Curriculum Vitae

Personal Information

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I am currently working at Qatar Environment and Energy Research Institute in desalination technology development from prototype to pilot scale. I am leading the advanced MED desalination technology using pilot plant facility which is based on novel ideas to reduce energy consumption and reduce water cost. I am also working at the College of Science and Engineering, HBKU to teach desalination technology and rolling scientific advisory for MSc and PhD students.

I have worked at the Desalination R&D Center based company (Doosan Heavy industries, south Korea, UAE and KSA) and contributed in the development of the commercial desalination plants in the GCC countries through pilot program including Multi Stage Flash (MSF), Multi Effect Distillation (MED), Reverse Osmosis (RO).

During my work at Suez University, Egypt, I have participated in several EC funded projects in the solar desalination (CSP, PV, Wind, MSF, MED, NF) in direct collaboration with several European institutes (Spain, Italy, Germany, Swiss, and France).

I have published about 39 Journal papers and 34 Conference papers. I have published one book and 2 book-chapters. I have 4 GCC patent-pending and 1 PCT patent. I have developed a Visual simulation (VSP) software for process design and techno economics of desalination processes.

2014- now	Scientist at Qatar Environment and research Institute, Doha, Qatar
2017- now	Associate Professor (JA) at College of Science and Engineering, HBKU, Qatar.
2014-2014	Researcher at Water Desalination Center, Doosan Heavy Industry, King Saudi Arabia.
2012-2013	Associate professor (Thermodynamics, Desalination Technology) at Suez Univ., Egypt
2007-2011	Researcher at Water Desalination Center, Doosan Heavy Industry, Dubai, UAE
2006 -2006	Lecturer (Thermodynamics) at Engineering Science Department, Suez Univ., Egypt
2001-2006	PhD in Thermo-economic Analysis of Desalination processes. Suez University, Egypt
2000-2001	Working assistant lecturer at the Engineering Science department, Suez Univ., Egypt
1996-1999	M.Sc. in Solar desalination at Engineering Science Department, Suez University, Egypt
1994-1995	Working assistant lecturer at the Engineering Science department, Suez Univ., Egypt
1988-1993	Study Mechanical Engineering (M.Sc.) at Faculty of Engineering, Alexandria University, Egypt.

Ongoing R&D Activities

- Leading the advanced MED desalination technology to reduce energy consumption and water cost.
- Associate professor at the College of Science and Engineering, HBKU, Qatar.
- LPI of awarded NPRP10 project in the thermally enhanced polymer tubes for MED desalination plant.
- Development a modular Visual Simulation Program for process simulation and techno economics.
- Direct engagement with QEWC, Qatari Stakeholder to build MED pilot test.
- Technical advisor to Umm AL Houl Power and desalination Plant, Qatar.
- Collaboration with National institute (Texas AM Qatar and Qatar University)
- Collaboration with Solenis/BASF company (Germany) for high TBT anti scalant
- Collaboration project with Kaiserslautern University, Germany "Thermally enhanced polymer HX"

Research Area: Water Desalination Technology

1. **Advanced MED desalination plant** (patented ideas). To reduce the operational and capital cost of the evaporator and intake/outfall construction. Prototype based on process and CFD simulation. Development a proof of concept by installing pilot test with QEWC (Qatari stakeholder).
2. **Thermally enhanced polymer-based graphene tubes in MED** in order to reduce the capital cost and mitigate corrosion in thermal desalination plants by developing bench experiment to test the surface wettability and thermal conductivity before testing in MED pilot test.
3. **Tri-hybrid (RO-FO-MED/MSF) desalination process** to increase the overall plant recovery ratio and to reduce the energy consumption and to obtained maximum allowable recovery from RO brine reject. The product blend of the thermal and the RO permeate enables to control the boron concentration within the acceptable limit.
4. **Membrane distillation**. This invention provides a technical solution to the limited process recovery ratio of the conventional MED desalination technology.
5. **Novel orifice design for giant MSF** Desalination plants.
6. **ZLD application** using optimized thermal systems (MVC) for brine management application.
7. **Visual Simulation Package (VSP)** for process design and technoeconomic of desalination processes.

Teaching and Scientific advisory experience (HBKU)

Associate Professor at College of Science and Engineering, Hamad Bin University, Qatar

- Abdul Rahman Zuhir: Hybrid desalination MED-MD, 2019-till now
- Furqan Tahir (PhD): CFD simulation of Novel MED Desalination plants (2017–until now).
- Mohamed Atta Alhaj (PhD): Solar desalination (2019).
- Mehzabeen Mannan (MSc): Environmental Impact of water use on the whole life cycle (2018).
- Mohamed Alaaeldin (MSc): Technoeconomic of ZLD Technology (2017).

Industrial Experience: Pilot Plant studies

(1) I have led several process design and desalination technology development during my work in R&D Water Center based Doosan Company (Dubai - UAE, 2007-2011 and Al Khubar- KSA mid 2014)

- High temperature Multi Stage Flash (MSF), Doosan heavy industry & Construction, South Korea
- High temperature MED, Doosan heavy industry & Construction, South Korea NF-RO, Doosan, Korea
- High performance and high temperature MSF-OT, Doosan heavy industry & Construction, Saudi Arabia.

(2) I have led several process design and desalination technology development during my work in Suez University (2011-2013) funded by European Commission:

- High performance hybrid Nano Filtration- Multi Stage Flash (NF-MSF) using renewable energy (STDF), Egypt.

- Concentrated Solar Power – Multi Effect Distillation (CSP-MED) project, (EC-fund), Egypt.

Funded Project (QNRF) Awarded

- LPI: NPRP10-0205-170349 (2018-2021). Novel Thermally Enhanced Polymer Heat Exchanger for Multi Effect Distillation (MED) Desalination Plants, (2018-2021). Abdelnasser Mabrouk (LPI, HBKU, Qatar), Ahmed Abdalla (PI, Texas AM Qatar), H.J. Bart (PI, UNIKL, Germany), Igor Krupa (PI, QU, Qatar), Muammer Koc (HBKU), Sun One Lee (HBKU).

Funded Project from QEERI

1. LPI: Advanced MED Desalination plant, (2016 - 2019).
2. PI: Optimization of pretreatment of RO plant, (2016 - 2019).
3. PI: Potable Solar PV powered mobile RO unit (2015-2016).
4. PI: Feasibility of hybrid FO with MSF (2014 - 2015)

Assignments and Community services

1. Desalination lab layout and skid unit commissioning,
2. Appointed as associated professor in HBKU,
3. Technology Innovation Committee,
4. Water Grand Challenge Task force with stakeholder in Qatar,
5. Participate in SWAT analysis of water desalination activities in QEERI.

Engage with Qatari Stakeholder (QEWC)

To establish a pilot plant facility for technology innovation development (thermal and membrane technology. The scope of work includes a detailed engineering design, fabricate, supply and erect of a custom-made MED desalination pilot test (25 m^3 /day). A new concept of advanced MED technology is proposed to reduce the energy consumption by 40 %, reduce footprint of the desalination plant, and reduce dumped thermal energy back to the seawater.

- QEWC and QEERI have signed agreement on April 2018.
- Site visit to Rass Abu Fontas and Dukhan site
- Technical meeting with QEWC on 2016 to define the role, responsibility and commitment for both parties.
- QEWC share to supporting the project by offering site at Dukhan, concrete foundation, seawater intake/outfall facilities, utilities (electricity & water), and skilled labor for operation and maintenance.
- Preparing the agreement between QEWC and QEERI (undergoing).

International Collaboration

- Lab abroad visit to Bremen University, Germany (December 2017) to conduct excremental evaluation of the scale deposition on the tube surface of the MED evaporator.
- Initiation of a collaboration with TECHNOFORM Company to development thermally enhanced polymer tubes for MED , Germany
- Initiation of a collaboration with BASF Company to development high TBT anti scalant, Germany
- Frame of work with Vito to development brine treatment, Belgium

My Competency

1. Application of knowledge:

- I have utilized my previous industrial experience during the work for Doosan Heavy Industries in the desalination technology development to define the technical challenges of the existing MED desalination plants.
- I have prepared a technical approach and plan of the whole project of advanced MED technology development. The first task utilizing my process design and simulation (VSP) and CFD simulation tool to development a detailed design of the pilot plant before manufacturing process which save money as well as man power. The second task has been dedicated to prepare pilot plant specifications, procurement, manufacturing, setup and commission. The third task focus is to conduct the pilot testing verification to convince the stakeholders and technology providers.
- I have developed powerful software (visual simulation program) for design and simulation of different desalination processes (thermal/membrane). This tool enables not only designers, researchers but also students to understand the desalination technology performance and evaluate novel desalination processes.

2. Delivering Results

- I have developed five-year setting objective to development an advanced MED technology to address the pain of the MED desalination plants. The first phase of aims to design, procurement, and manufacturing, installation, commissioning and testing of MED pilot plant based on 2 patents ideas. The second phase aims to utilize the pilot plant to proof a new anti scalant by which the productivity of the MED plant will be increase. The third phase aims to mitigate corrosion in the desalination plant by replacing metal tube by thermoplastic tubes.
- I have prepared feasibility study of advanced MED to reduce the energy consumption from 16 to about 7 kWh/m^3 and 25 % unit water cost lower than conventional design. Technoeconomic analyses of development of a new anti scalant for high operating temperature MED or high seawater feed concentration to increase the unknit production and to reduce the water cost by 20 %. Feasibility study of utilizing thermal enhanced polymer tube to mitigate corrosion and reduce unit water cost (20 %).

3. Developing people

- I have anticipated the key members to start the project with and the team shows synergy of different background among Mechanical Engineering, Chemical Engineering, and Chemist/physios that are essentially for MED technology development.
- Mentors 1 Qatari research assistant to work in the pilot plant and assist to conduct operation.
- Advisor for (1) PhD student and (1) Research Associate to conduct the process simulation and CFD simulation of the MED evaporator to optimize the geometry for mini thermal losses and perform uniform vapor flow.
- I am working as associate professor in environment sustainability program in the College of Science and Engineering, HBKU and teaching desalination technology course and role different advisory roles for MSc/PhD students.
- I have discussed with members from core lab (scale deposition characterization using SEM, TEM) and analytical lab (water analysis using IC) would be engaged and involved once the pilot plant commissioned which their feedback results will help to develop the proof of concept.
- Deliver seminar for HBKU students about the desalination technology and faculty introduction for the pursue and fascinating student to join and contribute in the desalination project at QEERI and get degree from HBKU.
- Mentor 2 HBKU students of a 3D printing project during the course.
- Mentor for 2 HBKU students in a proposal to development of MSF technology. The proposal has short listed for judgment at HBKU innovation center.

4. Excellence Orientation

- I have had several technical meetings with (QEWC), the major Qatari stakeholder of O&M of the desalination plants. I have presented the novel concept to reduce the energy consumption and reduce water unit cost. A successful agreement with QEWC to offer a site at Dukhan within commercial desalination facility to build MED pilot plants for field demonstration test.
- During my visit to Germany (April 2019) I have met BASF to development of anti scalant utilizing MED pilot plant. This collaboration would expedite the development process.
- I have delivered different presentation/lectures of desalination trend in GCC for HBKU post graduate and Qatar University students.
- I have presented the novel design in the USA Conference 2019 where local and international stakeholders have participated.

5. Innovation

- I have filed GCC patent application No. 2016-31325 to reduce thermal losses within MED evaporator. The examiner identified the industrial application of the idea.
- I have filed application (GCC) for combined advanced MED Desalination plants with membrane distillation for brine management.
- Filed US application 16/320442 for hybrid system to maximize the thermal process recovery ratio.
- Identify and propose thermally enhanced polymer tube to mitigate corrosion that faced metal tubed of existing MED evaporator
- Identify and propose development a new anti scalant to allow MED operating at temperature higher than 65 C.
- Building pilot plant within commercial desalination plant campus is an innovative solution for direct engagement with the stakeholder and make use the logistic available such ready intake/outfall which support continuous feed of seawater and reject of the pilot brine to the seawater.

6. Leadership

- I am a LPI of advanced MED technology project and I have revised the project management, task time domain, detailed approach to achieve target and deliverable of each task.
- I am LPI of NPRP10-0205-170349 (2018-2021). Novel Thermally Enhanced Polymer Heat Exchanger for Multi Effect Distillation (MED) Desalination Plants, (2018-2021). Abdelnasser Mabrouk (LPI, HBKU, Qatar), Ahmed Abdalla (PI, Texas AM Qatar), H.J. Bart (PI, UNIKL, Germany), Igor Krupa (PI, QU, Qatar), Muammer Koc (HBKU), Sun One Lee (HBKU).
- I have inspired Research Associate to perform CFD simulation of conventional and novel MED evaporator (vapor route and thermal losses evaluation). I have provided the boundary conditions using process simulation program then verify their results.
- I have inspired PhD students to perform CFD simulation of conventional and novel MED evaporator (wettability and liquid flow pattern around tube in the tube bundle). I have provided the boundary conditions using process simulation program then verify their results.
- I have identified the lack of manpower (technician) to run the pilot plant and perform maintenance. I am trying to rely on QEWC technician as an option.
- Initiate collaboration Solenis/BASF chemical company would expedite the project achievement and shows QEERI adding value in testing and verify novel anti scalant for high operating temperature in order to increase MED desalination plant efficiency and reduce water unit cost.

7. Research Orientation

Based on previous industrial experience I have outlined and remarked the most critical research questions of conventional MED technology in terms of high thermal losses and low efficacy recovery system. Using thermodynamic analysis based Gibbs free energy principals function to define the gap and opportunity of optimizing the MED process. Moreover, I have analyzed and quantified thermal losses and limitation of the current thermal vapor compression system using well developed VSP software. Accordingly, I have developed two patentable ideas to provide technical solution. Then, I have proposed pilot plant for experimental evaluation of the new concept in order to convince the stakeholder and show the technical viability of the patent idea. The verified VSP tool is utilized to design the pilot scale plant and sizing each equipment. The tender is prepared based on the process design of pilot plant using VSP program. I have recall the CFD simulation of the flow pattern and flow characterization (vapor route and seawater falling film, wettability, pressure drop, mass flow rate, and temperature distribution) within MED evaporator which may be is difficult to be determine experimentally or be measured by instrumentations. I have published several papers international journal and international conferences to calibrate the obtained results.

Publications

(i) Pending-Patents

1. Abdel Nasser Mabrouk. Tri Hybrid Desalination System. US application 16/320,442.
2. Abdel Nasser Mabrouk, Combined MED and MD system. GCC patent No. 2018-35096
3. Abdel Nasser Mabrouk and Hassan Abdulrahim. Desalination System. GCC Patent No.2017-32908.
4. Abdel Nasser Mabrouk. Multi stage Flash (MSF) evaporator, GCC Patent No. 2017-32736.
5. Abdel Nasser Mabrouk. Multi Effect Distillation Evaporator. GCC Patent No. 2016-31325.

(ii) **Book and Book Chapter**

1. Abdel Nasser Mabrouk. Techno-economic Analysis of Seawater Desalination Plants. ISBN: 978-3-659-17934-1, LAP LAMBERT Academic Publishing, Germany, (**2012**).
2. Abdel Nasser Mabrouk, H Fath, M Darwish, H Abdulrahim (**2015**). Techno- economics of hybrid NF/FO with thermal desalination plants. Book chapter, book title: Desalination Updates, ISBN 978-953-51-4239-3, 2015.
3. M. A. Darwish, H. K. Abdulrahim, A. A. Mabrouk, A. S. Hassan (**2015**). Cogeneration Power Desalting Plants Using Gas Turbine Combined Cycle, Book title: Desalination Updates, ISBN 978-953-51-4239-3, 2015.

(iii) **Peer-reviewed Journal articles**

1. Furqan Tahir, **Abdelnasser Mabrouk**, Muammer Koc. : CFD Analysis of Film Thickness for Aqueous Lithium Bromide (LiBr) Solution Falling Over Horizontal Tube under Low Liquid Loads. Accepted in Journal of Energies, 2020, 13(2), 30.
2. Furqan Tahir, **Abdelnasser Mabrouk**, Muammer Koc. Impact of Surface tension and Viscosity on falling film thickness in Multi Effect Desalination (MED) horizontal tube evaporator. International of Thermal Engineering, 150, 106235, 2019.
3. Ahmed Abotaleb and **Abdelnasser Mabrouk**. CFD analysis of the demister location impact on the thermal losses and the vapor uniformity within the MED desalination plant. Desalination and Water treatment (accepted, 2019).
4. Furqan Tahir, **Abdelnasser Mabrouk**, Muammer Koc. Review on CFD Analysis of Horizontal Falling Film Evaporators in Multi Effect Desalination Plants. Desalination and Water treatment, 166 (2019) 296–320 .doi:10.5004/dwt.2019.24487 Desalination and Water Treatment.
5. **Abdelnasser Mabrouk** and Ahmed Abotaleb. Technical analysis of the tube bundle orientation impact on the MED Plant efficiency. Desalination and Water treatment, 143 (2019) 165-177. Doi:10.5004/dwt.2019.23558.
6. **Abdelnasser Mabrouk**. Hybrid thermal and membrane desalination technologies for the GCC countries. Journal of desalination and water purification, volume 12, issue: September 2018.
7. Mehzabeen Mannan, Mohamed Alhaj, **Abdel Nasser Mabrouk** and Sami G. Al Ghamdi. Examining the Life-cycle Environmental Impacts of Desalination: A Case Study in the State of Qatar. Desalination Journal, 452 (2019) 238-248.
8. Mohamed Alhaj, Abdelnasser Mabrouk and Sami G. Al Ghamdi. Energy Efficient Multi-Effect Distillation Powered by a Solar Linear Fresnel Collector. Energy Conversion and Management 171 (2018) 576-586.
9. **Abdel Nasser Mabrouk**, Muammer Koc, Ahmed Abdala, Technoeconomic Analysis of Tri- Hybrid Reverse Osmosis-Forward Osmosis- Multi-Stage Flash Desalination Process, Desalination and Water treatment, 98(2017) 1-15.
10. **Abdel Nasser Mabrouk**, Yasser Elhenawy, Mohamed Abdelkader Mohammed Shatat. The Impact of baffle orientation on the performance of the hollow fiber membrane distillation. Desalination and Water Treatment, 58 (2017) 35-45**.**
11. Hassan Abdulrahim, Abudlsattar M. Al-Rasheed, Ashraf Hassan, **Abdel-Nasser Mabrouk**, Basem Shomar, M Darwish. Reverse Osmosis Desalination System and alga blooms, Part III: SWRO Pretreatment. Desalination and Water Treatment, 60, 11-38 (2017).
12. **Mabrouk A**, Elhenawy Y, Moustafa G, Experimental Evaluation of Corrugated Feed Channel of Direct Contact Membrane Distillation. J Membra Sci Technol 6: 151(2016). doi:10.4172/2155-9589.100015.
13. M.A. Darwish, H.K. Abdulrahim, A.S. Hassan, **A.A. Mabrouk**. PV and CSP solar technologies & desalination: economic analysis. Desalination and Water Treatment, 1-23 (2015).
14. **Abdel Nasser Mabrouk**, Hassan Fath, Technoeconomic study of a Novel Integrated Thermal MSF- MED Desalination Technology. Desalination 371, 115-125, (2015).
15. M. Darwish, A. Hassan, **Abdel Nasser Mabrouk**, H. Abdulrahim, Adel Sharif. Viability of Integrating Forward Osmosis (FO) as Pre-treatment for existing MSF Desalting Unit. Desalination and Water Treatment, 1-11, (2015).
16. **A.A. Mabrouk**, K. Bourouni , H.K. Abdulrahim, M. Darwish, A.O. Sharif, Impacts of tube bundle arrangement and feed flow pattern on the scale formation in large capacity MED desalination plants, Desalination 357 (2015) 275–285.
17. M.A. Darwish, H.K. Abdulrahim, A.S. Hassan, **A.A. Mabrouk**, A.O. Sharif. The forward osmosis and desalination. Desalination and Water Treatment, (2014) 1–27.
18. Mohamed Darwish, Hassan Abdulrahim, **Abdel Nasser Mabrouk**, Ashraf Hassan, Basem Shomar, Reclaimed wastewater for agriculture irrigation in Qatar, Global Journal of Agricultural Research and Reviews, Vol. 3 (1), pp. 106-120, (2015).
19. Aiman Al-Rwajfeh, Seungwon Ihm, Hiradesh Varshney, **Abdel Nasser Mabrouk**. Scale formation model for high top brine temperature multi stage flash (MSF) desalination plants. Desalination 350, 53-60 (2014).
20. Ali Altaee, **Abdel Nasser Mabrouk**, Karim Borouni. Forward osmosis pretreatment of seawater to thermal desalination: High temperature FO-MSF/MED Hybrid System. Desalination 339 (2014) 18-25.
21. G. Iaquaniello, A. Salladini, **A. A. Mabrouk**, H.E.S. Fath. Concentrating solar power (CSP) system integrated with MED-RO hybrid desalination. Desalination 336 (2014) 121-128.

22. Ali Altaee, **Abdel Nasser Mabrouk**, Karim Borouni. A novel Forward Osmosis Membrane Pretreatment of Seawater for Thermal Desalination Processes. Desalination, 326, pp. 19-26, (2013).
23. Ahsan A. , A. Rahman, A. Shanableh, N.N. Nik Daud, T.A. Mohammed, **ANA Mabrouk**. Life Cycle Cost Analysis of a Sustainable Solar Water Distillation Technique, *Desalination and Water Treatment*, (2013).
24. **Abdel Nasser Mabrouk**. "Techno-economic Analysis of Tube Bundle Orientation for High Capacity brine recycle MSF Desalination Plants. Desalination, (2013).
25. **Abdel Nasser Mabrouk**. "Techno-economic Analysis of once through Long Tube MSF Process for High Capacity Desalination Plants. Desalination Journal, 2013.
26. **Abdel Nasser Mabrouk** and Hassan S. Fath. Experimental Study of High Performance hybrid NF-MSF by Renewable Energy. Desalination and Water Treatment, (2013), 1-10.
27. **Abdel Nasser Mabrouk** and Hassan Elbanna Fath. Techno-economic analysis of hybrid high performance MSF desalination plant with NF membrane. Desalination and Water Treatment (2012), 1944-3994/1944-398.
28. Amr Mahmoud, J Robert, **Abdelnasser Mabrouk**, A. Imteyaz, A. Nafey, JS Choi, JK Park, S. Nied, J. Detering. New Anti-scalant Performance evaluation for MSF technology. Desalination and Water Treatment,1944-3994/1944-3986@2012**.**
29. **Abdel Nasser Mabrouk**, Ahmed S. Nafey, Hassan Fath. Steam, electricity and water costs evaluation of power desalination co-generation plants. Desalination and Water Treatment, 22, 56 –64, (2010)**.**
30. Aiman E. Al-Rawajfeh, Hassan E. S. Fath, **A. Mabrouk**, "Integrated Salts Precipitation a n d NanoFiltration as Pretreatment of Multistage Flash Desalination System". Heat Transfer Engineering, 33, 272-279, (2012).
31. A. S. Nafey, H. E. S. Fath, **A. A. Mabrouk**, "Thermoeconomic Design of Mechanical Vapor Compression Desalination process." Desalination Journal, 230, 1-15, 2008.
32. **A. A. Mabrouk**, A. S. Nafey, H. E. S. Fath, "Thermoeconomic Analysis of some existing Desalination Processes. Desalination, 205 (2007), 354 – 373**.**
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34. A. S. Nafey, H. E. S. Fath, **A. A. Mabrouk**, "Thermoeconomic investigation of Multi Effect Evaporation (MEE) and Hybrid Multi Effect Evaporation-Multi Stage Flash (MEE-MSF) Systems." Desalination 201 (2006) 241-254.
35. A. S. Nafey, H. E. S. Fath, **A. A. Mabrouk**, "Exergy and Thermoeconomic Evaluation of MSF Process Using a New Visual Package." Desalination, 201 (2006) 224-240.
36. A. S. Nafey, H. E. S. Fath, **A. A. Mabrouk**. "A new visual package for Design and simulation of desalination processes." Desalination 194 (2006), 281- 296.
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(VI) Conferences

1. One-Sun Lee, Mohamed Ali, Abdelnasser Mabrouk, and Ahmed Abdala. Molecular Dynamics Simulations of Self-Assembled Polyethylene-Hexagonal Boron Nitride Composite and Its Thermal Conductivity. 7th International Renewable and Sustainable Energy Conference (IRSEC). IEEE Conference, November 27-30, 2019, Agadir, Morocco.
2. Furqan Tahir**, Abdelnasser Mabrouk**, Muammer Koc. Energy and Exergy Analysis of thermal vapor compression (TVC) and Absorption Vapor Compression (AVC) for Multi Effect Desalination (MED) plants. , Global Worming Conference, April 2019, Doha, Qatar.
3. **Abdelnasser Mabrouk**. Advanced Thermal Desalination System. 4th thermal and Fluids Engineering, April 14-17, 2019, Las Vegas, Nevada, USA.
4. **Abdelnasser Mabrouk**, Ahmed Abotaleb, Abdulsattar Al-Rashid. Technoeconomic Analysis of Advanced Multi-Effect Distillation Technology for Seawater Desalination Plants: Novel Evaporator Design. Desalination for the Environment: Clean Water and Energy, 3–6 September 2018, Athens, Greece.
5. **Abdelnasser Mabrouk**, Ahmed Abotaleb. CFD study of the vapor route within MED evaporator for seawater desalination plants. Desalination for the Environment: Clean Water and Energy, 3–6 September 2018, Athens, Greece.
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8. Furqan Tahir, **Abdelnasser Mabrouk**, Muammer Koc, "CFD Analysis of Falling Film Wettability in MED Desalination plants". Qatar Foundation Annual Research Conference proceedings: Vol. 2018, Energy and Environment. DOI.10.5339/qfarc.2018.EEPD650
9. Furqan Tahir**, Abdelnasser Mabrouk**, Muammer Koc, "CFD Analysis of Spray Nozzle Arrangements for Multi Effect Desalination Evaporator", 3rd Thermal and Fluids Engineering Conference (TFEC), March 4–7, 2018, Fort Lauderdale, FL.
10. **Abdelnasser Mabrouk**, Ahmed Abotaleb, Furqan Tahir, Muammer Koc, *M Darwish, Reza Aini*, Abdulsattar Abdel Rashid. High Performance MED Desalination plants: Novel Design MED Evaporator. The International Desalination Association World Congress – São Paulo, Brazil 15-20 October (2017).
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13. **Abdelnasser Mabrouk**, Yasser Elhenawy, Gamal Mostafa, M. Shatat, Mohamed El- Ghandour**.** Experimental Evaluation of Novel Hybrid Multi Effect Distillation – Membrane Distillation (MED -MD) driven by Solar Energy. Conference of Desalination for the Environment: Clean Water and Energy, 22–26 May 2016, Rome, Italy. (Oral).
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15. **Abdelnasser Mabrouk**, Mohamed Darwish. Novel tri hybrid desalination plant. Annual Research Conference (ARC), March 22-23, 2016, Doha, Qatar. (Oral).
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17. **Abdelnasser Mabrouk**, A. Beitelmal, M. Darwish. High Performance Tri Hybrid (RO-FO- MSF) Desalination Process. 2nd International Conference on Desalination and Environment, Qatar, 23-26 Jan., 2016. (Oral).
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Citations

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