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# MALAK TALAL ALNORY, PHD

**Saudi Arabia**

**Female**

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## HIGHLIGHTS

- Saudi Arabia Delegation Lead Scientist at the governmental reviews of the Intergovernmental Panel on Climate Change (IPCC) Assessment Reports and the approval plenaries.
- Climate Change Negotiator on science matters, as a member of the Saudi government delegation, at multilateral platforms including United Nations Framework Convention on Climate Change (UNFCCC).
- Co-Chair of the IPCC Ad-hoc Group on AR7 Elections of the Bureau and all Task Forces.
- IPCC Workshop on Scenarios Use Co-Chair of Breakout Group on Socio-economic context of Mitigation/adaptation pathways and climate action.
- Established scientist with international collaborations and published research on modeling and optimization.

## LATEST PROFESSIONAL EXPERIENCE

**Saudi Ministry of Energy**

**Feb 21- present**

*Advisor, Sustainability and Climate Change Deputyship*

- Climate Change Negotiator, as a member of the Saudi government delegation, at multilateral platforms including United Nations Framework Convention on Climate Change (UNFCCC).
- Ministry of Energy Team Lead Scientist at the governmental reviews of the Intergovernmental Panel on Climate Change (IPCC) Assessment Reports and the governmental approval plenaries.
- Co-Chair of the IPCC Ad-hoc Group on AR7 Elections of the Bureau and all Task Forces.

**Massachusetts Institute of Technology, Cambridge, USA**

*Research Affiliate at the Mechanical Engineering Department*

*Sep 15- Aug 22*

- Collaborating as researcher with several MIT researchers. *(See research and publications)*

**Effat University**

**Sep 17- Jan 21**

*Associate Professor and University Provost*

- Achieved academic promotion to “Associate Professor” Rank in August 2020.

- Promoted to Provost in September 2017 to chair the Scientific Council and vice-chair the University and the Administration Councils to supervise all academic and research activities in the university.
- Supervised university wide curricula development and review including the first Energy Engineering Program for women in Saudi Arabia.
- Established and implemented holistic workload policies for teaching, research, and community services.
- Improved quality of teaching through the development and implementation of Teaching and Learning Model and the related faculty trainings.
- Improved quality of academic advising through faculty training, development of advising handbooks and automated processes.
- Administered faculty academic rank promotion and all the professional development activities for faculty.
- Established and supervised University Award Unit to support recognition of faculty, students, and staff through national and international awards.

#### ***Dean of Graduate Studies and Research***

**Nov 13- Aug 17**

- Promoted to Dean of Graduate Studies and Research position in November 2013.
- Established the research policies and the research infrastructure including establishing first four research centers in Effat University and organized the university four main conferences and the Student Research Forum from 2013-2017.
- Built the research culture at Effat University by establishing research groups for research active faculty including supporting and achieving the first three patents, first two sponsored research projects, and over 20 KACST grants applications.
- Chaired Graduate Studies Council, and Research Council, and Vice-Chair of Scientific Council, and a member of University Council, and Information Systems Department Council.

## **EDUCATION**

**Massachusetts Institute of Technology (MIT), Cambridge, USA**

**Sep 12- Aug 15**

***Postdoctoral Fellow at the Center for Clean Water and Clean Energy***

- Researched and modeled for optimization water desalination systems including energy and environmental impacts applied to Saudi Arabia.
- Research collaboration with MIT Engineering Systems Division and MIT Mechanical Engineering Department. (*See publications*)

**George Mason University, Fairfax, VA, USA**

***Ph.D. in Information Technology (May 09)***

- Dissertation topic: Object-oriented Framework for Decision-making to Unify Simulation and Optimization for the Supply Chain.

**King Abdulaziz University, Jeddah, Saudi Arabia**

***MS in Public Administration (May 00)***

- Thesis topic: The Factors that Contributed to the Discrepancy between Job Opportunities for Women in the Public Sector versus University Specializations- Applied Study on the City of Jeddah.

## TRAINING AND CERTIFICATIONS

**UNFCCC GHG Management Institute Certificate of Proficiency**  
*IPCC Guidelines for National Greenhouse Gas Inventories- Energy Sector (June 23)*

**IPCC Workshop**  
*Scenarios Use in IPCC Assessment Report AR6 (April 23)*

**World Intellectual Property Organization, Geneva**  
*General Distance Learning Course on Intellectual Property (June 20)*

**Massachusetts Institute of Technology, Cambridge, USA**  
*Leading Innovation Executive Program by Sloan School of Management (July 18)*

**HERS Summer Institute, Denver, CO, USA**  
*Intensive course in Higher Education Administration and Leadership (Jul 11)*

**Georgetown University, Washington, DC, USA**  
*Project Management Certification (Oct 09)*

## SCHOLARLY AND PRACTICAL EXPERIENCES

- Lead Author of policy brief for one of the G20 Engagement Groups Think Tank 20 (T20) with Task Force 2: Climate Change and Environment and a member in Science 20 (S20) Task Force Circular Economy.
- Initiated and supervised Effat first two installations of grid-connected 20.15 kWp and 17.4 kWp **Rooftop Solar Photovoltaic** (PV) systems in collaboration with industrial partners, 2018 and 2019.
- Trained 40+ faculty as **Trainer at National Center for Academic Accreditation and Assessment**, Planning Quality Research and Community Service Activities, 2018.
- **Served as jury member** at Jeddah Innovation Award v2017; Jeddah Teacher Award v2018, Zayed Sustainability Prize (Abu Dhabi) v2018, L'Oreal- UNESCO Women in Science in Middle East Fellowship v2016, v2017 and v2018.
- Serving as **Science and Technology Unit manager** to support faculty research grants to KACST since 2017.
- Organized and chaired Conference Sessions on **Women in Engineering** and **Women in Energy** in IEEE Saudi Smart Grid and Clean Energy Conference, Jeddah 2015, and 2016.
- **Supervised, Co-Supervised and Examined PhD Students** in University of Malaysia, and Monash University in Australia, 2014-2018.
- Appointed **Clean Energy Education and Empowerment (C3E) Ambassador** by Saudi Ministry of Energy, Industry, and Mineral Resources representing Saudi Arabia in Clean Energy Ministerial, 2016.
- **Speaker at many events and conferences** including Women in Data Science Conference by Stanford University 2019, International Computing Conference by Kuwait University 2018, Dow Panel on Inclusive Leadership: Women Innovation Network,

2017, Jeddah; QS in conversation, Italy, 2016; International Desalination Association World Congress, China, 2013, and San Diego, 2015; Saudi Smart Grid and Clean Energy Conference, Jeddah 2013, and 2015.

- Competed as a team member in **Harvard vs. MIT Consulting Case Competition**, Aug 12-22, 2014. Cambridge, USA.
- Prepared as a **consulting team member** “Water as a Sustainable Source” (one of the five studies) for Riyadh Economic Forum 2013, Dec 9-11, 2013. Riyadh, KSA.
- Participated in many **Energy related international programs** including Total Energy and Education Seminar, Jun 1-6, 2014. Paris, France and Areva Educational Program on Nuclear Power and Renewable Energy, Jun 16-21, 2013. Paris, France
- **Invited reviewer of many scientific journals** including: IEEE Transactions on Industrial Informatics, Journal of Simulation Modeling Practice and Theory, Decision Support Systems and Electronic Commerce Journal, Journal of Management Information Systems (JMIS), Science of the Total Environment Journal.

## SELECTED PUBLICATIONS

### G20 POLICY BRIEFS

- Al-Nory, Malak T and others., **A Cost Effective Low-carbon Framework to Manage Emissions from Water Desalination**, T20 Policy Briefs Portal, Think Tank 20 (T20): A G20 Engagement Group, 2020.

### JOURNAL PAPERS AND BOOK CHAPTERS

- Al-Nory, Malak T; **Optimal Decision Guidance for the Electricity Supply Chain Integration with Renewable Energy: Aligning smart cities research with Sustainable Development Goals**, IEEE Access, 2019.
- Shannak, Saed; Al-Nory, Malak T; **Decision-Making Method for Evaluating Solar Desalination Options: The Case of Saudi Arabia**, Journal of Science and Technology Policy Management 2019
- Balfaqih, Hasan; Nopiah, Zulkifli Mohd; Al-Nory, Malak T; Saibani, Nizaroyani; **Sustainable Framework for Water Desalination Supply Chain: Delphi-AHP Technique**, Advance Science Letters, 2017.
- Al-Nory, Malak T; Dydak, Victoria; **Integration of Renewable Energy Sources by Energy Storage, Desalination, and Pumped Hydro Systems: A Technical Report**, MIL Lincoln Lab, 2016.
- Balfaqih, Hasan; Nopiah, Zulkifli Mohd; Al-Nory, Malak T; Saibani, Nizaroyani; **Performance Measurement of Water Desalination Supply Chain Using Balanced Scorecard Model**, International Journal of Engineering and Technology, 2016
- Balfaqih, Hasan; Mohd. Nopiah, Zulkifli; Saibani, Nizaroyani; T. Al-Nory, Malak; **Review of Supply Chain Performance Measurement Systems: 1998-2015**, Computers in Industry, 2016, Elsevier
- Balfaqih, Hasan; Al-Nory, Malak T; Nopiah, Zulkifli Mohd; Saibani, Nizaroyani; **Environmental and economic performance assessment of desalination supply chain**, Desalination, 2016, Elsevier.
- Al-Nory, Malak; El-Beltagy, Mohamed; **An energy management approach for renewable energy integration with power generation and water desalination**, Renewable Energy, 2014, Elsevier

## CONFERENCE PAPERS

- Al-Nory, Malak; El-Beltagy, Mohammed; **Optimal Selection of Energy Storage Systems**, Saudi Smart Grid Conference, 2015, IEEE
- Mansouri, Noura; Al-Nory, Malak; Ghoniem, Ahmed; **Optimizing Solar Energy Options for Desalination: The Case Study of PV-RO and CSP-MED in Saudi Arabia**, International Desalination Association World Congress on Desalination and Water Reuse, 2015, IDA
- Al-Nory, Malak; Sharqawy, Mostafa; **Economic and Environmental Evaluation of Solar Desalination Networks: The Case of Saudi Arabia**, International Desalination Association World Congress on Desalination and Water Reuse, 2015, IDA
- Al-Nory, Malak T; Brodsky, Alexander; **Towards Optimal Decision Guidance for Smart Grids with Integrated Renewable Generation and Water Desalination**, 2014 IEEE 26th International Conference on Tools with Artificial Intelligence, IEEE
- Al-Nory, Malak T.; Brodsky, Alexander; **Mitigation of Interrupted Supply from Renewable Energy for the Smart Grid by Desalination**, 2013, IEEE
- Al-Nory, Malak T.; Graves, Stephen C.; **Water Desalination Supply Chain Modeling and Optimization: The Case of Saudi Arabia**, IDA World Congress 2013 TIANJIN, CHINA.
- Al-Nory, Malak T; Graves, Stephen C; **Water desalination supply chain modelling and optimization**, Data Engineering Workshops (ICDEW), 2013 IEEE 29th International Conference on, 2013, IEEE

## GRANTS

- **Effat University research grant**, Design and Implementation of a small-scale PV driven RO water desalination plant (2019)
- **MIT Lincoln Lab research grant**, Innovative Solutions for the Integration of Renewables with Desalination (2016)
- **MIT Mechanical Engineering Department**, Professor John Lienhard Desalination Group research grant (2015)
- **Ibn Khaldun Fellowship from King Fahd University of Petroleum and Minerals (KFUPM)**, Research at MIT Center for Clean Water and Clean Energy, (2012 to 2014)
- **Information and Software Engineering Department, George Mason University**, Travel grant for the Informs Annual Meeting in Seattle, WA, (2007).
- **Full scholarship to study the PhD degree in the USA**, Effat University, Saudi Arabia (2003).
- **Sheikh Abu-Daoud Financial Award to the Exceptional Students in Economics and Administration Faculty**, King Abdulaziz University, Saudi Arabia (2000).

## AWARDS AND AFFILIATIONS

- **Mission Innovation Champion 2020** representing Saudi Arabia in MI program, a global initiative working to accelerate clean energy innovation.
- **Sayidaty Award for Excellence and Innovation in Education** (Dec 2017).
- **Clean Energy Education and Empowerment (C3E) Ambassador**, nominated by Saudi Ministry of Energy, Industry, and Mineral Resources representing Saudi Arabia in Clean Energy Ministerial, (Sep 15).
- **Best Paper Award on Decision Technologies and Service Sciences Track**: The 41<sup>st</sup> Hawaii International Conference on System Sciences, Big Island, HI (Jan 08).

- **Underrepresented Minorities and Women Award:** INFORMS Simulation Society, Washington, DC (Dec 07).
- **The Most Outstanding Graduate Lecturer Award:** Information and Software Engineering Department, George Mason University, Fairfax, VA (May 07).
- **Sheikh Abu-Daoud Financial Award to the Exceptional Students in Economics and Administration Faculty:** King Abdulaziz University, Jeddah, Saudi Arabia (2000).
- **The Award for Educational Excellence, and for the Distinguished Accomplishment of Graduation Requirements:** King Abdulaziz University, Jeddah, Saudi Arabia (1995).

## SELECTED INVITED REVIEWS

- Nature Communications Journal (Scientific)
- Saudi Royal Court Decision Support Center (Government)
- IEEE Transactions on Industrial Informatics (Scientific)
- Journal of Simulation Modeling Practice and Theory, International Journal of the Federation of European Simulation Societies – EUROSIM (Scientific)
- Decision Support Systems and Electronic Commerce Journal (Scientific)
- Journal of Management Information Systems (JMIS) (Scientific)
- Other reviews: (Academic Conferences)
  - Program committee member and reviewer for The 9<sup>th</sup> Learning & Technology Conference at Effat University, Jeddah
  - Program committee and reviewer at the 28<sup>th</sup> and 29<sup>th</sup> IEEE International Conference on Data Engineering Workshop on Data-driven Decision Guidance and Support Systems
  - Program committee and reviewer at the IEEE International Conference on Tools with Artificial Intelligence (ICTAI), 2012- 2015.

## SELECTED WORKSHOPS AND PRESENTATIONS

- KSA capabilities in clean energy innovation (organized by KACST), **Invited speaker** at Clean Energy Ministerial and Mission Innovation Ministerial, Riyadh, September 16, 2020
- The journey of clean energy innovators: transforming innovative ideas into breakthrough solutions (organized by MI), **Invited speaker** at Clean Energy Ministerial and Mission Innovation Ministerial, Riyadh, September 17, 2020
- Women in Clean Energy: Harnessing All Talent (organized by C3E), **Organizer and invited speaker** at Clean Energy Ministerial and Mission Innovation Ministerial, Riyadh, September 17, 2020
- Accelerating clean energy technology innovation for a net-zero emission future (organized by IEA), **Invited speaker** at Clean Energy Ministerial and Mission Innovation Ministerial, Riyadh, September 18, 2020
- Women Role in Green Growth: **Invited speaker at Green Growth Pathways for Saudi Arabia** workshop by King Abdullah Petroleum Studies and Research Center (KAPSARC), Riyadh, April 30, 2019.
- Saving Water by Data: **Invited speaker at Women in Data Science Conference** by Stanford University, Jeddah, April 15, 2019.

- The Role of Scientific Research and Innovation in Arab Countries Development: **Invited panelist at Fikr 16** by Arab Thoughts Foundation, Dubai, April 12, 2018.
- Clean Water and Clean Energy Decision Optimization: **Keynote speaker at The 2nd International Conference on Computing Sciences and Engineering** by Kuwait University, March 11, 2018
- Leading Innovation: **One-day Executive Education course** by MIT Sloan School of Management, Cambridge, USA, July 15, 2018.
- The Relation between Research & Innovation and Industry: **Invited panelist at The 3rd MENA Higher Education Leadership Forum**, Dubai, November 15, 2017
- **OIC Experts Group Workshop** on Confronting Threats and Violent Extremism on the Cyberspace by Organization of Islamic Cooperation, Jeddah, May 5, 2015.
- **Multiple workshops and training programs** by the National Commission for Assessment and Academic Accreditation (NCAAA), Saudi Arabia, 2010-2015.
- **Total Energy and Education Seminar**, Paris June 1-6, 2014
- **Areva Educational Program on Nuclear Power and Renewable Energy**, France June 16-21, 2013.
- Technology and Holistic Self-Development workshop: **Invited speaker** at Effat University, Jeddah, Saudi Arabia, 2011.
- Attended and delivered a speech at the **Women Education Worldwide: Teaching Globally Conference**, Mount Holyoke, MA, USA, 2011

## **CONTACT INFORMATION:**

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