

CURRICULUM VITAE
Prof. Hassan A. Arafat

March 4, 2019



Center for Membranes & Advanced Water Technology
Masdar Institute, Khalifa University of Science and Technology

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EDUCATION

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| 2000 | Ph.D., Chemical Engineering, University of Cincinnati (USA). Dissertation Title: "Effect of Chemical Surface Heterogeneity on the Adsorption Mechanism of Dissolved Aromatics on Activated Carbon with Applications in Solidification/Stabilization Processes for Hazardous Waste Treatment" |
| 1996 | B.S., Chemical Engineering, University of Jordan, Amman, Jordan |

RESEARCH INTERESTS

(current)

- Desalination
- Membrane development for water and wastewater applications
- Solid waste management

PROFESSIONAL EXPERIENCE

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| 2018 – Present | Director, Center for Membranes & Advanced Water Technology, Khalifa University of Science and Technology, Abu Dhabi, UAE |
| 2015 – Present | Professor, Chemical Eng. Dept., Khalifa University of Science and Technology (formerly, Masdar Institute), Abu Dhabi, UAE |
| 2010 – 2015 | Associate Professor, Chemical and Environmental Eng. Dept., Masdar Institute of Science and Technology, UAE |
| 2011 – 2012 | Program Coordinator, Water and Environmental Eng. Program, Masdar Institute of Science and Technology, UAE |
| 2010 | Visiting Scholar, Mechanical Eng. Dept., Massachusetts Institute of Technology (MIT), USA (Jun. – Dec.) |
| 2009 – 2012 | Adjunct Associate Professor, Biological Eng. Dept., Utah State University, USA |
| 2008 – 2010 | Associate Professor, Chemical Eng. Dept., An-Najah National University, West Bank, Palestinian Territory |
| 2003 – 2008 | Assistant Professor, Chemical Eng. Dept., An-Najah National University |
| 2001 – 2003 | Research Scientist, Chemical Technology Division, Argonne National Laboratory, USA |
| 2000 – 2001 | Postdoctoral Associate, Chemical Technology Division, Argonne National Laboratory, USA |
| 1996 – 2000 | Graduate Research Assistant, Chemical Eng. Dept., University of Cincinnati, USA |

AWARDS, HONORS & RECOGNITIONS

Awards

- 2017 **Khalifa Award for Education**, UAE. Category: Distinguished University Professor in Scientific Research. Presented by the President of UAE (the highest honor in the education sector in the UAE).
- 2017 **Mohammad Bin Rashid Medal for Scientific Excellence**, UAE. Presented by the Prime Minister of UAE.
- 2013 **USA Department of Energy (DOE) Secretarial Honor Award**, USA. Presented by the US Secretary of Energy (DOE's highest form of non-monetary employee recognition).
- 2015 Best paper award, 32nd European Membrane Society Summer School, Liberec, Czech Republic.
- 2015 Hospitality Technology Award, Hospitality Technology Forum, UAE.
- 2013 Best presentation award, World Resources Forum, Davos, Switzerland.
- 2005 **Mondialogo Engineering Award**, Germany, with special jury recognition. Presented jointly by Daimler AG and UNESCO (214 competing entries by 1700 participants from 79 countries).
- 2004 Zuhair Hijjawi Award, Palestinian Territory
- 2000 Outstanding Graduate Student in Research Award, Univ. of Cincinnati, USA.

Recognitions (selected)

- 2017 - Present Member, Mohammad Bin Rashid Academy of Scientists, UAE.
- 2018 Theme chair & organizing committee member, 6th Arab-American Frontiers of Science, Engineering, and Medicine Symposium, Kuwait. By invitation of the US National Academy of Sciences.
- 2016 Chair, 9th International Desalination Workshop, UAE (co-Chair: Prof. S. H. Kim, S. Korea). In partnership with International Desalination Association & European Desalination Society.
- 2016 Theme chair & organizing committee member, 4th Arab-American Frontiers of Science, Engineering, and Medicine Symposium, UAE. By invitation of the US National Academy of Sciences.
- 1999 - 2000 **Distinguished Dissertation Fellowship**, Univ. of Cincinnati, USA (one of only two fellowships awarded annually).
- 1998, 1999, 2000 Research Council Summer Fellowship, Univ. of Cincinnati, USA.
- 1996 - 1999 Graduate Research Scholarship, Univ. of Cincinnati, USA (Full tuition & stipend)
- 1992 - 1996 Dean's Honor List, Univ. of Jordan, Jordan
- 2009 - Present Editorial board member of: Desalination and Water Treatment Journal (2014-), Applied Water Science Journal (associate editor, 2019-) Membrane Water Treatment (2015-), IDA Journal of Desalination and Water Reuse (2014-2015), International Journal of Water Sciences (2013-2014), Journal of Membrane and Separation Technology (2012-), Journal of Soil and Water Science (2016-).

GRANTS & FUNDING

- 2018 - 2021 (\$3.5M) Khalifa University Center for Membrane and Advanced Water
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	Technology (seed funding) (Founding Director). Khalifa University of Science and Technology (KU). Funding: KU Internal strategic funding grant.
2017 - 2020	(\$350k) Water desalination in the UAE using low-energy reverse osmosis process (PI). Masdar Institute. Funding: The Korean Agency for Infrastructure Technology Advancement (via Korea University) (S. Korea).
2014 - 2016	(\$905k) Fouling assessment and mitigation in utility-scale membrane distillation systems for brine management (PI). Masdar Institute. Funding: Abengoa Water Co. (Spain).
2014 - 2016	(\$500k) Economic analysis of solar powered desalination (PI). Masdar Institute. Funding: Suez Environment (France).
2014 - 2015	(\$300k) Novel module configurations for high efficiency Membrane Distillation-Project extension (Co-PI w/ J. Lienhard, MIT). Masdar Institute. Funding: MIT&MICP Innovation Program.
2014 - 2015	(\$105k) Membrane Distillation (VMD) System Using Aspirator for Reduced Cost and Enhanced Water Recovery (PI). Masdar Institute. Funding: British Petroleum Co. (via Masdar Institute Technology Innovation Program).
2014 - 2015	(\$100k) Novel module configurations for high efficiency Membrane Distillation (Co-PI w/ J. Lienhard, MIT). Masdar Institute. Funding: MIT&MICP Innovation Program.
2014 - 2015	(\$12k) More than just water security: Ecological, political, and social implications of our efforts to bridge the water gap: Symposium and seminar series (Project lead w/ P. Jacques, UCF). Masdar Institute. Funding: The Hollings Center & Univ. of Central Florida (USA).
2012 - 2015	(\$3.6M) Development of advanced membrane water purification systems: fabrication, fouling resistance, and system configuration (Co-PI w/ R. Hashaikeh, N. Hilal J. Lienhard, G. Rutledge, K. Gleason). Masdar Institute. Funding: Masdar Institute/MIT flagship collaborative project.
2011 - 2012	(\$112k) Development of novel, sustainable and eco-efficient poly(lactic acid) membranes for membrane distillation (Co-PI w/ R. Hashaikeh). Masdar Institute. Funding: Masdar Institute Internal grant.
2010 - 2012	(\$100k) A novel boron tracing technology supporting critical performance evaluation of desalination processes in the UAE (Co-PI w/ F. Ahmad). Masdar Institute. Funding: Masdar Institute Internal grant.
2010 - 2012	(\$900k) Development of renewable energy powered membrane distillation process (co-PI w/ J. Lienhard and G. Rutledge, MIT). Masdar Institute. Funding: Masdar Institute and MIT Collaborative Program.
2006 - 2010	(\$105k) Development of polymer nanofiber, micro-fiber and hollow-fiber membranes for desalination by membrane distillation (co-PI w/ M. Khayet, U. Madrid). An Najah Univ. Funding: Middle East Desalination Research Center (Oman).
2006 - 2008	(\$125k) Development of an effective process for evaluation of faculty teaching performance leading to enhanced teaching methodologies (project lead). An Najah Univ. Funding: World Bank.
2006 - 2007	(\$100k) Utilization of dairy whey in the Palestinian Territories (PI). An Najah Univ. Funding: Islamic Development Bank (KSA).
2005 - 2008	(\$115k) Preparation of thin film composite reverse osmosis membranes with reduced fouling for seawater desalination (Co-PI w/ T. Matsuura, U. Ottawa, Canada). An Najah Univ. Funding: Middle East Desalination Research Center

	(Oman).
2005	(\$4k) Pollution prevention by recovery and reuse of hazardous wastewater from textile washing operations in Palestine (PI). An Najah Univ. Funding: Palestinian American Research Center (USA).
2005 - 2009	(\$156k) Design of novel membranes for desalination by direct contact membrane distillation (Subcontractor w/ T. Matsuura & M. Khayet). An Najah Univ. Funding: Middle East Desalination Research Center (Oman).
2004 - 2006	(\$10k) Critical improvements of the drinking water disinfection system within the Nablus municipality (PI). An Najah Univ. Funding: UNESCO.
2002 - 2004	(\$2.47M) IS-MIO process for Sr and actinides removal from SRS salt waste (PI). ANL. Funding: DOE, USA.
2001-2003	(\$250k) A new process for the removal of hazardous organic compounds from contaminated groundwater using an environmentally friendly solvent extraction technology (PI). ANL. Funding: ANL (USA).
2001-2002	(\$160k) Removal of Sr and TRU elements from alkaline tank waste using in-situ generated magnetite (PI). ANL. Funding: National Energy Technology Laboratory (USA).

GRAD. STUDENTS & RESEARCH STAFF SUPERVISED

Research staff

2019 – Present	Dr. Navya Thomas, Postdoctoral associate, Khalifa University.
2019	Dr. Munirasu Selvaraj, Research Scientist, Khalifa University.
2018 – Present	Dr. Mahendra Kumar, Research Scientist, Khalifa University.
2018 – Present	Eng. Nurshaun Sreedhar, Research Engineer, Khalifa University.
2015 – 2016	Eng. Savvina Loutatidou, Research Engineer, Masdar Institute.
2016 – 2016	Dr. Joanna Kujawa, Postdoctoral associate, Masdar Institute.
2015 – 2016	Dr. Samer Al-Gharabli, Research Scientist, Masdar Institute.
2015 – 2016	Dr. Sudip Chakraborty, Postdoctoral associate, Masdar Institute.
2015 – 2016	Eng. Virginie Dufour, Research Engineer, Masdar Institute.
2013 – 2015	Dr. Mohamed Roil Bilad, Postdoctoral associate, Masdar Institute
2011 – 2014	Dr. Elena Guillen-Burrieza, Postdoctoral associate, Masdar Institute
2011– 2013	Dr. Rinku Thomas, Postdoctoral associate, Masdar Institute
2011– 2012	Eng. Ali Farhat, Research Engineer, Masdar Institute.

PhD students

2018 – Present	Roqaya Ismail, Khalifa University. Thesis subject: Water Desalination in the UAE Using Low Energy RO Process
Graduated 2018	Navya Thomas, Khalifa University. Thesis title: Flux enhancement and scaling control in membrane distillation systems using 3D printed spacers based on triply periodic minimal surfaces

Graduated 2018	Pelin Yazgan, Khalifa University. Thesis title: “Investigation of membrane distillation process performance at pore-scale and module-scale via computational fluid dynamics modeling”.
Graduated 2017	Musthafa Mavukkandy, Masdar Institute. Thesis title: “Tailoring of PVDF membranes by blending and chemical modification for enhanced applications in wastewater treatment and membrane distillation”.
Graduated 2017	Omar Asad, Masdar Institute. Thesis title: “Optimization framework for integrated water and power sector strategic planning: A techno-economic nexus approach (A case for Abu Dhabi)”.
Graduated 2016	Sanaa Pirani, Masdar Institute. Thesis title: “Sustainable Waste Management: Food Waste in the UAE Hospitality Industry”
Graduated 2015	Faisal Al-Marzooqi, Masdar Institute. Thesis title: “Interplay of membrane fabrication and nanotechnology in water desalination”

MSc students

2018 – Present	Ghaiath Almustafa, Khalifa University. Thesis subject: Water Pre-Treatment for Desalination Using Novel Green Solvents (co-advised w/ E. Nashef)
2017 – Present	Mariam Ouda, Khalifa University. Thesis subject: Novel system for algae removal in RO desalination plants
Graduated 2018	Yazan Ibrahim, Khalifa University. Thesis title: “Development of a sustainability decision support framework for different seawater desalination technologies: United Arab Emirates case study” (co-advised w/ F. Al Marzooqi)
Graduated 2017	Taofeeqah Agbaje, Masdar Institute. Thesis title: “Synthesis of PVDF membranes with magnetic nanoparticles for applications in desalination and wastewater treatment”
Graduated 2017	Nurshaun Sreedhar, Masdar Institute. Thesis title: “Novel 3D printed spacers based on triply periodic minimal surfaces (TPMS) to enhance reverse osmosis and ultrafiltration performance”
Graduated 2017	Cynthia Elizalde, Masdar Institute. Thesis title: “Development of Novel PVDF Membranes with Enhanced Transport using Chitosan for Membrane Distillation and Microfiltration”
Graduated 2017	Saeed Kaddoura, Masdar Institute. Thesis title: “Investigating Water Security in the U.A.E. Through a Holistic Integrated Analysis of the Water-Energy-Food Nexus” (co-advised w/ S. Al Khatib)
Graduated 2017	Shefaa Mansour, Masdar Institute. Thesis title: “Optimization of Reverse Osmosis Brine Treatment using Direct Contact Membrane Distillation and Membrane Fouling Mitigation using Graphene Nanoplatelets” (co-advised w/ S. Hasan)
Graduated 2016	Eanna Farrell, Masdar Institute. Thesis title: “Reverse electro dialysis powered greenhouse concept for water- and energy self-sufficient agriculture”
Graduated 2015	Savvina Loutatidou, Masdar Institute. <i>Winner of Masdar Institute’s Best Thesis Award for the 2015 Class.</i> Thesis title: “Techno-economic analysis of renewably-powered desalination in the UAE”
Graduated 2015	Jehad Kharraz, Masdar Institute. Thesis title: “Development of corrugated polyvinylidene fluoride (PVDF) membranes for fouling control in membrane bioreactors (MBR) and membrane distillation (MD)”
Graduated 2013	Tariq Al-Sarkal, Masdar Institute. Thesis title: “Ultrafiltration versus sedimentation-based pretreatment for seawater feed to RO plants: Environmental

impact study”

Graduated 2013	Lin Li, Masdar Institute. Thesis title: “Development of novel eco-efficient electrospun poly (lactic acid) membranes”
Graduated 2013	Stephen Fadeyi, Masdar Institute. Thesis title: “Life cycle assessment of natural gas combined cycle integrated with CO ₂ post combustion capture using chemical solvent” (co-advised w/ M. Abu Zahra)
Graduated 2012	Rasha Saffarini, Masdar Institute. <i>Winner of Masdar Institute’s Best Thesis Award for the 2012 Class</i> . Thesis title: “Evaluation and enhancement of solar powered membrane distillation process”
Graduated 2012	Kenan Jijakli, Masdar Institute. Thesis title: “Environmental assessment using life cycle assessment (LCA) approach: a case study on waste management and solar desalination”
Graduated 2008	Bilal Abu-Tarboosh, Univ. of Ottawa. Thesis title: “Preparation of thin-film-composite polyamide membranes for desalination using novel hydrophilic surface modifying macromolecules” (co-advised w/ T. Matsuura)
Graduated 2008	Majdi Abu-Awwad, An-Najah U., Palestinian Territory. Thesis title: “Medical waste management in primary health care centers and private clinics: Jenin district as a case study”
Graduated 2007	Jafar Eid, An-Najah Univ., Palestinian Territory. Thesis title: “Evaluation of solid waste management in Qalqilia district”

Visiting students

2014	Sara Maes, MSc student at KU Leuven, Belgium (advisor: Prof. Ivo Vankelecom).
2012	Shada Salem, Ph.D. student at University of Cincinnati, USA.

Thesis committees & examiner

External

2018	Thesis external examiner, Inci Boztepe (MSc student), Victoria Univ., Australia. (Advisor: Prof. S. Gray)
2016	Thesis committee member, Cejna Quist-Jensen (PhD student), Univ. of Calabria, Italy (Advisor: Prof. E. Drioli)
2016	Thesis committee member, Giuseppe Vitola (PhD student), Univ. of Calabria, Italy (Advisors: Prof. L. Giorno & Prof. E. Drioli)
2016	Thesis committee member, Jenny Borisova Evtimova (PhD student), Univ. of Calabria, Italy (Advisors: Prof. G. De Luca & Prof. E. Drioli)
2016	Thesis committee member, Jessica Settino (PhD student), Univ. of Calabria, Italy (Advisors: Prof. M. Amelio)
2016	Thesis committee member, Ramato Tufa (PhD student), Univ. of Calabria, Italy (Advisors: Prof. E. Curcio & Prof. E. Drioli)
2016	Thesis external examiner, Amira Al Khatib (MSc student), Qatar Univ., Qatar (Advisor: Prof. F. Benyahia)
2015	Thesis committee member, David Warsinger (PhD student), Massachusetts Institute of Technology, USA (Advisor: Prof. J. Lienhard)

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- 2014 Thesis external examiner, Mohammad Ramezani Pour (PhD student), University of Wollongong, Australia (Advisor: Prof. M. Sivakumar)
- 2013 Thesis committee member, Edward Summers (PhD student), Massachusetts Institute of Technology, USA (Advisor: Prof. J. Lienhard)
- 2011 Thesis committee member, Misheka Wilson (MSc student), Utah State Univ., USA. (Advisor: Prof. R. Simms)
- 2010 Thesis external examiner, Jianhua Zhang (PhD student), Victoria Univ., Australia. (Advisor: Prof. S. Gray)
- 2008 Thesis external examiner, Mohammad Qutaishat (PhD student), Univ. of Ottawa, Canada. (Advisor: Prof. T. Matsuura)

Internal

- 2019 Thesis committee member, Rana Malas, M.Sc. student, Khalifa University (Advisor: Prof. E. Nashef)
- 2019 Thesis committee member, Reham Alnuaimi, M.Sc. student, Khalifa University (Advisor: Prof. E. Alhseinat)
- 2019 Thesis committee member, Arwa Alshareif, M.Sc. student, Khalifa University (Advisor: Prof. F. Al Marzooqi)
- 2019 Thesis committee member, Sarah Marzouk, M.Sc. student, Khalifa University (Advisor: Prof. S. Hasan)
- 2019 Thesis committee member, Maryam Alkindy, M.Sc. student, Khalifa University (Advisor: Prof. S. Hasan)
- 2018 Thesis committee member, Mohamed Alzaabi, Ph.D. student, Khalifa University (Advisor: Prof. T. Mezher)
- 2018 Thesis committee member, Reyihangu sulaiman, M.Sc. student, Khalifa University (Advisor: Prof. E. Nashef)
- 2018 Thesis committee member, Adewale Giwa, PhD student, Khalifa University (Advisor: Prof. S. Hasan)
- 2017 Thesis committee member, Muhammad Azman, M.Sc. student, Masdar Institute (Advisor: Prof. A. Henschel)
- 2017 Thesis committee member, Noora Al Hammadie, M.Sc. student, Masdar Institute (Advisor: Prof. R. Hashaikeh)
- 2016 Thesis committee member, Shamma Al Jaberi, M.Sc. student, Masdar Institute (Advisor: Prof. S. El Khatib)
- 2016 Thesis committee member, Nawshad Akther, M.Sc. student, Masdar Institute (Advisor: Prof. S. Hasan)
- 2016 Thesis committee member, Sahar Daer, M.Sc. student, Masdar Institute (Advisor: Prof. S. Hasan)
- 2014 Thesis committee member, Adewale Giwa, M.Sc. student, Masdar Institute (Advisor: Prof. S. Hasan)
- 2012 Thesis committee member, Daniel Aina, M.Sc. student, Masdar Institute (Advisor: Prof. F. Ahmad)
- 2012 Thesis committee member, Nour Mezher, M.Sc. student, Masdar Institute (Advisor: Prof. F. Ahmad)
- 2011 Thesis committee member, Brian Warshay, M.Sc. student, Masdar Institute
-

(Advisor: Prof. S. Sgouridis)

2011

Thesis committee member, Ali Farhat, M.Sc. student, Masdar Institute (Advisor: Prof. F. Ahmad)

PUBLICATIONS

h index: 32 (Scopus), 37 (Google Scholar)

Books

1. H. Arafat, *Desalination Sustainability: A Technical, Socioeconomic and Environmental Approach*, Elsevier (2017), ISBN: 9780128097915

Book chapters

2. N. Thomas, M. Mavukkandy, E. Farrell, H. A. Arafat, S. Chakraborty, Feedstock Availability, Composition, New Potential Resources for Biohydrogen, Bio-Methane, Bio-Butanol Production via Biotechnological Routes, Ch. 12 in *Sustainable Biofuels Development in India*, A. Chandel and R. Sukumaran (Eds), pp. 261-276, Springer, ISBN: 978-3-319-50219-9 (2017).
3. E. Farrell and H. A. Arafat, Achieving Food Security in the Desalination Age, Ch. 12 in *Renewable energy technologies for water desalination*, H. Mahmoudi, N. Ghaffour, M. Goosen and J. Bundschuh (Eds), pp. 211-235, CRC Press. ISBN 9781138029170 (2017).
4. R. Thomas, M. Roil Bilad, H. A. Arafat, PVDF Membranes for Membrane Distillation: Controlling Pore Structure, Porosity, Hydrophobicity, and Mechanical Strength, Ch. 8 in *Membrane Fabrication*, N. Hilal, A.F. Ismail, C.J. Wright (Eds), pp. 249-284, CRC Press, ISBN: 978-1-4822-1046-0 (2015).
5. S. Pirani and H. A. Arafat, Food Waste in Abu Dhabi's Hospitality Industry: How much is Too Much?, Ch. 16 in *Natural Resources: Sustainable Targets, Technologies, Lifestyles and Governance*, C. Ludwig, C. Matasci, X. Edelman (Eds), pp. 111-121, Paul Scherrer Institute, Villigen PSI, Switzerland, ISBN: 978-3-9521409-6-3 (2015)
6. H. A. Arafat and A. Arafat, Prediction of Generation Rate of Municipal Solid Waste in Palestinian Territories Based on Key Factors Modeling, Ch. 13 in *Solid Waste Management and Environmental Remediation*, T. Faerber and J. Herzog (Eds), Nova Publishers, NY, ISBN: 978-1607417613 (2010)

Journal papers

7. P. Yazgan-Birgi, M. Ali, H. A. Arafat, Comparative performance assessment of flat sheet and hollow fiber DCMD processes using CFD modeling, *Separation & Purification Technology*, 212, 709-722 (2019)
8. M. Mavukkandy, Q. Zaib, H. A. Arafat, CNT/PVP blend PVDF membranes for the removal of organic pollutants from simulated treated wastewater effluent, *J. Environmental Chemical Engineering*, 6, 6733-6740 (2018)
9. P. Yazgan-Birgi, M. Ali, J. Swaminathan, J. Lienhard, H. A. Arafat, Computational fluid dynamics modeling for performance assessment of permeate gap membrane distillation, *J. Membrane Science*, 568, 55-66 (2018)
10. Y. Ibrahim, H. A. Arafat, T. Mezher, F. Al Marzooqi, An Integrated Framework for Sustainability Assessment of Seawater Desalination, *Desalination*, 447, 1-17 (2018)

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11. N. Thomas, N. Sreedhar, O. Al-Ketan, R. Rowshan, R. Abu Al-Rub, H. A. Arafat, 3D printed triply periodic minimal surfaces as spacers for enhanced heat and mass transfer in membrane distillation, *Desalination*, 443, 256-271 (2018)
 12. N. Sreedhar, N. Thomas, O. Al-Ketan, R. Rowshan, H. Hernandez, R. Abu Al-Rub, H. A. Arafat, Mass transfer analysis of ultrafiltration using spacers based on triply periodic minimal surfaces: Effects of spacer design, directionality and voidage, *J. Membrane Science*, 561, 89-98 (2018)
 13. T. Agbaje, S. Al-Gharabli, M. Mavukkandy, J. Kujawa, H. A. Arafat, PVDF/magnetite blend membranes for enhanced flux and salt rejection in membrane distillation, *Desalination*, 436, 69-80 (2018)
 14. P. Yazgan-Birgi, M. Ali, H. A. Arafat, Estimation of liquid entry pressure in hydrophobic membranes using CFD tools, *J. Membrane Science*, 552, 68-76 (2018)
 15. D. Warsinger, S. Chakraborty, E. Tow, M. Plumlee, C. Bellona, S. Loutatidou, L. Karimi, A. Mikelonis, A. Achilli, A. Ghassemi, L. Padhye, S. Snyder, S. Curcio, C. Vecitis, H. A. Arafat, J. Lienhard, A review of polymeric membranes and processes for potable water reuse, *Progress in Polymer Science J.*, 81, 209-237 (2018)
 16. S. Al-Gharabli, J. Kujawa, M. Mavukkandy, T. Agbaje, E. Hamad, H. A. Arafat, Covalent surface entanglement of polyvinylidene fluoride membranes with carbon nanotubes, *European Polymer J.*, 100, 153-164 (2018)
 17. N. Sreedhar, N. Thomas, O. Al-Ketan, R. Rowshan, H. Hernandez, R. Abu Al-Rub, H. A. Arafat, 3D printed feed spacers based on triply periodic minimal surfaces for flux enhancement and biofouling mitigation in RO and UF, *Desalination*, 425, 12-21 (2018)
 18. S. Al-Gharabli, M. Mavukkandy, J. Kujawa, S. Nunes, H. A. Arafat, Activation of PVDF membranes through facile hydroxylation of the polymeric dope, in press, *J. Materials Research*, 32(22), 4219-4231 (2018)
 19. L. Marbelia, M. Bilad, S. Maes, H. A. Arafat, I. Vankelecom, Polyvinylidene fluoride-based membranes for microalgae filtration, *Chemical Engineering & Technology*, 41, 1-9 (2018)
 20. S. Al-Gharabli, E. Hamad, M. Saket, Z. Abu El-Rub, H. A. Arafat, W. Kujawski, J. Kujawa, Advanced Material-Ordered nano-tubular ceramic membranes covalently capped with single-wall carbon nanotubes, *Materials*, 11, 739; doi:10.3390/ma11050739 (2018)
 21. C. Baeza Elizalde, S. Al-Gharabli, J. Kujawa, M. Mavukkandy, S. Hasan, H. A. Arafat, Fabrication of blend polyvinylidene fluoride/chitosan membranes for enhanced flux and fouling resistance, *Separation & Purification Technology*, 190, 98-76 (2018).
 22. S. Al-Gharabli, J. Kujawa, M. Mavukkandy, H. A. Arafat, Functional groups docking on PVDF membranes: Novel Piranha approach, *European Polymer J.*, 96, 414-428 (2017)
 23. N. Thomas, M. Mavukkandy, S. Loutatidou, H. A. Arafat, Membrane distillation research & implementation: Lessons from the past five decades, *Separation & Purification Technology*, 189, 108-127 (2017).
 24. A. Giwa, S. Chakraborty, M. Mavukkandy, H. A. Arafat, S. Hasan, Nanoporous hollow fiber polyethersulfone membranes for the removal of
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- residual contaminants from treated wastewater effluent: Functional and molecular implications, *Separation & Purification Technology*, 189, 20-31 (2017).
25. S. Al-Gharabli, W. Kujawski, H. A. Arafat, J. Kujawa, Tunable separation via chemical functionalization of polyvinylidene fluoride membranes using piranha reagent, *J. Membrane Science*, 541(1), 567-579 (2017).
 26. M. Mavukkandy, M. Bilad, J. Kujawa, S. Al-Gharabli, H. A. Arafat, On the effect of fumed silica particles on the structure, properties and application of PVDF membranes, *Separation & Purification Technology*, 187, 365-373 (2017).
 27. D. Warsinger, A. Servi, G. Connors, M. Mavukkandy, H. A. Arafat, K. Gleason, J. Lienhard, Reversing membrane wetting in membrane distillation: comparing dryout to backwashing with pressurized air, *Environmental Science: Water Research & Technology*, 3, 930–939, (2017).
 28. S. Loutatidou, N. Liosis, R. Pohl, T. Ouarda, H. A. Arafat, Wind-powered desalination for strategic water storage: techno-economic assessment of concept, *Desalination*, 408, 36-51 (2017)
 29. E. Farrell, M. I. Hassan, R. Tufa, A. Tuomiranta, A. Avci, A. Politano, E. Curcio, H. A. Arafat, Reverse Electrodialysis powered greenhouse concept for water- and energy-self-sufficient agriculture, *Applied Energy*, 87, 390-409 (2017).
 30. M. Ashraf, J. Schmidt, J. Kujawa, W. Kujawski, H. A. Arafat, One-dimensional Modeling of Pervaporation systems using a semi-empirical flux model, *Separation & Purification Technology*, 174, 502-512 (2017).
 31. A. Politano, A. Pietro, G. Di Profio, V. Sanna, A. Cupolillo, S. Chakraborty, H. Arafat, E. Curcio, Photothermal membrane distillation for seawater desalination, *Advanced Materials*, 29(2), 1603504 (2017)
 32. A. Servi, E. Guillen-Burrieza, D. Warsinger, W. Livernois, K. Notarangelo, J. Kharraz, J. Lienhard, H. A. Arafat, K. Gleason, The effects of iCVD film thickness and conformality on the permeability and wetting of MD membranes, *J. Membrane Science*, 523, 470–479 (2017).
 33. S. Chakraborty, S. Loutatidou, G. Palmisano, J. Kujawa, M. Mavukkandy, S. Al-Gharabli, E. Curcio, H. A. Arafat, Photocatalytic hollow fiber membranes for the degradation of pharmaceutical compounds in wastewater, *J. Environmental Chemical Engineering* 5(5), 5014-5024 (2017).
 34. F. AlMarzooqi, M. Bilad, H. A. Arafat, Improving liquid entry pressure of polyvinylidene fluoride (PVDF) membranes by exploiting the role of fabrication parameters in vapor-induced phase separation (VIPS) and non-solvent-induced phase separation (NIPS) processes, *Applied Sciences*, 7(2), 181 (2017)
 35. K. Saha, J. Dasgupta, S. Chakraborty, F. Antonio, F. Antunes, J. Sikder, S. Curcio, J. dos Santos, H. A. Arafat, S. da Silva, Optimization of lignin recovery from sugarcane bagasse using ionic liquid aided pretreatment, *Cellulose*, 24(8), 3191-3207 (2017)
 36. A. Servi, J. Kharraz, D. Klee, K. Notarangelo, B. Eyob, E. Guillen-Burrieza, A. Liu, H. A. Arafat, K. Gleason, A systematic study of the impact of hydrophobicity on the wetting of MD membranes, *J. Membrane Science*, 520, 850-859 (2016)
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37. E. Guillen-Burrieza, M. Mavukkandy, M. Bilad, H. A. Arafat, Understanding wetting phenomena in Membrane Distillation and how operational parameters can affect it, *J. Membrane Science*, 515, 163-174 (2016)
 38. S. Pirani, H. A. Arafat, G. Thompson, FRESH: A Foodservice Sustainability Rating for Hospitality Sector Event, *Cornell Hospitality Tool*, 16(21), 3-11 (2016)
 39. A. Politano, A. Cupolillo, G. Di Profio, H. A. Arafat, G. Chiarello, E. Curcio, When plasmonics meets membrane technology, *J. Physics: Condensed Matter*, 28, 363003 (2016)
 40. S. Pirani, H. A. Arafat, Reduction of food waste generation in the hospitality industry, *J. Cleaner Production*, 132, 129-145 (2016)
 41. S. Pirani, H. A. Arafat, Interplay of food security, agriculture and tourism within GCC countries, *Global Food Security J.*, 9, 1-9 (2016)
 42. F. AlMarzooqi, M. Bilad, H. A. Arafat, Development of PVDF membranes for membrane distillation via vapour induced crystallization, *European Polymer J.*, 77, 164-173 (2016)
 43. D. Warsinger, A. Servi, S. Van Belleghem, J. Gonzalez, J. Swaminathan, J. Kharraz, H. W. Chung, H. A. Arafat, K. Gleason, J. Lienhard, Combining air recharging and membrane superhydrophobicity for fouling prevention in membrane distillation, *J. Membrane Science*, 505, 241-252 (2016)
 44. J. Dasgupta, A. Singh, S. Kumar, J. Sikder, S. Chakraborty, H. A. Arafat, S. Curcio, Poly (sodium-4-styrenesulfonate) assisted ultrafiltration for methylene blue dye removal from simulated wastewater: Optimization using response surface methodology, *J. Environmental Chemical Engineering*, 4, 2008-2022 (2016)
 45. M. Mavukkandy, M. Bilad, A. Giwa, S. Hasan, H. A. Arafat, Leaching of PVP from PVDF/PVP blend membranes: impacts on membrane structure and fouling in membrane bioreactors, *J. Materials Science* 51(9), 4328-4341 (2016)
 46. M. Hassan, A. Brimmo, J. Swaminathan, J. Lienhard, H. A. Arafat, A new vacuum membrane distillation system using an aspirator: Concept modelling and optimization, *Desalination & Water Treatment*, 57(28), 12915-12928 (2016)
 47. F. AlMarzooqi, M. Bilad, B. Mansoor, H. A. Arafat, A comparative study of image analysis and porometry techniques for characterization of porous membranes, *J. Materials Science* , 51(4), 2017-2032 (2016)
 48. J. Swaminathan, H. Chung, D. Warsinger, F. Al-Marzooqi, H. A. Arafat, J. Lienhard, Energy Efficiency of Permeate Gap and Novel Conductive Gap Membrane Distillation, *J. Membrane Science*, 502, 171-178 (2016)
 49. J. Kharraz, M. Bilad, H. A. Arafat, Flux stabilization in membrane distillation desalination of seawater and brine using corrugated PVDF membranes, *J. Membrane Science*, 495, 404-414 (2015)
 50. M. Bilad, E. Guillen-Burrieza, M. Mavukkandy, F. AlMarzooqi, H. A. Arafat, Shrinkage, defect and membrane distillation performance of composite PVDF membranes, *Desalination* 376, 62-72 (2015)
 51. J. Kujawa, E. Guillen-Burrieza, H. A. Arafat, M. Kurzawa, A. Wolan, W. Kujawski, Raw juice concentration by osmotic membrane distillation process with hydrophobic polymeric membranes, *Food Bioprocess*
-

-
- Technology*, 8, 2146–2158 (2015)
52. J. Dasgupta, D. Mondal, S. Chakraborty, J. Sikder, S. Curcio, H. A. Arafat, Nanofiltration based water reclamation from tannery effluent following coagulation pretreatment, *Ecotoxicology & Environmental Safety J.* 121, 22-30 (2015)
 53. M. R. Bilad, F. Al Marzooqi, H. A. Arafat, New concept for dual-layer hydrophilic/hydrophobic composite membrane for membrane distillation, *J. Membrane & Separation Technology*, 4, 122-133 (2015)
 54. N. Akther, A. Sodiq, A. Giwa, S. Daer, H. A. Arafat, S. Hasan, Recent Advancements in Forward Osmosis Desalination: A Review, *Chemical Engineering J.*, 281, 502-522 (2015)
 55. M. Pettinato, S. Chakraborty, H. A. Arafat, V. Calabro, Eggshell: A green adsorbent for heavy metal removal in an MBR system, *Ecotoxicology & Environmental Safety J.*, 121, 57-62 (2015)
 56. S. Loutatidou and H. A. Arafat, Techno-economic analysis of MED and RO desalination powered by low-enthalpy geothermal energy, *Desalination*, 365, 277-292 (2015)
 57. V. Discart, M. Bilad, R. Moorkens, H. A. Arafat, I. Vankelecom, Decreasing membrane fouling during *Chlorella vulgaris* broth filtration via membrane development and coagulant assisted filtration, *Algal Research*, 9, 55-64 (2015)
 58. E. Guillen-Burrieza, A. Servi, B. Lalia, H. A. Arafat, Membrane structure and surface morphology impact on the wetting of MD membranes, *J. Membrane Science*, 483, 94-103 (2015)
 59. J. Kharraz, M. Bilad, H. A. Arafat, Simple and effective corrugation of PVDF membranes for enhanced MBR performance, *J. Membrane Science* 475, 91-100 (2015)
 60. D. Warsinger, J. Swaminathan, E. Guillen, H. A. Arafat, J. Lienhard, Scaling and fouling in membrane distillation for desalination applications: A review, *Desalination*, 365, 294-313 (2015)
 61. H. A. Arafat, K. Jijakli, A. Ahsan, Environmental performance and energy recovery potential of five processes for municipal solid waste treatment, *J. Cleaner Production*, 105, 233-240 (2015)
 62. S. Pirani, I. Al-Khatib, R. Halaweh, M. Arafat, H. A. Arafat, Household-level determinants of residential solid waste generation rates: A study from Nablus-Palestine, *J. Material Cycles & Waste Management*, 17, 725-735 (2015)
 63. M. Bilad, H. A. Arafat, I. Vankelecom, Membrane technology in microalgae cultivation and processing: A review, *Biotechnology Advances*, 32(7), 1283-1300 (2014)
 64. O. Saif, T. Mezher, H. A. Arafat, Water security in the GCC countries: Challenges and opportunities, *J. Environmental Studies & Sciences*, 4, 329–346 (2014)
 65. E. Guillen-Burrieza, A. Ruiz-Aguirre, G. Zaragoza, H. A. Arafat, Membrane fouling and cleaning in long term plant-scale membrane distillation operations, *J. Membrane Science*, 468, 360-372 (2014)
 66. S. Loutatidou, B. Chalermthai, P. Marpu, H. A. Arafat, Capital cost estimation of reverse osmosis plants: GCC countries versus southern
-

-
- Europe, *Desalination*, 347, 103-111 (2014)
67. R. Thomas, E. Guillen-Burrieza, H. A. Arafat, Pore structure control of PVDF membranes using a 2-stage coagulation bath phase inversion process for application in membrane distillation (MD), *J. Membrane Science*, 452, 470-480 (2014)
 68. B. Lalia, E. Guillen, H. A. Arafat, R. Hashaikeh, Nanocrystalline cellulose reinforced PVDF-HFP membranes for membrane distillation application, *Desalination*, 332(1), 134–141 (2014)
 69. L. Li, R. Hashaikeh, H. A. Arafat, Preparation of biodegradable poly (lactic acid) electrospun membrane with decreased pore size by post heat treatment, *Key Engineering Materials*, 594-595, pp 260-269 (2014)
 70. S. Pirani and H. A. Arafat, Solid Waste Management in the Hospitality Industry: A review, *J. Environmental Management*, 146, 320- 336 (2014).
 71. E. Guillen-Burrieza, R. Thomas, B. Mansoor, D. Johnson, N. Hilal, H. A. Arafat, Effect of dry-out on the fouling of PVDF and PTFE membranes under conditions simulating intermittent seawater membrane distillation (SWMD), *J. Membrane Science*, 438, 126-139 (2013)
 72. L. Li, R. Hashaikeh, H. A. Arafat, Development of new eco-efficient micro-porous membranes via electrospinning and annealing of poly(lactic acid), *J. Membrane Science*, 436, 57-67 (2013)
 73. R. Saffarini, B. Mansoor, R. Thomas, H. A. Arafat, Effect of temperature-dependent microstructure evolution on pore wetting in PTFE membranes under membrane distillation conditions, *J. Membrane Science*, 429, 282-294 (2013)
 74. B. Lalia, E. Guillen, H. A. Arafat, R. Hashaikeh, Fabrication and characterization of polyvinylidene fluoride-co-hexafluoropropylene (PVDF-HFP) electrospun membranes for direct contact membrane distillation, *J. Membrane Science*, 428, 104-115 (2013).
 75. H. A. Arafat, A. Bakel, A. Dilger, K. Nash, P. Rickert, G. Vandegrift, Reclamation of contaminated groundwater using cooking oils in a novel, eco-friendly and high-efficiency solvent extraction process, *Desalination*, 321, 9-21 (2013)
 76. A. Farhat, F. Ahmad, N. Hilal, H. A. Arafat, Boron Removal in new generation reverse osmosis (RO) membranes using two-pass RO without pH adjustment, *Desalination*, 310, 50–59 (2013)
 77. T. Al-Sarkal and H. A. Arafat, Ultrafiltration versus sedimentation-based Pretreatment in Fujairah-1 RO plant: environmental impact study, *Desalination*, 317, 55-66 (2013)
 78. A. Ahsan, M. Imteaz, R. Dev, H. A. Arafat, Numerical models of solar distillation device: present and previous, *Desalination*, 311, 173-181 (2013).
 79. A. Farhat, F. Ahmad, H. A. Arafat, Analytical techniques for boron quantification supporting desalination processes: A review, *Desalination*, 310, 9–17 (2013)
 80. S. Fadeyi, H. A. Arafat, M. Abu Zahra, Life cycle assessment of natural gas combined cycle integrated with CO₂ post combustion capture using chemical solvent, *Intl. J. Greenhouse Gas Control*, 19, 441–452 (2013)
 81. H. A. Arafat and K. Jijakli, Modeling and comparative assessment of municipal solid waste gasification for energy production, *Waste*
-

-
- Management*, 33(8), 1704-1713 (2013)
82. S. Abdul Hadi, M. Al Kaabi, M. Al Ali, H. A. Arafat, Comparative life cycle assessment of streetlight technologies for minor roads in United Arab Emirates, *Energy for Sustainable Development*, 17, 438–450 (2013)
 83. J. Adeoye, Y. Amha, V. Poghosyan, K. Torchyan, H. A. Arafat, Comparative LCA of two thermal energy storage systems for Shams 1 concentrated solar power plant: molten salt vs. concrete, *J. Clean Energy Technologies*, 2(3), 274-281 (2013)
 84. M. Ali, E. Summers, H. A. Arafat, J. Lienhard, Effects of membrane properties on water production cost in small scale membrane distillation systems, *Desalination* 306, 60–71 (2012)
 85. R. Saffarini, E. Summers, H. A. Arafat, J. Lienhard, Economic evaluation of stand-alone solar powered membrane distillation systems, *Desalination*, 299, 55–62 (2012)
 86. E. Summers, H. A. Arafat, J. Lienhard, Energy efficiency comparison of single-stage membrane distillation (MD) desalination cycles in different configurations, *Desalination*, 290, 54–66 (2012)
 87. R. Saffarini, E. Summers, H. A. Arafat, J. Lienhard, Technical evaluation of stand-alone solar powered membrane distillation systems, *Desalination*, 286, pp. 332-341 (2012)
 88. K. Jijakli, H. A. Arafat, S. Kennedy, P. Mande, V. Theeyattuparampil, How green solar desalination really is? Environmental assessment using life-cycle analysis (LCA) approach, *Desalination*, 287, 123-131 (2012)
 89. A. Abusafa, H. A. Arafat, M. Abu-Baker, K. Khalili, Utilization of drinking water from rainwater harvesting wells in the Palestinian Territories: Assessment of contamination risk, *Intl. J. Environment & Waste Management*, 9(3/4), 358-371 (2012)
 90. A. Al-Salaymeh, I. Al-Khatib, H. A. Arafat, Towards sustainable water quality: Management of rainwater harvesting cisterns in southern Palestinian Territory, *Water Resources Management J.*, 25(6), 1721-1736 (2011)
 91. D. Rana, Y. Kim, T. Matsuura, H. A. Arafat, Development of antifouling thin-film-composite membranes for seawater desalination", *J. Membrane Science*, 367, 110-118 (2011)
 92. M. García-Payo, M. Essalhi, M. Khayet, K. Charfi, H. A. Arafat, Water desalination by membrane distillation using copolymer hollow fiber membranes, *Membrane Water Treatment*, 1(3), 215-230 (2010)
 93. H. A. Arafat, S. Aase, A. Bakel, D. Bowers, A. Gelis, M. Regalbuto, and G. Vandegrift, The application of in-situ formed mixed iron oxides in the removal of strontium and actinides from nuclear tank waste, *AIChE J.*, 56(11), 3012-3020 (2010)
 94. I. Khatib, H. A. Arafat, A review of residential solid waste management in the occupied Palestinian Territory: a window for improvement?, *Waste Management & Research*, 28, 481–488 (2010)
 95. B. Abu Tarbush, H. A. Arafat, T. Matsuura, D. Rana, Recent advances in thin film composite (TFC) reverse osmosis and nanofiltration membranes for desalination, *J. Applied Membrane Science & Technology*, 10, 41-50 (2009)
-

-
96. I. Khatib, H. A. Arafat, Chemical and microbiological quality of desalinated water, groundwater and rain-fed cisterns in the Gaza Strip, Palestine, *Desalination*, 249, 1165-1170 (2009)
 97. I. Al-Khatib, H. A. Arafat, R. Daoud, H. Shwahneh, Enhanced solid waste management by understanding the effects of gender, income, marital status, and religious convictions on attitudes and practices related to street littering in Nablus- Palestinian Territory, *Waste Management*, 29(1), 449-455 (2009)
 98. B. Abu Tarboush, D. Rana, T. Matsuura, H. A. Arafat, and R. Narbaitz, Preparation of thin-film-composite polyamide membranes for desalination using novel hydrophilic surface modifying macromolecules, *J. Membrane Science*, 325(1), 166-175 (2008)
 99. H. Susanto, H. A. Arafat, E. Janssen, M. Ulbricht, Ultrafiltration of polysaccharide-protein mixtures: Elucidation of fouling mechanisms and fouling control by membrane surface modification, *Separation & Purification Technology*, 63(3), 558-565 (2008)
 100. I. Al-Khatib, H. A. Arafat, T. Basheer, H. Shawahneh, A. Salahat, J. Eid, W. Ali, Trends and problems of solid waste management in developing countries: A case study in seven Palestinian districts, *Waste Management*, 27(12), 1910-1919 (2007)
 101. H. Arafat, I. Al-Khatib, R. Daoud, and H. Shwahneh, Influence of socio-economic factors on street litter generation in the Middle East: effects of education level, age, and type of residence, *Waste Management & Research*, 25(4), 363-370 (2007)
 102. H. A. Arafat, Simple physical treatment for the reuse of wastewater from textile industry in the Middle East, *J. Environmental Engineering & Science*, 6(1), 115-122 (2007)
 103. H. A. Arafat, I. Al-Khatib, A. Abu Zahra, Effects of prevailing conditions during second Palestinian uprising on solid waste management system in Nablus city in Palestine, *Intl. J. Environmental Health Research*, 16(4), 281 – 287 (2006)
 104. H. A. Arafat, F. Ahnert, N. Pinto, On the adsorption of aromatics on oxygenated activated carbon in non-aqueous Adsorption media, *Separation Science & Technology*, 39(1), 43-62 (2004)
 105. F. Ahnert, H. A. Arafat, N. Pinto, A study of the influence of hydrophobicity of activated carbon on the adsorption equilibrium of aromatics in non-aqueous media, *Adsorption*, 9, 311-319 (2003)
 106. R. Leonard, S. Aase, H. A. Arafat, C. Conner, D. Chamberlain, J. Falkenberg, M. Regalbuto, G. Vandegrift, Experimental verification of caustic-side solvent extraction for removal of cesium from tank waste, *Solvent Extraction & Ion Exchange*, 21(4), 505-526 (2003)
 107. H. A. Arafat, I. Abu-Reesh, Ultrafiltration of Labaneh whey: effect of operating parameters, *Arabian J. for Science & Engineering*, 26(2C), 55–67 (2001)
 108. H. Rho, H. A. Arafat, B. Kountz, R. Buchanan, N. Pinto, and P. Bishop, Decomposition of hazardous organic materials in the solidification/stabilization process using catalytic-activated carbon, *Waste Management*, 21(4), 343–356 (2001)
 109. M. Franz, H. A. Arafat, N. Pinto, Effect of chemical surface heterogeneity on the adsorption mechanism of dissolved aromatics on activated carbon,
-

110. H. A. Arafat, M. Franz, N. Pinto, Effect of salt on the mechanism of adsorption of aromatics on activated carbon, *Langmuir*, 15(18), 5997–6003 (1999)
111. V. Hebatpuria, H. A. Arafat, H. Rho, P. Bishop, N. Pinto, R. Buchanan, Immobilization of phenol in cement-based solidified/stabilized hazardous wastes using regenerated activated carbon: leaching studies, *J. Hazardous Materials*, 70(3), 117–138 (1999)
112. H. A. Arafat, V. Hebatpuria, H. Rho, N. Pinto, P. Bishop, R. Buchanan, Immobilization of phenol in cement-based solidified/stabilized hazardous wastes using regenerated activated carbon: role of carbon, *J. Hazardous Materials*, 70(3), 139–156 (1999)
113. V. Hebatpuria, H. A. Arafat, P. Bishop, N. Pinto, Leaching behavior of selected aromatics in cement-based solidification/stabilization under different leaching tests, *Environmental Engineering Science*, 16(6), 451–463 (1999)

Conference papers

1. P. Yazgan-Birgi, M. Ali, J. Swaminathan, J. Lienhard, H. A. Arafat, Performance assessment of membrane distillation (MD) configurations using computational fluid dynamics (CFD) modeling tools, Desalination for the Environment: Clean Water and Energy Conf., Athens, Greece, 3-6 Nov., 2018.
 2. N. Sreedhar, N. Thomas, O. Al-Ketan, R. Rowshan, H. Hernandez, R. Al-Rub, H. A. Arafat, 3D printed triply periodic minimal surfaces as spacers for enhanced heat and mass transfer in membrane distillation, Desalination for the Environment: Clean Water and Energy Conf., Athens, Greece, 3-6 Nov., 2018.
 3. Y. Ibrahim, T. Mezher, H. A. Arafat, F. AlMarzooqi, Development of sustainable development of decision support framework for assessing the sustainability of different seawater desalination technologies: United Arab Emirates case study, Desalination for the Environment: Clean Water and Energy Conf., Athens, Greece, 3-6 Nov., 2018.
 4. N. Sreedhar, N. Thomas, O. Al-Ketan, R. Rowshan, H. Hernandez, R. Abu Al-Rub, H. A. Arafat, Mass transfer enhancement and biofouling mitigation in membrane systems by novel 3D printed TPMS feed spacers, Euromembrane 2018, Valencia, Spain, 9-13 Jul., 2018.
 5. N. Thomas, N. Sreedhar, O. Al-Ketan, R. Rowshan, R. Abu Al-Rub, H. A. Arafat, Can 3D printing be the next big thing for spacer design in membrane distillation?, 10th Intl. Desalination Workshop, Busan, Korea, 22-24 Nov., 2017.
 6. Y. Ibrahim, H. A. Arafat, F. AlMarzooqi, Development of decision support framework for assessing the sustainability of different seawater desalination technologies: United Arab Emirates case study, 10th Intl. Desalination Workshop, Busan, Korea, 22-24 Nov., 2017.
 7. T. Agbaje, S. Al-Gharabli, J. Kujawa, H. A. Arafat, Synthesis of blend PVDF-magnetite membranes for applications in membrane distillation, 10th Intl. Desalination Workshop, Busan, Korea, 22-24 Nov., 2017.
 8. N. Sreedhar, N. Thomas, O. Al-Ketan, R. Rowshan, H. Hernandez, R. Abu Al-Rub, H. A. Arafat, Effect of 3D printed triply periodic minimal surface
-

-
- (TPMS) feed spacers on flux and fouling in ultrafiltration and reverse osmosis, 10th Intl. Desalination Workshop, Busan, Korea, 22-24 Nov., 2017.
9. M. Mavukkandy, Q. Zaib, H. A. Arafat, PVDF-SWCNT nanocomposite membranes for the adsorptive removal of organic micropollutants, 10th Intl. Desalination Workshop, Busan, Korea, 22-24 Nov., 2017.
 10. P. Yazgan-Birgi, M. Ali, H. A. Arafat, CFD Model Design for the Performance Evaluation of Direct Contact Membrane Distillation (DCMD) Module, 10th Intl. Desalination Workshop, Busan, Korea, 22-24 Nov., 2017 (poster).
 11. S. Al-Gharabli, J. Kujawa, M. Mavukkandy, T. Agbaje, E. Hamad, H. A. Arafat, Covalent surface entanglement of single walled carbon nanotube on polyvinylidene fluoride membranes, 11th Intl. Congress on Membranes and Membrane Processes, San Francisco, CA, USA, 29 Jul.- 4 Aug., 2017.
 12. S. Al-Gharabli, M. Saket, E. Hamad, H. A. Arafat, W. Kujawski, J. Kujawa, Ordered nano-tubular ceramic membrane covalently capped with carbon nanotubes for selective separation of biological active compounds, 11th Intl. Congress on Membranes and Membrane Processes, San Francisco, CA, USA, 29 Jul.- 4 Aug., 2017 (poster).
 13. J. Kujawa, S. Al-Gharabli, W. Kujawski, H. Arafat, Piranha activated PVDF membranes towards novel separation properties, characterization and application, 11th Intl. Congress on Membranes and Membrane Processes, San Francisco, CA, USA, 29 Jul.- 4 Aug., 2017 (poster).
 14. T. Agbaje, S. Al-Gharabli, J. Kujawa, H. Arafat, Synthesis of PVDF membranes with magnetic nanoparticles for applications in membrane distillation, 11th Intl. Congress on Membranes and Membrane Processes, San Francisco, CA, USA, 29 Jul.- 4 Aug., 2017 (poster).
 15. S. Mansour, H. A. Arafat, S. Hasan, Performance evaluation of graphene coated polyethylene membranes for the treatment of reverse osmosis brine reject waste stream using membrane distillation, Frontiers Intl. Conf. on Wastewater Treatment, Palermo, Italy, 21-24 May, 2017.
 16. S. Mansour, H. A. Arafat, S. Hasan, Identification of membrane foulants in direct contact membrane distillation for the treatment of reject brine, 19th intl. Conf. on Water Management, Montreal, Canada, 11-12 May, 2017.
 17. H. A. Arafat, S. Al-Gharabli, J. Kujawa, M. Mavukkandy, Functional groups docking on PVDF membranes using a novel Piranha-reaction approach, Engineering with Membranes Conf., Singapore, 26-28 Apr., 2017.
 18. S. Mansour, H. A. Arafat, S. Hasan, Characterization of graphene/polyethylene flat sheet membranes for the potential application of membrane distillation reverse osmosis brine treatment, 3rd Intl. Conf. on Desalination using Membrane Technology, Gran Canaria, Spain, 2-5 Apr., 2017 (poster).
 19. S. Mansour, H. A. Arafat, S. Hasan, Performance and fouling studies of the pilot direct contact membrane distillation used for the treatment of reverse osmosis reject brine, 3rd Intl. Conf. on Desalination using Membrane Technology, Gran Canaria, Spain, 2-5 Apr., 2017.
 20. E. Curcio, R. Tufa, A. Avci, E. Fontananova, G. Di Profio, H. A. Arafat, E. Drioli, Potential of membrane distillation and reverse electrodialysis in seawater desalination, 9th Intl. Desalination Workshop, Abu Dhabi, UAE,
-

13-15 Nov., 2016.

21. P. Yazgan-Birgi, M. Ali., H. A. Arafat, Membrane wetting study in membrane distillation using computational fluid dynamics (CFD), 9th Intl. Desalination Workshop, Abu Dhabi, UAE, 13-15 Nov., 2016.
 22. M. Hassan Ali, M. Diop, C. Xiaomeng, H. A. Arafat, Numerical modelling of morphological design of dual layer composite membrane for membrane distillation, 9th Intl. Desalination Workshop, Abu Dhabi, UAE, 13-15 Nov., 2016.
 23. S. Mansour, H. A. Arafat, S. Hasan, Treatment of reverse osmosis brine by direct contact membrane distillation-A pilot study, 9th Intl. Desalination Workshop, Abu Dhabi, UAE, 13-15 Nov., 2016.
 24. N. Sreedhar, N. Thomas, O. Al-Ketan, R. Abu Al-Rub, R. Rowshan, H. A. Arafat, Development of novel 3D-printed feed spacers for flux enhancement and fouling control, 9th Intl. Desalination Workshop, Abu Dhabi, UAE, 13-15 Nov., 2016.
 25. N. Thomas, N. Sreedhar, O. Al-Ketan, R. Abu Al-Rub, R. Rowshan, H. A. Arafat, Novel 3D-printed feed spacers for flux enhancement and fouling control in membrane distillation, 9th Intl. Desalination Workshop, Abu Dhabi, UAE, 13-15 Nov., 2016.
 26. M. Mavukkandy, S. Gharabli, J. Kujawa, S. Chakraborty, H. A. Arafat, Chemical modification of poly(vinylidene fluoride) for hydrophilicity fine-tuning and anchoring sites creation on microporous membranes, 16th Aachener Membrane Kolloquium, Aachen, 2–3 Nov., 2016 (poster).
 27. S. Chakraborty, S. Loutatidou, M. Mavukkandy, S. Gharabli, G. Palmisano, H. A. Arafat, Hybridization of photocatalysis and nanocomposite membranes for the removal of industrial pollutants, 16th Aachener Membrane Kolloquium, Aachen, 2–3 Nov., 2016 (poster).
 28. H. A. Arafat, S. Bertrand, C. de Matos Passos, L. Guey, F. Hemmer, S. Loutatidou, A. Ritschel, A. Tuomiranta, Solar-powered reverse osmosis: a near-future milestone to achieve sustainable water production in the UAE, IWA World Water Congress, Brisbane, Australia, 9-13 Oct., 2016
 29. H. A. Arafat, S. Bertrand, C. de Matos Passos, L. Guey, F. Hemmer, S. Loutatidou, A. Ritschel, A. Tuomiranta, Techno-economic modelling of solar-powered RO in the UAE, Desalination for the Environment: Clean Water and Energy Conf., Rome, Italy, 22–26 May, 2016.
 30. E. Farrell, M. Hassan, R. Tufa, A. Tuomiranta, A. Avci, A. Politano, E. Curcio, H. A. Arafat, A humidification-dehumidification desalination solution concept for sustainable greenhouse agriculture in arid environments, Desalination for the Environment: Clean Water and Energy Conf., Rome, Italy, 22–26 May, 2016.
 31. H. A. Arafat, Status update on membrane distillation: Advancements, commercialization, and challenges, Desalination for the Environment: Clean Water and Energy Conf., Rome, Italy, 22–26 May, 2016.
 32. E. Guillen, M. Mavukkandy, M. Bilad, H. A. Arafat, The role of the MD operation variables in membrane wetting, Desalination for the Environment: Clean Water and Energy Conf., Rome, Italy, 22–26 May, 2016.
 33. M. Diop, C. Xiaomeng, H. A. Arafat, M. Hassan, CFD-based model and experimental verification of DCMD process using flat, corrugated and supported membranes, Desalination for the Environment: Clean Water and
-

-
- Energy Conf., Rome, Italy, 22–26 May, 2016.
34. S. Pirani, H. A. Arafat, Food waste in the UAE hospitality sector: decreasing the ‘too much’, 31st Intl. Conf. on Solid Waste Technology and Management, Philadelphia, PA, USA, 3-6 Apr., 2016.
 35. M. Mavukkandy, M. Bilad, H. A. Arafat, Effects of hydrophobic fumed silica particles on the structure and performance of PVDF flat sheet membranes, 8th Intl. Workshop on Advanced Materials, Ras Al Khaimah, UAE, 21-23 Feb., 2016.
 36. N. Thomas, J. Kharraz, S. Loutatidou, H. A. Arafat, Corrugated composite PVDF membranes for enhanced flux performance in membrane distillation, 8th Intl. Workshop on Advanced Materials, Ras Al Khaimah, UAE, 21-23 Feb., 2016.
 37. S. Loutatidou, S. Chakraborty, G. Palmisano, H. A. Arafat, Development of a novel photocatalytic membrane reactor for industrial wastewater treatment applications, 8th Intl. Workshop on Advanced Materials, Ras Al Khaimah, UAE, 21-23 Feb., 2016.
 38. D. Warsinger, A. Servi, G. Connors, J. Gonzales, H. A. Arafat, J. Lienhard, A novel air backwashing method for reversing wetting in membrane distillation, AWWA/AMTA 2016 Membrane Technology Conf., San Antonio, TX, USA, 1-4 Feb., 2016
 39. M. Diop, M. Hassan, H. A. Arafat, CFD benchmark model for studying spacer-filled channel DCMD, 2nd Intl. Conf. on Desalination and Environment, Doha, Qatar, 24-26 Jan., 2016.
 40. S. Pirani, H. A. Arafat, Food waste in the UAE hospitality sector: addressing front of house losses, 3rd World Research Summit for Tourism and Hospitality, Orlando, FL, USA, 15-19 Dec., 2015
 41. M. Mavukkandy, M. Bilad, H. A. Arafat, Effect of fumed silica on PVDF membrane formation by phase inversion and application in wastewater filtration, Euromembrane 2015 Conf., Aachen, Germany, 6-10 Sep., 2015 (poster).
 42. P. Yazgan-Birgi, M. Ali, H. A. Arafat, CFD as a tool for understanding the wetting phenomena in membrane distillation, Euromembrane 2015 Conf., Aachen, Germany, 6-10 Sep., 2015.
 43. M. Mavukkandy, M. Bilad, A. Giwa, S. Hasan, H. A. Arafat, Leaching of PVP from PVDF/PVP blending membrane: implication on membrane structure and fouling in membrane bioreactors, Euromembrane 2015 Conf., Aachen, Germany, 6-10 Sep., 2015 (poster).
 44. J. Kharraz, M. Bilad, H. A. Arafat, Development of corrugated PVDF membranes for fouling control in membranes bioreactors (MBR) and membrane distillation (MD), Euromembrane 2015 Conf., Aachen, Germany, 6-10 Sep., 2015 (poster).
 45. S. Loutatidou, N. Liosis, T. Ouarda, H. A. Arafat, Wind powered desalination aimed for strategic water storage: Performance and cost analyses, IDA World Congress on Desalination and Water Reuse, San Diego, CA, USA, 30 Aug. – 4 Sep., 2015.
 46. F. Al-Marzooqi, M. Bilad, J. Swaminathan, J. Lienhard, H. A. Arafat, Flux measurements in novel membrane distillation configurations, IDA World Congress on Desalination and Water Reuse, San Diego, CA, USA, 30 Aug. – 4 Sep., 2015.
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47. S. Chakraborty, H. A. Arafat, Development of photocatalytic membrane reactors for degradation of pharmaceutical pollutants in waste water, 3rd Intl. Conf. on Membranes, Kerala, India, 21-24 Aug., 2015
 48. F. AlMarzooqi, M. Bilad, H. A. Arafat, Novel dual-layer composite membrane for membrane distillation, 2nd Intl. Conf. on Desalination Using Membrane Technology, Singapore, 26-29 Jul., 2015.
 49. M. Bilad, E. Guillen-Burrieza, M. Mavukkandy, F. AlMarzooqi, H. A. Arafat, Shrinkage, defect and membrane distillation performance of composite PVDF membrane, 2nd Intl. Conf. on Desalination Using Membrane Technology, Singapore, 26-29 Jul., 2015 (poster).
 50. H. A. Arafat, Unexpected effects of operating conditions and membrane morphology on pore wetting during MD, 2nd Intl. workshop on Membrane Distillation and Innovating Membrane Operations in Desalination and Water Reuse, Ravello, Italy, 1-4 Jul., 2015.
 51. P. Yazgan-Birgi, M. Ali, H. A. Arafat, The wetting phenomena study in membrane distillation, 32nd European Membrane Society Summer School, Liberec, Czech Republic, 21-26 Jun., 2015 (best paper award)
 52. J. Kharraz, M. Bilad, H. A. Arafat, Novel corrugated PVDF membranes for fouling control in membrane distillation, 25th North American Membrane Society Conf., Boston, MA, USA, 1-4 Jun., 2015.
 53. S. Chakraborty, R. Ben Amar, H. A. Arafat, E. Drioli, Modification of ceramic membrane surface by silane grafting: application for emulsion separation by air gap membrane distillation, IDA New Horizons for Desalination Conf., Portofino, Italy, 17-19 May, 2015.
 54. S. Loutatidou, H. A. Arafat, Renewable energy to drive desalination: the case of geothermal and wind desalination in the UAE, IDA New Horizons for Desalination Conf., Portofino, Italy, 17-19 May, 2015.
 55. J. Kharraz, M. Bilad, H. A. Arafat, Corrugated composite PVDF membranes for membrane distillation, Desalination for Clean Water and Energy Conference (EuroMed2015), Palermo, Italy, 10–14 May 2015.
 56. S. Loutatidou, H. A. Arafat, Techno-economic analysis of desalination powered by low-enthalpy geothermal energy, Desalination for Clean Water and Energy Conf. (EuroMed2015), Palermo, Italy, 10–14 May 2015.
 57. S. Loutatidou, N. Liosis, C. Charron, T. Ouarda, H. A. Arafat, Wind-powered desalination for strategic aquifer water storage, Desalination for Clean Water and Energy Conf. (EuroMed2015), Palermo, Italy, 10–14 May 2015.
 58. M. Bilad, L. Marbelia, H. A. Arafat, I. Vankelecom, Novel magnetically induced membrane vibration (MMV) system for membrane bioreactor (MBR) application: membrane development, 10th Intl. Conf. on Membranes and Membrane Processes, Suzhou, China, 20-25 Jul., 2014.
 59. E. Guillen-Burrieza, A. Servi, B. Laila, M. Bilad, H. A. Arafat, The effects of structure and morphology on membrane wetting in MD processes, 10th Intl. Conf. on Membranes and Membrane Processes, Suzhou, China, 20-25 Jul., 2014 (poster).
 60. M. Bilad, E. Guillen-Burrieza, H. A. Arafat, The impact of non-woven support on the properties and performance of PVDF membranes for membrane distillation, 10th Intl. Conf. on Membranes and Membrane Processes, Suzhou, China, 20-25 Jul., 2014 (poster).
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61. M. Bilad, V. Discart, R. Moorkens, H. A. Arafat, I. Vankelecom, Decreasing membrane fouling during *Chlorella vulgaris* broth filtration via membrane development and coagulant assisted filtration, 10th Intl. Conf. on Membranes and Membrane Processes, Suzhou, China, 20-25 Jul., 2014 (poster).
 62. S. Pirani, H. A. Arafat, Reduction of food waste generation in the hospitality industry, 2nd Intl. Conf. on Sustainable Waste Management, Athens, Greece, 12-14 Jun., 2014.
 63. M. Bilad, E. Guillen-Burrieza, M. Mavukkandy, F. Al Marzooqi, H. A. Arafat, Effect of membrane support on PVDF membrane properties and performance in membrane distillation, 24th North American Membrane Society Conf., Houston, TX, USA, 1-5 Jun., 2014.
 64. J. Kharraz, M. Bilad, H. A. Arafat, Novel corrugated PVDF membranes for membrane bioreactor, 24th North American Membrane Society Conf., Houston, TX, USA, 1-5 Jun., 2014.
 65. H. A. Arafat, M. Hassan, A. Brimmo, Vacuum membrane distillation system using aspirator for reduced cost and enhanced water recovery, 11th IWA Leading Edge Conf. on Water and Wastewater Technologies, Abu Dhabi, UAE, 26-30 May, 2014.
 66. M. Bilad, L. Marbelia, H. A. Arafat, I. Vankelecom, Role of membrane porosity in magnetically induced membrane vibration system for membrane bioreactor, 11th IWA Leading Edge Conf. on Water and Wastewater Technologies, Abu Dhabi, UAE, 26-30 May, 2014 (poster).
 67. M. Bilad, L. Marbelia, I. Passaris, V. Discart, H. A. Arafat, I. Vankelecom, MBR effluent polishing using membrane photobioreactor: Coupled cultivation and microalgae harvesting, 11th IWA Leading Edge Conf. on Water and Wastewater Technologies, Abu Dhabi, UAE, 26-30 May, 2014 (poster).
 68. B. Lalia, E. Guillen, H. A. Arafat, R. Hashaikeh, PVDF-HFP electrospun membranes for desalination by membrane distillation, Desalination for the Environment Conf., Limassol, Cyprus, 11-15 May, 2014.
 69. E. Guillen-Burrieza, A. Ruiz-Aguirre, G. Zaragoza, H. A. Arafat, Fouling and cleaning of MD systems under long operational periods, Desalination for the Environment Conf., Limassol, Cyprus, 11-15 May, 2014.
 70. L. Li, R. Hashaikeh, H. A. Arafat, Preparation of biodegradable poly (lactic acid) electrospun membrane with decreased pore size by post heat treatment, 2nd Intl. Conf. on Advanced Material Engineering & Technology, Bandung, Indonesia, 28-29 Nov. 2013.
 71. S. Pirani, H. A. Arafat, Food waste in Abu Dhabi's hospitality industry: How much is too much?, World Resources Forum, Davos, Switzerland, 6-9 Oct., 2013. (best presentation award)
 72. J. Adeoye, Y. Amha, V. Poghosyan, K. Torchyan, H. A. Arafat, Comparative LCA of two thermal energy storage systems for Shams 1 concentrated solar power plant: molten salt vs. concrete, 4th Intl. Conference on Environmental Engineering and Applications, Singapore, 24-25 Aug., 2013
 73. R. Thomas, E. Guillen-Burrieza, H. A. Arafat, Pore structure control of PVDF membranes using dual coagulation bath phase inversion process for application in membrane distillation (MD), 23rd North American Membrane
-

74. E. Guillen-Burrieza, A. Ruiz-Aguirre, G. Zaragoza, H. A. Arafat, Field studies showing effects of membrane distillation operations on membrane fouling, 23rd North American Membrane Society Conf., Boise, ID, USA, 10-12 Jun., 2013.
 75. E. Guillen-Burrieza, R. Thomas, B. Mansoor, H. A. Arafat, Fouling of membranes under intermittent seawater membrane distillation (SWMD) conditions, Intl. Scientific Conf. on Pervaporation, Vapor Permeation and Membrane Distillation, Torun, Poland, 12-15 May, 2013
 76. R. Saffarini, B. Mansoor, R. Thomas, H. A. Arafat, Effect of temperature-dependent microstructure evolution on pore wetting in PTFE membranes under membrane distillation conditions, Intl. Scientific Conf. on Pervaporation, Vapor Permeation and Membrane Distillation, Torun, Poland, 12-15 May, 2013 (poster).
 77. A. Farhat, F. Ahmad, N. Hilal, H. A. Arafat, Boron removal in new generation reverse osmosis (RO) membranes using two-pass RO without pH adjustment, 1st International Conf. on Desalination using Membrane Technology, Sitges, Spain, 7-10 Apr., 2013 (poster).
 78. R. Saffarini, B. Mansoor, R. Thomas, H. A. Arafat, Effect of temperature-driven changes on pore wetting behavior of PTFE membranes under membrane distillation conditions, 1st International Conf. on Desalination using Membrane Technology, Sitges, Spain, 7-10 Apr., 2013 (poster).
 79. L. Li, R. Hashaikeh, H. A. Arafat, Development of new eco-efficient micro-porous membranes for membrane distillation via electrospinning of poly (lactic acid), 1st International Conf. on Desalination using Membrane Technology, Sitges, Spain, 7-10 Apr., 2013.
 80. S. Salem, R. Thomas, E. Guillen, H. A. Arafat, and S. Thiel, Preparation and characterization of porous poly(vinylidene fluoride) membranes using new pore forming additives, AIChE Annual Meeting, Pittsburgh, PA, USA, 28 Oct.- 2 Nov., 2012.
 81. E. Guillen-Burrieza, R. Thomas, B. Mansoor, D. Johnson, N. Hilal, H. A. Arafat, Fouling behavior of PVDF and PTFE membranes under membrane distillation operations, Advanced Membrane Technology V Conf., Singapore, 14-19 Oct., 2012.
 82. R. Saffarini, B. Mansoor, R. Thomas, H. A. Arafat, Liquid entry pressure of PTFE membranes in membrane distillation: Surprising effects of temperature, Advanced Membrane Technology V Conf., Singapore, 14-19 Oct., 2012 (poster).
 83. T. Al-Sarkal, H. A. Arafat, Ultrafiltration versus sedimentation-based pretreatment for seawater feed to RO plants: Environmental impact assessment, Intl. Conf. on Membranes in Drinking and Industrial Water Production, Leeuwarden, The Netherlands, 10–12 Sep., 2012.
 84. E. Guillen-Burrieza, R. Thomas, H. A. Arafat, Influence of intermittent operation on membrane wettability in membrane distillation systems, Desalination for the Environment: Clean Water and Energy Conf., Barcelona, Spain, 23–26 Apr., 2012.
 85. K. Jijakli, T. Al-Sarkal, H. A. Arafat, Environmental impact assessment of design choices for autonomous desalination systems and pretreatment for RO plants, Desalination for the Environment: Clean Water and Energy
-

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- Conf., Barcelona, Spain, 23–26 Apr., 2012.
86. S. Pirani, L. Natarajan, Z. Abbas, H. A. Arafat, Life cycle assessment of membrane bioreactor versus CAS wastewater treatment: Masdar City and beyond, 6th Jordan Intl. Chemical Engineering Conf., Amman, Jordan, 12–14 Mar., 2012.
 87. R. Saffarini, H. A. Arafat, R. Thomas, Influence of pore structure on membrane wettability in membrane distillation, 6th Jordan Intl. Chemical Engineering Conf., Amman, Jordan, 12–14 Mar., 2012.
 88. L. Jung, M. Al-Shehhi, R. Saffarini, B. Warshay, H. A. Arafat, Paper or plastic? Clearing misconceptions on environmental impacts of coffee cups using life cycle assessment (LCA), 1st Intl. Conf. on Water and Environmental Sustainability, Sharjah, UAE, 14–17 Nov., 2011.
 89. S. Parajuli, M. Naizghi, B. Warshay, H. A. Arafat, A comparative life cycle assessment (LCA) of using virgin crushed aggregate (VCA) and recycled waste concrete aggregate (RCA) in road construction, 1st Intl. Conf. on Water and Environmental Sustainability, Sharjah, UAE, 14–17 Nov., 2011.
 90. A. Farhat, H. A. Arafat, F. Ahmad, Boron problem in desalination: Removal mechanisms and plant configurations in seawater reverse osmosis, 1st Intl. Conf. on Desalination and the Environment, Abu Dhabi, UAE, 29 Oct.–1 Nov. 2011.
 91. K. Jijakli, H. A. Arafat, S. Kennedy, P. Mande, V. Theeyattuparampil, Environmental assessment of solar-powered water desalination system using the LCA approach, 1st Intl. Conf. on Desalination and the Environment, Abu Dhabi, UAE, 29 Oct.–1 Nov. 2011.
 92. R. Saffarini, E. Summers, H. A. Arafat, J. Lienhard, Performance review of stand-alone membrane distillation systems, 1st Intl. Conf. on Desalination and the Environment, Abu Dhabi, UAE, 29 Oct.–1 Nov. 2011.
 93. R. Saffarini, E. Summers, H. A. Arafat, J. Lienhard, Assessment of solar powered membrane distillation desalination systems, Intl. Workshop on Membrane Distillation and Related Technologies, Ravello, Italy, 9–12 Oct., 2011.
 94. H. Arafat, B. Abu Tarboush, T. Matsuura, Recent advances in thin film composite (TFC) reverse osmosis membranes for seawater desalination, 7th Intl. Conf. on Membrane Science and Technology, Kuala Lumpur, Malaysia, 12–15 May, 2009.
 95. B. Abu Tarboush, D. Rana, T. Matsuura, H.A. Arafat, R. Narbaitz, Thin-film-composite polymeric membranes for seawater desalination using novel hydrophilic surface modifying macromolecules, 58th Canadian Chemical Engineering Conf., Ottawa, Canada, 19–22 Oct., 2008.
 96. A. Abu-Safa, A. El-Hamouz, H. A. Arafat, M. Almasri, Assessment of the spatial distribution of chlorine concentration in Nablus water distribution system, Intl. Conf. on Sustainable Development and Management of Water in Palestine, Amman, Jordan, 26–29 Aug., 2007.
 97. H. A. Arafat, A. El-Hamouz, A. Abu-Safa, M. Almasri, Methodology for disinfectant dose evaluation, modeling and optimization in drinking water in small Middle Eastern cities - Nablus city (Palestine) as a case study, 3rd Intl. Conf. on Water Resources in Mediterranean Basin, Tripoli, Lebanon, 1–3 Nov., 2006.
 98. H. A. Arafat M. Abu-Baker, Assessment of the conditions of rain water
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- harvesting wells used by Palestinian villagers- Ya'bad village (Jenin-Palestine) as a case study, 3rd Intl. Conf. on Water Resources in Mediterranean Basin, Tripoli, Lebanon, 1–3 Nov., 2006.
99. C. Pereira, G. Vandegrift, M. Regalbuto, S. Aase, H. A. Arafat, A. Bakel, D. Bowers, J. Byrnes, M. Clark, J. Emery, J. Falkenberg, A. Gelis, L. Hafenrichter, Y. Tsai, K. Quigley, M. Vander Pol, J. Laidler, Lab-scale demonstration of the UREX+ process, American Nuclear Society 2004 Annual Meeting, Pittsburgh, PA, USA, 13–17 Jun., 2004.
100. S. Aase, G. Vandegrift, M. Regalbuto, H. A. Arafat, A. Bakel, D. Bowers, J. Byrnes, M. Clark, J. Emery, J. Falkenberg, A. Gelis, L. Hafenrichter, R. Leonard, C. Pereira, K. Quigley, Y. Tsai, M. Vander Pol, J. Laidler, Lab-scale demonstration of the UREX+ process, AIChE Spring National Meeting, New Orleans, LA, USA, 25–29 Apr., 2004.
101. C. Pereira, H. A. Arafat, A. Gelis, S. Aase, G. Vandegrift, Development of an in-situ mixed iron oxide (IS-MIO) process for the removal of strontium and actinides from alkaline tank waste, AIChE Spring National Meeting, New Orleans, LA, USA, 25–29 Apr., 2004.
102. A. Bakel, S. Aase, H. A. Arafat, D. Bowers, J. Byrnes, M. Clark, J. Emery, J. Falkenberg, A. Gelis, C. Pereira, L. Hafenrichter, J. Laidler, M. Regalbuto, Y. Tsai, K. Quigley, M. Vander Pol, G. Vandegrift, Lab-scale demonstration of the UREX+ process, American Chemical Society 227th National Meeting, Anaheim, CA, USA, 28 Mar.– 1 Apr., 2004.
103. G. Vandegrift, M. Regalbuto, S. Aase, H. A. Arafat, A. Bakel, D. Bowers, J. Byrnes, M. Clark, J. Emery, J. Falkenberg, A. Gelis, L. Hafenrichter, R. Leonard, C. Pereira, K. Quigley, Y. Tsai, M. Vander Pol, J. Laidler, Lab-Scale demonstration of the UREX+ Process, Waste Management-2004 Conf., Tucson, AZ, USA, 29 Feb.– 4 Mar., 2004.
104. C. Pereira, H. A. Arafat, A. Bakel, M. Regalbuto, G. Vandegrift, P. Rickert, A. Dilger, K. Nash, A new process for removal of hazardous organic chemical from contaminated groundwater, 13th Symp. on Separation Science and Technology for Energy Applications, Gatlinburg, TN, USA, 27–30 Oct., 2003.
105. G. Vandegrift, M. Regalbuto, S. Aase, H. A. Arafat, A. Bakel, D. Bowers, J. Byrnes, M. Clark, J. Emery, J. Falkenberg, A. Gelis, C. Pereira, L. Hafenrichter, Y. Tsai, K. Quigley, M. Vander Pol, ANL UREX+ lab-scale demonstration results, Los Alamos National Lab Advanced Fuel Cycle Initiative Semi-Annual Review Meeting, Santa Fe, AZ, USA, 26–28 Aug., 2003.
106. H. A. Arafat, S. Aase, A. Gelis, M. Regalbuto, J. Sedlet, G. Vandegrift, Removing Sr and actinides from SRS tank waste using in-situ formed mixed iron oxides, 27th Actinide Separations Conf., Argonne, IL, USA, 9–12 Jun., 2003.
107. H. A. Arafat, N. Pinto, M. Abu-Daibes, A new fundamental model for aromatics adsorption on activated carbon in liquid media, AIChE Spring Meeting, New Orleans, LA, USA, 31 Mar.– 3 Apr., 2003.
108. H. A. Arafat, S. Aase, A. Gelis, M. Regalbuto, J. Sedlet, G. Vandegrift, Removal of Sr and actinides from alkaline tank waste using in situ formed mixed iron oxides (IS-MIO), AIChE Spring Meeting, New Orleans, LA, USA, 31 Mar.– 3 Apr., 2003.
109. D. Chamberlain, S. Aase, H. A. Arafat, C. Conner, R. Leonard, M.
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- Regalbuto, G. Vandegrift, Proof-of-concept flowsheet tests for cesium removal from tank waste by caustic-side solvent extraction, 2001 MRS Fall Meeting, Boston, MA, USA, 26–30 Nov., 2001.
110. H. A. Arafat, R. Leonard, Solvent recovery from aqueous effluents using a centrifugal contactor, 12th Symp. on Separation Science and Technology for Energy Applications, Gatlinburg, TN, USA, October 15–18 Oct., 2001.
111. R. Leonard, S. Aase, H. A. Arafat, D. Chamberlain, C. Conner, M. Regalbuto, G. Vandegrift, Experimental verification of caustic-side solvent extraction for removal of cesium from tank waste, 12th Symp. on Separation Science and Technology for Energy Applications, Gatlinburg, TN, USA, 15–18 Oct., 2001.
112. R. Leonard, S. Aase, H. A. Arafat, D. Chamberlain, C. Conner, M. Regalbuto, G. Vandegrift, Proof-of-concept flowsheet tests for cesium removal from tank waste by caustic-side solvent extraction, 25th Actinide Separation Conf., Boise, ID, USA, 14–18 May, 2001.
113. H. A. Arafat, N. Pinto, Enhancement of liquid aromatics adsorption by tailoring activated carbon surface, 51st Annual AIChE Meeting, Dallas, TX, USA, 31 Oct.– 5 Nov., 1999.
114. H. A. Arafat, N. Pinto, An investigation of the mechanism of adsorption of oxygen- and nitrogen-containing aromatics on activated carbon, 51st Annual AIChE Meeting, Dallas, TX, USA, 31 Oct.– 5 Nov., 1999.
115. H. A. Arafat, V. Hebatpuria, H. Rho, N. Pinto, P. Bishop, R. Buchanan, Utilization of reactivated carbon in stabilization of organics in solidification/stabilization processes for hazardous waste treatment, 24th Biennial Conf. on Carbon, Charleston, SC, USA, 11–16 Jul., 1999.
116. H. A. Arafat, N. Pinto, Hydrogen bonding in the adsorption of liquid aromatics on oxygen-containing activated carbon, 24th Biennial Conf. on Carbon, Charleston, SC, USA, 11–16 Jul., 1999.
117. M. Franz, H. A. Arafat, C. Leng, N. Pinto, An Investigation of the effect of chemical surface heterogeneity of carbon on the adsorption of selected liquid organics, 3rd Intl. Symp. on Effects of Surface Heterogeneity in Adsorption and Catalysis on Solids, Torun, Poland, 9–16 Aug., 1998.

Other key publications

1. H. A. Arafat and Sanaa Pirani, Water-energy Nexus Operational Toolkit: Technology Transfer Module. A United Nations Economic and Social Commission for Western Asia (ESCWA) document (2017)
2. H. A. Arafat and Sanaa Pirani, Water-energy Nexus Operational Toolkit: Renewable Energy Module. A United Nations Economic and Social Commission for Western Asia (ESCWA) document (2017)
3. H. A. Arafat and Sanaa Pirani, Water-energy Nexus Operational Toolkit: Resource Efficiency Module. A United Nations Economic and Social Commission for Western Asia (ESCWA) document (2017)
4. H. A. Arafat, S. Aase, A. Bakel, D. Bowers, A. Gelis, M. Regalbuto, J. Sedlet, G. Vandegrift, Parametric Studies on the Use of In Situ Formed Magnetite for the Removal of Sr and Actinides from Tank Waste at the Savannah River Site, Argonne National Laboratory Report No. ANL/CMT/MAGNETITE-2002/02 (2002)
5. C. Pereira, H. A. Arafat, J. Falkenberg, M. Regalbuto, G. Vandegrift, Recovery of Entrained CSSX Solvent From Caustic Aqueous Raffinate Using

-
- Coalescers, Argonne National Laboratory Report No. ANL-02/34 (2002)
6. H. A. Arafat, A. Gelis, G. Vandegrift, Operational Envelope for Studies Using Magnetite to Remove Strontium and Actinides from SRS Tank Waste, Argonne National Laboratory Report No. ANL-02/30 (2002)
 7. R. Leonard, S. Aase, H. A. Arafat, C. Conner, J. Falkenberg, M. Regalbuto, G. Vandegrift, Simulant Flowsheet Test with Modified Solvent for Cesium Removal Using Caustic-Side Solvent Extraction, Argonne National Laboratory Report No. ANL-02/22 (2002)
 8. H. A. Arafat, J. Falkenberg, R. Leonard, Solvent Recovery from Aqueous Effluent Using Process Diluent in the Caustic-Side Solvent Extraction (CSSX) Process, Argonne National Laboratory Report No. ANL-02/31 (2002)
 9. R. Leonard, S. Aase, H. A. Arafat, D. Chamberlain, C. Conner, M. Regalbuto, G. Vandegrift, Multi-Day Test of the Caustic-Side Solvent Extraction Flowsheet for Cesium Removal from a Simulated SRS Tank Waste, Argonne National Laboratory Report No. ANL-02/11 (2002)
 10. R. Leonard, M. Regalbuto, S. Aase, H. A. Arafat, J. Falkenberg, Hydraulic Performance of a 5-cm Contactor for Caustic-Side Solvent Extraction, Argonne National Laboratory Report No. ANL-02/18 (2001)
 11. R. Leonard, S. Aase, H. A. Arafat, C. Conner, J. R. Falkenberg, G. Vandegrift, Development of an Improved 2-cm Centrifugal Contactor for Cesium Removal from High-Level Waste, Argonne National Laboratory Report No. ANL-01/23 (2001)
 12. H. A. Arafat, M. Hash, A. Hebden, R. Leonard, Characterization and Recovery of Solvent Entrained during the Use of Centrifugal Contactors, Argonne National Laboratory Report No. ANL-02/08 (2001)
 13. H. A. Arafat, R. Leonard, Temperature Management of Centrifugal Contactor for Caustic-Side Solvent Extraction of Cesium from Tank Waste, Argonne National Laboratory Report No. ANL-00/31 (2001)
 14. R. Leonard, S. Aase, H. A. Arafat, D. Chamberlain, C. Conner, M. Regalbuto, G. Vandegrift, Interim Report on a Multi-Day Test of the Caustic-Side Solvent Extraction Flowsheet for Cesium Removal from a Simulated SRS Tank Waste, Argonne National Laboratory Report No. ANL-01/10 (2001)
 15. R. Leonard, S. Aase, H. A. Arafat, C. Conner, J. Falkenberg, G. Vandegrift, Proof-of-Concept Flowsheet Tests for Caustic-Side Solvent Extraction of Cesium from Tank Waste, Argonne National Laboratory Report No. ANL-00/30 (2000)
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KEYNOTE & INVITED TALKS

1. “Technology Advances in Industry Speeding Aid in Extreme Crises”, Invited speaker/panelist by International Desalination Association (IDA), World Future Energy Summit Water Forum, Abu Dhabi, United Arab Emirates (Jan. 16, 2019).
 2. “Sustainable Desalination: An integrated multidisciplinary approach”, keynote talk, 1st Intl. Forum on Socioeconomic Sustainability, Dubai, UAE (Apr. 16-17, 2018).
 3. “Sustainable Desalination: So we don’t miss the leaves, the trees or the forest”, invited seminar, New York University Abu Dhabi, Abu Dhabi, UAE
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(Feb. 11, 2018)

4. “Harnessing blue energy for sustainable agriculture in arid environment: a study from UAE”, plenary talk, Intl. Workshop on Innovations in Marginal Water Resource Use for Resilient Agriculture and Food Security, Tashkent, Uzbekistan (Dec. 10-13, 2017).
 5. “Fifty-four years of global membrane distillation research: Trends, breakthroughs and alignment with industry”, keynote talk, 10th Intl. Desalination Workshop, Busan, Korea (Nov. 22-24, 2017).
 6. “3D printed feed spacers based on triply periodic minimal surfaces to improve performance in RO, MD and UF”, Invited talk, 2nd Intl. Symp. on Innovative Desalination Technologies, Gyeongju, South Korea (Sep. 20-22, 2017).
 7. Invited panelist speaker at the UAE-International Renewable Energy Agency (IRENA) Workshop for the Asia Cooperation Dialogue, titled: “Role of Renewables in Enhancing the Water, Energy and Food Nexus”, Abu Dhabi, UAE (May 22, 2017).
 8. “Novel activation techniques of PVDF flat sheet membranes” Invited talk, Symposium on “Emerging membrane materials for sustainable separations”, 2017 Materials Research Society (MRS) Spring Meeting, Phoenix, AZ, USA (Apr. 17-21, 2017).
 9. Invited speaker in the “Water” session, 13th Annual Science and Technology in Society Forum, Kyoto, Japan (Oct. 2-4, 2016).
 10. “Reverse electrodialysis powered greenhouse concept for water- and energy-self-sufficient agriculture in the UAE”, Invited talk, Technical Workshop on “Renewable energy & desalination in the Water-Energy-Food Nexus”, Middle East Desalination Research Center, Muscat, Oman (May 31, 2016).
 11. “The water energy food nexus: An integrated approach to the Middle East water challenge” Conf., Invited speaker/panelist, by joint invitation from the Hollings Center for International Dialogue (USA), the Arab Gulf States Institute (USA) and Univ. of Central Florida (USA), Abu Dhabi, UAE (May 18, 2016).
 12. “Membrane distillation: A viable technology for utility-scale desalination?” Invited seminar, Chem. & Env. Eng. Dept., Univ. of Calabria, Rende, Italy (Feb. 25, 2016).
 13. “Pragmatic innovative technologies to meet sustainability targets,” Invited speaker/panelist, workshop co-organized by Masdar Institute and the Institute of Energy Economics (Japan), Abu Dhabi, United Arab Emirates (Feb. 23, 2016).
 14. “Membrane distillation: Where do we stand now?” keynote presentation, 2nd Intl. Conf. on Desalination and Environment, Doha, Qatar, (24-26 Jan., 2016).
 15. “Energy efficiency and energy recovery in water production”, Invited speaker/panelist, 4th Intl. Water Summit, Abu Dhabi, UAE (Jan. 20, 2016).
 16. “Towards sustainable desalination: Research at Masdar Institute of Science and Technology”, Invited seminar, Gwangju Institute of Science and Technology (GIST), Gwangju, South Korea (Nov. 17, 2015)
 17. “Understanding and mitigation of wetting and fouling in MD : Recent developments”, keynote presentation, 8th Intl. Desalination Workshop, Jeju Island, South Korea (Nov. 18-21, 2015)
 18. “Understanding pore wetting in hydrophobic porous membranes: Moving
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- beyond the Young-Laplace equation”, Invited talk, 7th Intl. Conf. on Porous Media, Padova, Italy (May 18-21, 2015).
19. “Sustainability of desalination in meeting the challenges of water security in the GCC”, invited talk, 7th World Water Forum, Daegu, South Korea (Apr. 15, 2015).
 20. “Meeting the challenges of water security in arid regions: Is desalination the solution?” Invited seminar, Political Sciences Dept., Univ. of Central Florida, Orlando, FL, USA (Apr. 1, 2015).
 21. “Water security in the GCC: Challenges and opportunities”, Keynote presentation, Water Security in the Middle East: A Multidisciplinary Dialogue Symposium, Univ. of Central Florida, Orlando, FL, USA (Mar. 31, 2015).
 22. “IDA panel discussion on desalination energy & environment nexus”, Invited speaker/panelist, 3rd Intl. Water Summit, Abu Dhabi, UAE (Jan. 20, 2015).
 23. “Mitigating risks to sustainability in desalination technologies via innovative materials, economic analyses and environmental assessment”, Invited talk, Arab-American Frontiers of Sciences, Engineering, and Medicine Symposium, Muscat, Oman (Dec. 13-15, 2014).
 24. “New synthesis pathways for flat sheet PVDF membranes for enhanced fouling and wetting resistance in MD operations”, Invited talk, 3rd IDA R&D Workshop on Emerging Technologies for Desalination: Advances in New Materials and Systems, Singapore (Dec. 8-9, 2014).
 25. “Sustainability of RO desalination in meeting future water demands”, keynote presentation, The 7th Jordan Intl. Chemical Eng. Conf., Amman, Jordan (Nov. 4-6, 2014).
 26. “Pathways for membrane pore structure control for wetting mitigation in PVDF membranes used in MD”, Invited talk, 4th Intl. Scientific Conf. on Pervaporation, Vapor Permeation and Membranes Distillation, Torun, Poland (Sep. 21-24, 2014).
 27. “Novel MD membranes tailored for enhanced flux and lower fouling and wetting propensity”, Invited talk, 1st Intl. Symp. on Innovative Desalination Technologies, Seoul, South Korea (Sep. 1-3, 2014).
 28. “High and dry: Addressing the Middle East water challenge”, Invited speaker/panelist, joint invitation from the Hollings Center for International Dialogue (USA) and the Univ. of Central Florida (USA), Istanbul, Turkey (May 14-18, 2014).
 29. “Renewable energy desalination – Bridging the gap between research and industry”, Invited speaker/panelist, 2nd Intl. Water Summit, Abu Dhabi, UAE (Jan. 21, 2014).
 30. “Energy recovery potential and environmental performance of various process options for municipal solid waste treatment”, Invited talk, Arab Academy of Sciences Conf. on Water-Energy Nexus and Waste Treatment for Sustainable Arab World, Beirut, Lebanon (Dec. 6, 2013).
 31. “Solid waste management in the hospitality sector in UAE”, Invited talk, 4th Annual Waste Management Middle East Forum, Dubai, UAE (Nov. 11, 2013).
 32. “Promoting sustainability in the hospitality sector in the UAE by addressing its food waste issue”, Invited talk, Green Middle East Forum for Environmental Change 2013, Sharjah, UAE (Oct. 29, 2013).
 33. “Environmental impacts of desalination processes”, keynote presentation, 2nd
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- ScienceOne Intl. Conf. on Environmental Sciences, Dubai, UAE (Apr. 15, 2013).
34. “Sustainable desalination processes: operational, economic, social, and environmental considerations”, Invited talk, 2nd Annual Middle East Water & Wastewater Operation and Maintenance Forum, Dubai, UAE (Mar. 27, 2013)
 35. “Membrane wetting and fouling in membrane distillation”, Invited seminar, Dept. of Chemical Eng., Univ. of Louisville, Louisville, KY, USA (Sep. 21, 2012).
 36. “Fouling behavior of PVDF and PTFE membranes under membrane distillation operations: opportunity for membrane development”, Invited seminar, Dept. of Civil and Environmental Eng., Univ. of Rhode Island, Kingston, RI, USA (Sep. 17, 2012).
 37. “Process challenges in membrane distillation for seawater desalination: membrane fouling and wetting”, Invited seminar, Dept. of Mechanical Eng., Massachusetts Institute of Technology, Cambridge, MA, USA (Sep. 18, 2012)
 38. “An initiative for exploring a salinity gradient power pilot project in the United Arab Emirates”, Invited talk, Integrated Network for Energy from Salinity Gradient Power Workshop, Barcelona, Spain (Apr. 25, 2011).
 39. “On the sustainability of solar desalination: Evaluation of solar desalination systems using environmental impact assessment”, Invited talk, 2nd Intl. Environment Conf., Ajman University, Ajman, UAE (Jun. 4, 2012).
 40. “Influence of pore structure on membrane wettability in membrane distillation”, Invited talk, Material Science Symp., New York University-Abu Dhabi, Abu Dhabi, UAE (Mar. 8, 2012)
 41. “The role of Masdar Institute in responding to water security issues in UAE and opportunities for collaboration”, Invited talk, Water Security Symp., organized by the British Council at Sultan Qaboos University, Muscat, Oman (Mar. 20, 2011)
 42. “Principles of membrane distillation”, Invited talk, Dept. of Mechanical Eng., Massachusetts Institute of Technology, Cambridge, MA, USA (Nov. 8, 2010)
 43. “Fouling and scaling in RO and NF systems”, Invited talk, Dept. of Mechanical Eng., Massachusetts Institute of Technology, Cambridge, MA, USA (Oct. 6, 2010)
 44. “Advances in thin film composite (TFC) reverse osmosis membranes for seawater desalination with applications in the Middle East”, Invited seminar, College of Engineering, Utah State Univ., Logan, UT, USA (Jul. 15, 2009).
 45. “Evaluation of teaching effectiveness in Palestinian universities”, Invited talk, Academic Colloquia 2008: New Horizons in Higher Education Teaching and Management, organized by Amideast-Palestinian Territory, Bethlehem, Palestinian Territory (Jun. 27, 2008).
 46. “Modified thin film composite RO membranes with reduced fouling for seawater desalination”, invited seminar, Dept. of Industrial Chemistry, Univ. of Duisburg-Essen, Essen, Germany (Aug. 1, 2007).
 47. “Sedimentation/coagulation for the treatment of textile wastewater in the Palestinian Territory”, invited seminar, Dept. of Industrial Chemistry, Univ. of Duisburg-Essen, Essen, Germany (Jul. 18, 2007)
 48. “Pollution prevention pays - The experience of the chemical engineering department at An-Najah University”, invited seminar, Chemical Eng. Dept.,
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Univ. of Ottawa, Ottawa, Canada (Nov. 11, 2005)

49. "Alternative technology for the removal of Sr and actinides from SRS low curie salt waste using in-situ formed mixed iron oxides (IS-MIO)", invited talk, US DOE Kickoff Meeting for EM-50 Alternative Project - Disposition of HLW Salt at SRS, Aiken, SC, USA (May 13, 2003)
50. "Removal of Sr and TRU elements from alkaline tank waste using in situ generated magnetite", invited talk, US DOE Tank Focus Area Mid-Year Review, Salt Lake City, UT, USA (Mar. 11, 2002)
51. "Chemical separations for environmental applications: Innovative uses for adsorption and solvent extraction", invited seminar, Dept. of Chemical Eng., Tuskegee University, Tuskegee, AL, USA (Jun. 12, 2001).

PATENTS

1. H. A. Arafat, "Vacuum membrane distillation (VMD) using aspirator to generate vacuum pressure", US-Patent No. 9,023,211 (issued: 2015)
2. H. A. Arafat, R. Abu Al-Rub, N. Sreedhar, O. Al-Ketan, "Novel Three-Dimensional Feed Spacers with Triply Periodic Minimal Surface Architectures for Membrane-based Systems", US Non-provisional Patent Application (Filed: 2017)

PEDAGOGICAL ACTIVITIES

Courses Taught

Masdar Institute
(2010 - Present)

Graduate-level courses:

- Sustainable Desalination Processes (S'13, S'14, F'15, S'17, S'18, S'19)
- Membrane Technology (S'15, S'16, F'17, F'18)
- Industrial Ecology (S'11, F'11, S'13, F'13, F'14)

An-Najah Univ.
(2003-2010)

Graduate-level courses:

- Solid waste management (F'04, S'09)
- Energy and the environment (S'06, F'07, F'08)
- Water treatment processes and systems (F'05)

Undergraduate-level courses:

- Mass transfer (S'04, S'05, S'06, S'07, S'08, S'09, S'10)
- Unit operation (F'03, F'04, F'05, F'06, F'07, F'08, F'09)
- Membrane processes and desalination (S'08, S'09, S'10)
- Special topics in chemical eng. (S'05, S'06)
- Separation processes (S'05, S'07)
- Plant design (F'05)
- Elementary principles of chemical engineering (F'03, F'04, F'05, F'06, F'08, F'09, S'10)
- Fluid mechanics (S'06, S'07, S'08, S'09, F'09)
- Statistical methods for engineers (S'04, F'04, S'05)
- Engineering economy (F'04, S'05, S'06, S'07, S'08, F'08, S'09, F'09, S'10)
- Process safety (F'03, F'05, F'06, F'08, S'09)

Study visits

2008

Teaching and Learning Centers at Stanford Univ., U. California-Berkeley, Kansas State Univ., and U. California-Irvine (USA).

2007	Teaching and Learning Centers at McGill Univ., Concordia Univ., and the Univ. of Ottawa (Canada).
2007	Teaching and Learning Centers at University College London, University of Manchester, Oxford Brookes University, and Sheffield Hallam University (UK).
2006	Energy & Environment Course development visit, Royal Institute of Technology (KTH) (Sweden).

Other

2007 - 2009	Director, An-Najah Univ. Program for Faculty Performance Evaluation
2007 - 2009	Founder and Director, An-Najah Univ. Training Program for New Faculty
1999 - 2000	Participant, Preparing Future Faculty Program, Univ. of Cincinnati, USA.
2007	Participant, Sixth international institute for new faculty developers, Ottawa, Canada. Organizer: Professional and Organizational Development Network in Higher Education.

RESEARCH FELLOWSHIPS

2019	Arab American Frontiers Research Fellowship, jointly with Prof. Ngai Yip, from Columbia Univ., USA. Sponsor: The US National Academy of Science (USA).
2009	Utah Water Research Lab. & Biological Eng. Dept., Utah State Univ., USA. Sponsor: Open Society Institute (USA) (May-Aug).
2007	Dept. of Technical Chemistry, University of Essen-Duisburg, Essen, Germany. Sponsor: German Academic Exchange Service (DAAD) (Germany) (Jun.-Aug.).
1995	Chemical Eng. Dept., Univ. of Halle-Wittenberg, Merseburg, Germany. Sponsor: German Academic Exchange Service (DAAD) (Germany) (Jun.-Aug.).

PROFESSIONAL WORKSHOPS ATTENDED (selected)

2018	“Design thinking workshop”, Abu Dhabi, UAE. Organizer: Winnovate (by SAP).
2018	“Internationalization in higher education institutes”, Abu Dhabi, UAE. Organizer: Abu Dhabi Department of Education and Knowledge.
2017	“Entrepreneurship bootcamp: from academic laboratory to commercial marketplace”, Abu Dhabi, UAE. Organizers: Massachusetts Institute of Technology & Masdar Institute.
2014	“International trends in sustainable water reuse technologies”, Abu Dhabi, UAE. Organizers: International Water Association and Water Reuse Association.
2014	“Polymer and inorganic membranes”, Boise, ID, USA. Organizer: North American Membrane Society.
2013	“Emerging membrane materials”, Boise, ID, USA. Organizer: North American Membrane Society.
2013	“Atomic force microscopy for energy and environmental applications”, Abu Dhabi, UAE. Organizer: Masdar Institute.
2013	“Expert workshop on red tides and HABS: Impact on desalination plants”, Muscat, Oman. Organizer: Middle East Desalination Research Center.

2012	“Desalination with solar energy”, Almeria, Spain. Organizer: Solar Platform of Almeria.
2011	“2010 Summer workshop of the center for clean water and clean energy”, Cambridge, MA, USA. Organizer: Massachusetts Institute of Technology.
2010	“Membrane for energy and water application”, Kuala Lumpur, Malaysia. Organizer: Universiti Teknologi Malaysia.
2009	“Water chemistry in RO and NF”, Amman, Jordan. Organizer: Middle East Desalination Research Center.
2009	“Environmental planning, prediction, and management of brine discharge from desalination plants”, Muscat, Oman. Organizer: Middle East Desalination Research Center.
2008	“Membrane technology used in desalination and in wastewater treatment for reuse”, Muscat, Oman. Organizer: Middle East Desalination Research Center.
2008	“Institutional self-study and other modes of institutional evaluation”, Ramallah, Palestinian Territory. Organizer: Central European University.
2008	“Efficient management of wastewater Treatment and Reuse”, Ramallah, Palestinian Territory. Organizer: Birzeit University.
2005	“Aquatic chemistry: fouling and scaling in reverse osmosis”, Muscat, Oman. Organizer: Middle East Desalination Research Center.
2005	“Desalination costing”, Limassol, Cyprus. Organizer: Middle East Desalination Research Center.
2004	“Membrane technology in drinking and industrial water treatment”, Amman, Jordan. Organizer: Middle East Desalination Research Center.
2003	13 research management workshops (200+ hours), USA. Organizer: Argonne National Lab.
2000 - 2003	20+ safety workshops, USA. Organizer: Argonne National Lab.

CONSULTANCY

2016 - 2017	United Nations Economic and Social Commission for Western Asia (ESCWA). Prepared 3 operational toolkit modules on water-energy nexus and delivered 3 workshops on the same to technical managers from ESCWA member countries.
2010	German Technical Cooperation (GTZ). Member, authorship team of the National Strategy for Solid Waste Management in Palestine.
2009	World Bank. Developed and delivered two workshops (20-hr ea.) on “Writing successful proposals” & “Project management skills”. Offered to faculty of two community colleges in Nablus, Palestinian territory.

SERVICE TO PROFESSION (selected)

2018	Member, selection committee, Zayed Sustainability Award, UAE.
2018	Member, Abu Dhabi Sustainability Week 2019 technical advisory committee, Abu Dhabi, UAE.
2018	Member, organizing committee, 6 th Arab-American Frontiers of Science, Engineering, and Medicine Symposium, Kuwait (by invitation of The US National Academy of Sciences).

2018	Member, organizing committee, Desalination for the Environment: Clean Water and Energy Conf., Athens, Greece.
2018 - Present	Advisor to the UAE Ministry of Education on development of a strategic plan for competitive research funding.
2018 - Present	External referee, faculty promotion applications, King Abdulaziz University, Saudi Arabia.
2018 - Present	Member, International selection committee, Middle East Desalination Research Center (MEDRC, Oman) PhD Fellowship Award Program.
2012 - Present	Member, Program management office, Abu Dhabi's Water Desalination Powered by Renewable Energy project.
2000 - Present	Member, referee panels of 30+ international scholarly journals, notably: Nature Communications, Nature Scientific Reports, ACS Applied Materials & Interfaces, ACS Environmental Science & Technology, Environmental Science & Technology Letters, Water Research, J. of Membrane Science, Desalination, Applied Energy, Renewable Energy, Renewable & Sustainable Energy Reviews, Waste Management.
2002 - Present	Referee of research grant proposals for Netherlands Organization for Scientific Research (The Netherlands), Massachusetts Institute of Technology Energy Initiative (USA), Argonne National Laboratory (USA), Singapore National Research Foundation (Singapore), Univ. of Wyoming (USA), Kuwait Foundation for the Advancement of Sciences (Kuwait), Kuwait University (Kuwait), American Univ. of Sharjah (UAE), Sultan Qaboos Univ. (Oman).
2017	Member, scientific program committee, 10 th Intl. Desalination Workshop, Busan, South Korea.
2017	Chair, Water, Food, and Energy Nexus theme, Solar World Congress, Abu Dhabi, UAE.
2017	Member, international advisory committee, 4 th Intl. Conf. on Membranes, Kerala, India
2017	Member, scientific committee, 5 th Intl. Scientific Conf. on Pervaporation, Vapor Permeation and Membranes Distillation, Torun, Poland
2016	Chair, 9 th Intl. Desalination Workshop, Abu Dhabi, UAE (co-Chair: Prof. Seung-Hyun Kim, Kyungnam Univ., South Korea).
2016	Member, organizing committee, 4 th Arab-American Frontiers of Science, Engineering, and Medicine Symposium, Abu Dhabi, UAE (by invitation of The US National Academy of Sciences).
2016	Member, advisory committee, University of London's School of Oriental and African Studies Centenary Conf.: "Environmental Challenges in the MENA Region", London, UK.
2016	Member, international scientific committee, 9 th Intl. Conf. on Thermal Engineering Theory and Applications, Abu Dhabi, UAE
2016	Reviewer of research project report, Center of Excellence in Desalination Technologies, King Abdulaziz Univ., Saudi Arabia
2015	Member, international advisory committee, 2 nd Intl. Conf. on Membranes and Applications, Kolkata, India
2015	Member, scientific program committee, 8 th Intl. Desalination Workshop, Jeju Island, South Korea
2015	Member, international advisory committee, 3 rd Intl. Conf. on Membranes, Kerala,

	India
2015	Member, organizing committee, World Congress and Expo on Nanotechnology and Material Science, Dubai, UAE
2015	Co-organizer, Water Security in the Middle East: A Multidisciplinary Dialogue Symposium, Univ. of Central Florida, Orlando, FL, USA
2015	Member, scientific committee, 3 rd Intl. Conf. on Water, Energy and Environment, Sharjah, UAE
2014	Member, scientific committee, 4 th Intl. Scientific Conf. on Pervaporation, Vapor Permeation and Membranes Distillation, Torun, Poland
2014	Member, international advisory committee, 7 th Jordan Intl. Chemical Engineering Conf., Amman, Jordan.
2013	Member, scientific committee, Intl. Scientific Conf. on Pervaporation, Vapor Permeation and Membrane Distillation, Torun, Poland
2013	Member, scientific committee, 1 st Intl. Conf. on Desalination using Membrane Technology, Sitges, Spain.
2012 - Present	Referee for books: "Sustainability: a way to abundance" (CRC Press), "Handbook of membrane separations: chemical, pharmaceutical and biotechnological applications" (CRC Press), "Preparation of green national accounts in UAE" (Emirates Center for Strategic Studies and Research).
2013 - 2014	Referee, best paper award, Intl. Scientific Conf. on Pervaporation, Vapor Permeation and Membrane Distillation, (Poland, 2013 & 2014), 23 rd North American Membrane Society Annual Meeting (USA, 2013)
2012	Member, international advisory committee, 6 th Jordan Intl. Chemical Engineering Conf., Amman, Jordan.
2012	Member, judge panel, BMG Foundation's Award for Best Awareness Campaign about Water Preservation, Saudi Arabia.
2011	Member, organizing committee, 1 st Intl. Conf. on Desalination and the Environment, Abu Dhabi, UAE
2011	Member, scientific committee, 1 st Intl. Conf. on Water and Environmental Sustainability, Sharjah, UAE.
2010	Workshop organizer, 11 th Mediterranean Research Meeting, Florence, Italy
2005 - 2010	Member, American Standard of Testing and Material (ASTM) International Committee D-28 on Activated Carbon, USA
2003 - Present	Chair of at least one session in each of the following international conferences: Desalination for the Environment Conf. (Greece, 2018), 10 th Intl. Desalination Workshop (Korea, 2017), Desalination for the Environment: Solar World Congress (UAE, 2017), Clean Water and Energy Conf. (Italy, 2016), 2 nd International Conf. on Desalination and Environment (Qatar, 2016), 8 th Intl. Desalination Workshop (S.Korea, 2015), Desalination for Clean water and Energy Conf. (Italy, 2015), 4 th International Scientific Conf. on Pervaporation, Vapor Permeation and Membrane Distillation (Poland, 2014), Desalination for the Environment Conf. (Cyprus, 2014), 24 th North American Membrane Society Annual Meeting (USA, 2014), 23 rd North American Membrane Society Annual Meeting (USA, 2013), 3 rd Intl. Scientific Conf. on Pervaporation, Vapor Permeation and Membrane Distillation (Poland, 2013), 1 st Intl. Conf. on Desalination using Membrane Technology (Spain, 2013), 6 th Jordan Intl. Chemical Engineering Conf. (Jordan, 2012), 1 st Intl. Conf. on Water and Environmental Sustainability (UAE, 2011), Intl. Workshop on Membrane

Distillation and Related Technologies (Italy, 2011), 7th Intl. Conf. on Membrane Science and Technology (Malaysia, 2009), Spring Meeting of the American Institute of Chemical Engineers (USA, 2003).

DEPARTMENTAL/ UNIVERSITY SERVICE

(selected)

2018 -	Chair, "Environmental Engineering" major concentration committee, Chemical Eng. Dept., Khalifa Univ.
2018	Member, University Promotion Review committee, Khalifa Univ.
2017	Member, Department Promotion committee, Chemical Eng. Dept., Khalifa Univ.
2011 - 2017	Chair (2011-2015) and member (2016-2017), Faculty Recruitment and Effectiveness committee, Chem. & Env. Eng. Dept., Masdar Institute
2016 - 2017	Member, Quality Assurance committee, Chem. & Env. Eng. Dept., Masdar Institute
2015	Chair, Business Travel Policy committee, Masdar Institute
2013 - 2014	Member, Research Advisory Committee for Masdar Institute-Massachusetts Institute of Technology Joint Flagship Research Projects.
2010 - 2013	Member, Curriculum committee, Water and Environmental Eng. Program, Masdar Institute
2012	Chair, Student Admissions Committee, Masdar Institute
2007 - 2010	Member, Committee for Monitoring the Execution of the Strategic Plan for An-Najah Univ.
2005 - 2010	Member, An-Najah University Quality Assurance Unit
2006 - 2010	Member, Steering Committee for the Environmental Sciences MSc Program, An-Najah Univ.
2006 - 2010	Member, Steering Committee for the Clean Energy MSc Program, An-Najah Univ.
2006 - 2007	Elected Member, College of Engineering Council, An-Najah Univ.
2007	Member, Committee for Revising the Grading System at An-Najah Univ.
2006	Member, An-Najah Univ. Best Faculty Award committee, An-Najah Univ.
2005	Chair, Engineering Career Fair committee, An-Najah Univ.
2003 - 2010	Member, Curriculum committee, Chemical Eng. Dept., An-Najah Univ.
2001 - 2003	Member, Safety committee, Chemical Technology Division, Argonne National Laboratory
1999 - 2000	President, Graduate Student Association, Chemical Eng. Dept., Univ. of Cincinnati
1998 - 1999	Member, Student Advisory committee for University Budget, Univ. of Cincinnati

MEMBERSHIP IN PROFESSIONAL SOCIETIES

2014 - Present	Member, International Society for Porous Media, The Netherlands
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2012 - Present	Member, North American Membrane Society, USA
2012 - Present	Member, European Membrane Society, France
2011 - Present	Member, European Desalination Society, Italy
2009 - Present	Member, International Desalination Association, USA
2009 - 2010	Member, American Water Resources Association, USA
2008 - 2011	Member, Institute for the Advancement of Teaching in Higher Education, Canada
2007 - 2010	Member, The Professional and Organizational Development Network in Higher Education, USA
2005 - Present	Fellow, The Palestinian American Research Center, Washington, D.C., USA.
1998 - 2002	Affiliate member, American Institute of Chemical Engineers, USA
1996 - Present	Member, Jordanian Association of Engineers, Jordan
