 – July 2003 Researcher and Teaching Assistant at Jordan University of Science and Technology (JUST), Jordan

Duties involve:

- Conducting research in the field of membrane technology aiming at the dyed wastewater treatment and recovery of sucrose by vacuum membrane distillation
- Teaching assistant in many undergraduate courses such as: thermodynamics, process control and chemical reaction engineering.
- Supervising many chemical engineering laboratories such as petroleum refining engineering, heat transfer, unit operations.

RESEARCH INTEREST

- Membrane distillation.
- Membrane Bioreactor.
- Water Desalination.
- Solar energy
- Wastewater treatment

Current Research work

- Designing of hollowfibre/spiral wound membranes modules for membrane distillation.
- Integrating solar energy to membrane distillation for the desalination application.
- Development of clay membranes for desalination by nanofiltration and reverse osmosis.

INTERESTS AND SKILLS

Computer Skills

Word and Data processing software (e.g. Excel, Word, and PowerPoint); Lab View, Programming in MATLAB and

POLYMATH, processing of special Chem. Eng. packages such as HYSIS and ASPENTECH.

Communication Skills

Excellent communication in English
Little knowledge of Spanish

Interests

Music, Cinema, soccer, swimming, chess

PATENTS

- [1]. **M. Qtaishat**, S. Al-Muttiri “NOVEL TECHNIQUES FOR PREPARING MULTI-LAYER POLYMERIC AND MIXED MATRIX MEMBRANES AND A DEVICE FOR MEMBRANE DISTILLATION”. **WO Patent: WO/2014/111889, (2014).**
- [2]. **M. Qtaishat**, S. Al-Muttiri, M. Al-Rajabi, F. Banat “NOVEL POLYMERIC AND MIXED MATRIX MATERIALS FOR SOLAR WICKED STILLS DESLIANTION”. **PCT Application: PCT/IB2014/058356, (2015).**
- [3]. **M. Qtaishat**, T. Matsuura, M. Khayet “COMPOSITE MEMBRANES FOR MEMBRANE DISTILLATION AND RELATED METHODS OF MANUFACTURE”. **WO Patent: WO/2012/100318, (2012).**
- [4]. **M. Qtaishat**, T. Matsuura, M. Khayet, S. Al-Muttiri “COMPOSITE MIXED MATRIX MEMBRANES FOR MEMBRANE DISTILLATION AND RELATED METHODS OF MANUFACTURE”. **WO Patent: WO/2012/100326 (2012).**

JOURNAL PUBLICATIONS

- [1]. **M. Qtaishat**, F. Banat “Desalination by solar powered membrane distillation systems”, *Desalination*, 308, 186-197, 2013.
- [2]. K. Bani-Melhem, Z. Al-Qodah, M. Al-Shannag, A. Qasaimeh, **M. Qtaishat**, M. Alkasrawi “On the performance of real grey water treatment using a submerged membrane bioreactor system” *Journal of Membrane Science*, 476, 40-49, 2014.

- [3]. M. Al-Shannag, Z. Al-Qodah, K. Bani-Melhem, **M. Qtaishat**, M. Alkasrawi “Heavy metal ions removal from metal plating wastewater using electrocoagulation: Kinetic study and process performance” *Chemical Engineering Journal*, 260, 749-756, 2015.
- [4]. **M. Qtaishat**, M. Khayet, T. Matsuura, K.C. Khulbe “Effect of Casting Conditions on SMM Blended Polyethersulfone Hydrophobic/Hydrophilic Composite Membranes: Characteristics and Desalination Performance in Membrane Distillation”, *Journal of Applied Membrane Science and Technology*, 11, 1-8, 2010.
- [5]. **M. Qtaishat**, T. Matsuura, B. Kruczek, M. Khayet, “Heat and mass transfer analysis in direct contact membrane distillation”, *Desalination*, 219, 272-292, 2008.
- [6]. **M. Qtaishat**, D. Rana, M. Khayet, T. Matsuura, “Preparation and characterization of novel hydrophobic/hydrophilic polyetherimide composite membranes for desalination by direct contact membrane distillation”, *Journal of Membrane Science*, 327, 264-273, 2009.
- [7]. **M. Qtaishat**, M. Khayet, T. Matsuura, “Guidelines for preparation of higher flux hydrophobic/hydrophilic composite membranes for membrane distillation”, *Journal of Membrane Science*, 327, 193-200, 2009.
- [8]. **M. Qtaishat**, K.C. Khulbe, T. Matsuura, M. Khayet, “Comparing the desalination performance of SMM blended polyethersulfone to SMM blended polyetherimide membranes by direct contact membrane distillation”, *Desalination and Water Treatment*, 5, 91-98, 2009.
- [9]. **M. Qtaishat**, M. Khayet, T. Matsuura, “Novel porous composite hydrophobic/hydrophilic polysulfone membranes for desalination by direct contact membrane distillation”, *Journal of Membrane Science*, 341, 139-148, 2009.
- [10]. **M. Qtaishat**, T. Matsuura, M. Khayet “Effect of surface modifying macromolecules stoichiometric ratio on composite hydrophobic/hydrophilic membranes characteristics and performance in membrane distillation”, *AIChE Journal*, 55(12), 3145-3151, 2009.

- [11]. Mohamad Khayet, Takeshi Matsuura, **Mohammed R. Qtaishat**, Juan I. Mengual, “Porous hydrophobic/hydrophilic composite membranes preparation and application in DCMD desalination at higher temperatures”, *Desalination*, 199, 180-181, 2006.
- [12]. M. Khayet, T. Matsuura, J. Mengual, **M. Qtaishat**, “Design of novel direct contact membrane distillation membranes”, *Desalination*, 192, 105-111, 2006.
- [13]. F. Banat, S. Al-Asheh, **M. Qtaishat**, “Treatment of waters colored with methylene blue dye by vacuum membrane distillation”, *Desalination*, 174, 87-96, 2005.
- [14]. S. Al-Asheh, F. Banat, **M. Qtaishat**, M. Al-Khateeb, “Concentration of sucrose solutions via vacuum membrane distillation”, *Desalination*, 195, 60-68, 2006.

Book Chapters

- [1]. **Mohammed Rasool Qtaishat**, Takeshi Matsuura “Modeling of pore wetting in membrane distillation compared to pervaporation”. In: *Pervaporation, Vapour permeation and Membrane Distillation*, **Taylor and Francis group, Oxford, UK, 2015.**
- [2]. Takeshi Matsuura, Dipak Rana, **Mohammed Rasool Qtaishat**, Gurdev Singh, “Recent advances in membrane science and technology in sea water desalination –With technology development in the middle east and Singapore”. In: *Encyclopaedia of Life Support Systems (EOLSS)*, Developed under the Auspices of the **UNESCO, Eolss Publishers, Oxford, UK, (2011).**
- [3]. **M. Qtaishat**, M. Khayet, T. Matsuura, Integrating hydrophobic surface modifying macromolecules into hydrophilic polymers to produce membranes for membrane distillation, In: *Membrane Modification, Technology and Application* (Eds. N. Hilal, M. Khayet, C. Wright), **Taylor and Francis group, Oxford, UK, 2012.**

CONFERENCES

- [1]. **M. Qtaishat**, “Novel mixed matrix nanocomposite membranes for membrane distillation” Presented at the International Workshop on Membrane Distillation and Water Reuse, Ravello (SA), Italy, July 4-7, 2015
- [2]. **M. Qtaishat** “Assymetric temperature and concentration polarization in membrane distillation”, Presented at the International Conference on Desalination Using Membrane Technology, Barcelona, Spain, April 7-10, 2013.
- [3]. **M. Qtaishat**, T. Matsuura, M. Khayet “Effect of surface modifying macromolecules stoichiometric ratio on composite hydrophobic/hydrophilic membranes characteristics and performance in membrane distillation”, Presented at ICOM 2008, July 12-18, 2008.
- [4]. **M. Qtaishat**, K.C. Khulbe, T. Matsuura, M. Khayet, “Comparing the desalination performance of SMM blended polyethersulfone to SMM blended polyetherimide membranes by direct contact membrane distillation”, Presented at EUROMED 2008, Dead Sea, November 9-13 2008.
- [5]. **M. Qtaishat**, M. Khayet, T. Matsuura, K.C. Khulbe “Effect of Casting Conditions on SMM Blended Polyethersulfone Hydrophobic/Hydrophilic Composite Membranes: Characteristics and Desalination Performance in Membrane Distillation”, Presented at The 7th international conference on membrane science and technology (MST 2009), Kuala Lumpur, Malaysia May 12-15, 2009.
- [6]. **M. Qtaishat**, M. Khayet, T. Matsuura “Novel porous composite hydrophobic/hydrophilic polysulfone membranes for desalination by direct contact membrane distillation: Effect of membrane casting conditions”, Presented at the 2nd International chemical engineering conference, Amman, Jordan, October 11-13, 2010.
- [7]. **M. Qtaishat**, M. Khayet, T. Matsuura “Design of novel hydrophobic/hydrophilic composite membranes for desalination by membrane distillation”, Presented at the International Workshop on Membrane Distillation and Related Technologies, Ravello (SA), Italy, October 9-12, 2011.

Thesis Supervision

- [1]. **Title of Master Thesis:** Comparing the Membrane Distillation Desalination Performance of the Hydrophobic/Hydrophilic Membranes to the Commercial Membranes
- [2]. **Title of Master Thesis:** Design and synthesis of hydrophilic based solar tree for sea water desalination
- [3]. **Title of Master Thesis:** A comparative study for the removal of heavy metals from wastewater by adsorption using Jordanian local plants and membrane distillation.

Research Support

- [1]. **Title of funded proposal:** Comparing the Membrane Distillation Desalination Performance of the Hydrophobic/Hydrophilic Membranes to the Commercial Membranes
Funding Agencies: Support to Research and Technological development & Innovation Initiative & Strategies in Jordan (SRTD) and Spanish Cultural Bureau
Performance Period: 18 months (*Completed project*)
Funded amount: €30,000 from SRTD & €29,000 from the Spanish cultural bureau
- [2]. **Title of funded proposal:** Development and Optimization of Modified Hollow Fiber Membranes with Surface Modifying Macromolecules for Industrial Desalination by Membrane Distillation
Funding Agency: Spanish Ministry of higher education
Performance Period: 36 Months
Funded amount: €50,000.00
- [3]. **Title of funded proposal:** Autonomous membrane distillation units driven by solar energy using novel hydrophobic/hydrophilic spiral wound membrane modules for desalination of sea and brackish water
Funding Agency: Membrane Distillation Desalination Co. Ltd. (Saudi Arabia)
Performance Period: 36 months
Funded amount: \$300,000.00

OTHER ACTIVITIES

- Director of Water, Energy and Environment Center, The University of Jordan, since 01/08/2015.
- Academic vice-president of the Chemical Engineering graduate students' association, University of Ottawa, Ottawa, Canada.
- Teaching activities at the enrichment mini course at the University of Ottawa.
- Organizing seminars and group meetings at the Industrial Membrane Research Institute.

REFERENCES

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