

Curriculum Vitae

Dong Suk (“Shane”) Han, Ph.D.

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EDUCATION

- Ph.D. Zachry Department of Civil and Environmental Engineering, Texas A&M University, College Station, TX, USA, 2009
- M.S. Department of Environmental Science & Engineering, Keimyung University, Daegu, South Korea, 1999
- B.A. Department of Environmental Science & Engineering, Keimyung University, Daegu, South Korea, 1996

WORK EXPERIENCES

- 2020-present Joint faculty appointment, Department of Chemical Engineering, Qatar University
- 2019 Dec Founding member, Water Technology Unit (WTU), Center for Advanced Materials, Qatar University
- 2018-present Research Associate Professor, Center for Advanced Materials, Qatar University
- 2015-2018 Associate Research Scientist, Chemical Engineering, Texas A&M University at Qatar, Qatar
- 2012-2015 Assistant Research Scientist, Chemical Engineering, Texas A&M University at Qatar, Qatar
- 2009-2012 Post-doc Research Associate, Chemical Engineering, Texas A&M University at Qatar, Qatar
- 2005-2009 Graduate Research Assistant, Environmental Engineering, Texas A&M University, College Station, TX, USA
- 1999-2001 Korea Army Service, Korea
- 1997-1999 Graduate Research Assistant, Environmental Engineering, Keimyung University, Korea

RESEARCH AREAS

Adsorption/Membrane Separation Technology, Desalination, Environmental Electrochemistry (CO₂ conversion, H₂ production), (Computational) Nanomaterials for Energy and Water Environment, Advanced Oxidation/Reduction Process for Water and Wastewater Treatment.

SOCIETY MEMBERSHIPS

Academic committee member, International Union of Advanced Materials (IUAM), 2012-present
Association of Environmental Engineering and Science Professors (AEESP) (2007~present)
American Water Works Association (AWWA) (2005-2008)
American Chemical Society (ACS) (received recognition of 10 years contribution) (2006~present)
Korea-America Scientists and Engineers Association (KSEA) (2006-present)

PROFESSIONAL ACADEMIC AND SCHOLAR ACTIVITIES

1. Editorial board member, Current Materials Science, Bentham Science, 2020.
2. Editorial board member, Current Graphene Science, Bentham Science, 2020.
3. Guest Editor, Special Issue for “Resource Recovery” in Desalination (IF 7.098) journal, Elsevier, 2020.
4. Appointment of QU Internal Grant Progress Evaluation Committee in the area of Energy and Environment, Office of VP for Research and Graduate Studies, Qatar University. Dec. 2019-Present,
5. Appointment of Review Editor, “Frontiers in Chemistry” (IF 4.155), ISSN: 2296-2646, under section of Electrochemistry, Frontier Media SA Publisher, 2019-Present.

AWARDS & HONOR

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| 2018 | Top 7, Best Representative of Image Outcome (BRIO)-2, Qatar National Research Fund (QNRF), Qatar |
| 2016 | Best Poster Presentation Award, 9 th International Desalination Workshop (IDW), Masdar Institute, Abu-Dhabi, UAE |
| 2016 | Top 10, Best Representative of Image Outcome (BRIO), Qatar National Research Fund (QNRF), Qatar |
| 2015 | Recognition of 10-year service at American Chemical Society (ACS), USA |
| 2013 | Listed in <i>Marquis Who's Who in the World</i> , 30 th Pearl Anniversary Edition |
| 2012 | Research Fellow Excellence Award, Texas A&M University at Qatar, Qatar |
| 2012 | Research Team Excellence Award, Texas A&M University at Qatar, Qatar |
| 2009 | C. Ellen Gonter Environmental Chemistry Best Paper Award, Division of Environmental Chemistry, American Chemical Society (ACS), USA |
| 2006 | Graduate Student Research Grant, TWRI through National Institute for Water Research, US Geological Survey (USGS), USA |

FELLOWSHIPS & SCHOLARSHIPS

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| 2008-2009 | Conference Travel Award Scholarship
Zachry Department of Civil Engineering, Texas A&M University, TX, USA |
| 2008-2009 | Joseph A ORP Fellowship for Excellent Graduate Student in Research & Academic Record
Zachry Department of Civil Engineering, Texas A&M University, TX, USA |
| 2007-2008 | Mills Scholarship for Excellent Graduate Student in Research |

2005-2009	Texas Water Resources Institute (TWRI), TX, USA Graduate Student Research Assistantship
2004-2006	Texas A&M Engineering Experiment Station, Texas A&M University, TX, USA Foreign Ph.D. Graduate Student Scholarship
2004-2005	National Research Foundation of Korea, South Korea Graduate Student Scholarship
1997-1999	Department of Civil Engineering, Texas A&M University, TX, USA Graduate Student Research Assistantship
1992	Department of Environmental Science, Keimyung University, Daegu, Korea Excellency Scholarship for Top Honor in the Admission Exam of University Keimyung University, South Korea

STUDENTS & RESEACHERS ADVISEE AWARDS & ACHIEVEMENTS

1. Tasneem Sayedahmed, awarded 1st cycle Researcher Exchange Mobility Program (REMP), supported by Qatar National Research Fund (QNRF) for training at University of Sydney, Australia, during 01/June – 30/Oct, 2020. Supervisors: Dong Suk Han (Qatar) and Yuan Chen (Australia).
2. Mona Gulied, awarded 1st cycle Researcher Exchange Mobility Program (REMP), for training at University of Technology Sydney, Australia, during 01/June – 31/Nov, 2020. Supervisors: Dong Suk Han (Qatar) and Hokyong Shon (Australia).
3. Sun Hee Yoon, awarded Research Excellence Travel Grant, “Effects of ions on electrocatalytic CO₂ conversion at porous dendrite bismuth: from experiment to density functional theory”, supported by Texas A&M University at Qatar, 4th Quarter Cycle in 2019, Co-authors
4. Van Huy Tran, Awarded Best Oral Presentation Award (K-Water), “Osmotic membrane bioreactor using a novel outer selective thin-film composite hollow fiber membrane”, 12th International Desalination Workshop (IDW), Maison Glad Jeju Hotel, Jeju Island, Korea, Aug. 27-30, 2019. Co-Authors S. Lim, N. Pathak, N. Akther, S. Phuntsho, H. Park, D. S. Han, H. Shon.
5. Sun Hee Yoon, Awarded Best Oral Presentation Award, “Mechanistic Study for unravelling the photoelectrochemical CO₂ reduction to formic acid at a mixed ternary and binary phases”, 8th Global Conference on Global Warming (GCGW), Doha, Qatar, April 22-25, 2019. Co-Authors U. Kang, N. Elbashir, H. Park, D. S. Han.
6. Van Huy Tran, Awarded Best Poster Presentation Award, Research Showcase, School of Civil and Environmental Engineering, University of Technology Sydney, Australia, 2018. Co-Authors D.S. Han, H. K. Shon.
7. Sun Hee Yoon, Awarded 2nd Place Poster Presentation Award, 6th TAMUQ Annual Research and Industry Partnership Showcase, Texas A&M University at Qatar, Qatar, 2017. Co-authors U. Kang, H.Y. Park, A. Abdel-Wahab, D. S. Han.

8. Mohammed Rafique, 3rd Place Poster Presentation Award, 2016 American Institute of Chemical Engineers (AIChE) Annual Conference, USA. Co-authors H. Park, A. Abdel-Wahab, D. S. Han.
9. Sun Hee Yoon, Awarded Research Excellence Travel Grant Award, Texas A&M University at Qatar, Qatar, 2016. Co-authors A. Abdel-Wahab, D. S. Han
10. Rand ElShorafa, Best Poster Presentation Award, “Constructing Solar Energy Storage Material Using TiO₂-WO₃ Nanocomposite and Its application to Water Treatment”, 3rd Materials Science & Technology Symposium, Qatar University, Qatar, 2016. Co-authors A. Abdel-Wahab, H. Park, D.S. Han.

PROJECT GRANTS

1. “Energy-saving Membrane-based Desalination Hybrid Process for Zero Liquid Discharge (ZLD) in QAFCO Plant”, funded by Qatar Fertilizer Company (QAFCO) for the first phase of QAFCO Research and Development Grant, QU External Grant, as role of **Lead PI (Dong Suk Han)**, with Dr. Hazim Qiblawey (Co-PI, QU) and Dr. Bassim H. Hameed (Co-PI, QU) for the first-phase during January 2021 – June 2021 (pending).
2. “Off-grid and Stand-alone Photo-electrochemical System for Green Energy Production Using Pt free Ir-Ni Alloy Catalyst”, funded by Qatar National Research Fund (QNRF) for UREP 27 Cycle UREP 27-041-2-015, as role of **Lead PI (Dong Suk Han)**, with Dr. Sifani Zavahir (Research Mentor, Qatar University), for 2021, \$20,000.
3. “Treatment of Carbon Dioxide and Reverse Osmosis (RO) Brine in Seawater Desalination Plant Using Solar-Osmotic-Engineered Electrochemical Process (SOE-EP)”, funded by Qatar University for International Research Collaboration Co-Funds (IRCC) (IRCC-2020-007), as role of **Lead PI (Dong Suk Han)**, with Dr. Hyunwoong Park (Co-LPI, Kyungpook National University), Majeda Khraisheh (PI, Qatar University), Dr. Abdul Shakoor (PI, Qatar University), and Dr. Ahmad Zubair (PI, Qatar University), for 2020-2021, \$112,000.
4. “Design and Application of Stand-alone Nanostructured Photoelectrocatalyst for Water Treatment using Co-catalyst Charging Effect and Non-Ferrous Fenton Reaction”, funded by Qatar University for Student Grant-2020 (QUST-1-CAM-2020-1) as role of **Lead PI (Dong Suk Han)** for 12 Jan, 2020 ~ 30 June, 2020, 20,000 QR.
5. “Lithium Recovery from Reverse Osmosis Brine Using Solar-Powered Membrane Distillation-Electrochemical Capturing Hybrid System”, funded by Qatar National Research Fund (QNRF) for NPRP 12S Cycle (#NPRP12S-0227-190166) as role of **Lead PI (Dong Suk Han)**, together with Dr. Leena Al-Sulaiti (Qatar University), Dr. Zubair Ahmad (Qatar University), Prof. Hokyong Shon (University of Technology Sydney), and Prof. Yuan Chen (University of Sydney) as role of PI, Prof. Enrico Drioli (Institute of Membrane Technology) as role of Consultant, 12 Jan, 2020 ~ 11 Jan 2013.

6. “Developing an innovative omni-hydrophobic membrane for membrane distillation to treat reverse osmosis (RO) brine”, funded by Qatar University for Student Grant-2019 (QUST-2-CAM-2019-5) as role of **Lead PI (Dong Suk Han)** for Aug-25, 2019 ~ Nov-28, 2019, 20,000 QR.
7. “Tailored Thin-Film Composite Membrane for Improvement of the Osmotically Engineered Desalination Process”, funded by Qatar University for Student Grant-2019 (QUST-1-CAM-2019-3) as role of **Lead PI (Dong Suk Han)** for Jan-31, 2019 ~ June 02, 2019, 20,000 QR.
8. “Solar-Powered Desalination Process Accompanying CO₂ Conversion and Water Purification”, funded by NPRP 10th Cycle (#10-1210-160019), QNRF (Qatar National Research Fund), with co-funding from Texas A&M Experiment Engineering Station (TEES) as role of **Lead PI (Dong Suk Han until 2019 Jan)** and PI until the end, delivered to Dr. Nimir Elbashir as new LPI role, TAMUQ), together with Dr. Choongho Yu (Texas A&M University, USA) and Dr. Hyunwoong Park (Kyungpook National University, Korea) as Co-PIs, and Mr. Mansoor Al-Shamri (Qatar Shell GTL Co. Ltd) and Prof. Hokyong Shon (University of Technology Sydney) as consulting members, for Jan. 2018-Dec. 2021, \$699,713.
9. “Air Pollution Cleanup-based Water-Energy-Food Nexus Technology”, funded by NPRP 9th Cycle (#9-052-2-020), QNRF (Qatar National Research Fund) as role of **Lead PI (Dong Suk Han until 2019)** and PI until the end, delivered to Dr. Konstantinos Kakosimos as new LPI role, TAMUQ), together with Dr. Gordon McKay (Co-PI, HBKU, Qatar), Dr. Arum Han (Co-PI, TAMU, USA), Dr. Hokyong Shon (Co-PI, UTS, Australia), Dr. Hyunwoong Park (Co-PI, KNU, Korea), and Mr. Mansoor (Qatar Shell GTL, Qatar) for Sept. 2016 – Sept. 2020, \$693,707.
10. “International-Joint Study between Korea and Qatar for Development of Water-Energy Nexus Technology”, International Cooperation Program in Science and Technology, National Research Foundation of Korea, as role of **Co-LPI (Dong Suk Han)**, with Hyunwoong Park (LPI, KNU, Korea), during Dec. 01, 2015 – Nov. 30, 2016. 50, 000K KRW.
11. “Development of Solar-Powered Photo-Electrochemical System for Conversion of Carbon Dioxide into Useful Fuels”, funded by NPRP 7th Cycle (#7-865-2-320), QNRF (Qatar National Research Fund), as role of **Lead PI (Dong Suk Han)**, with Dr. Ahmed Abdel-Wahab (PI, TAMUQ), Dr. Michael R. Hoffmann (PI, CALTECH, USA), Dr. Wonyong Choi (PI, POSTECH, Korea), Dr. Hyunwoong Park (PI, KNU, Korea), during Feb. 2015 – May. 2018, \$899,710.59.
12. “Self-Sustainable and Highly Efficient Desalination System based on Microbe-Nanostructure Hybrids”, funded by NPRP 7th Cycle (#7-1634-2-604), QNRF (Qatar National Research Fund), as role of **Co-Lead Principal Investigator (Co-LPI)**, together with Dr. Arum Han (Lead-PI, TAMU, USA), Dr. Paul de Figueiredo (PI, TAMU, USA), and Dr. Choongho Yu (PI, TAMU, USA), during Feb. 2015-June. 2018, \$899.947.07.
13. “Novel Adsorbent-Reactants for Treatment of Ash and Scrubber Pond Effluents”, funded by U.S. Department of Energy (US DOE), National Energy Technology Laboratory (NETL), as role

of **Graduate Research Assistant** (TAMU, USA), together with Dr. Bill Batchelor (LPI, TAMU, USA), during Feb. 2006-Dec. 2009, \$300,000.

14. “Arsenic Removal by Novel Nanoporous Adsorbents-Kinetics, Equilibrium and Regenerability”, funded by U.S. Geological Survey (USGS), National Institute for Water Research, through the Texas Water Resources Institute, as role of **Principal Investigator**, together with academic supervisor (Dr. Bill Batchelor), during March 2006-Aug. 2007, \$5000.

TEACHING EXPERIENCE

1. Instructor, “Desalination” course (Men, 11 enrolled), Spring Semester, Spring semester, 2021, Department of Chemical Engineering, College of Engineering, Qatar University.

2. Instructor, “Desalination” course for senior students (Women, 34 enrolled), Fall semester, 2020, Department of Chemical Engineering, College of Engineering, Qatar University.

2. Instructor, 2020 QU Summer Internship Program with a topic of “Resource Recovery Technologies in Seawater Reverse Osmosis (SWRO) Process”, Center for Advanced Materials (CAM), Office of VP for Graduate Studies and Research, June 2020.

ENGINEERING EXPERIENCE

2002-2003 **Engineer** **Wooshin Construction Engineering Co. Ltd, South Korea**
Performed environmental assessment on the construction for Kyungjoo-Country Resort and pilot-scale RO Membrane/Filtration setup.

1999-2001 **Military Service** **South Korea Army, South Korea**
Served at Department of Chemistry by take a training on detecting the elements of lethal chemical and nuclear weapons, and managed wastewater treatment

1999.2-1999.6 **Internship Nakdong-River Environmental Research Center, South Korea**
O₃/Fenton/Electrolysis-based bench-scale process setup to LG construction company

1999.5 **GC Analysis Counselor, Sung-Seo Environmental Management Industry, South Korea**
Counseling analyzers who detected chlorinated chemicals (e.g., PCB and PCE) by GC with ECD

STUDENTS & RESEARCHERS (CO-) SUPERVISING EXPERIENCES

Post-doc Researcher

1. Dr. Nawshad Akther (UTS, Australia), “Membrane distillation system for lithium recovery”, 2020-present.

2. Dr. Fathima Sifani Zavahir (QU, Qatar), “Electrochemical process for energy and water

environment application”, 2019-present

3. Dr. Sun Hee Yoon (TAMUQ, Qatar), “Density Functional Theory (DFT) study on CO₂ conversion using copper-iron oxide catalyst” & “DFT study on 3D N/Fe-carbon nanotube (CNT) electrode in the bioelectrochemical system”, 2016-2021.

Research Assistant

1. Reem Samir Azam (QU, Qatar), “Development of membrane materials and 3D printing materials for water treatment and desalination application”, Feb 2021-present.
2. Mona Gulied (QU, Qatar), “Fertilizer-driven forward osmosis system for water-energy-food nexus technology”, Oct. 2019-present.
3. Tasneem Mohamed Sayedahmed (QU, Qatar), “Photoelectrochemical system for water-energy-food nexus technology”, April 2019-present

Doctorate Students

1. Yanxi Yu (US, Australia), “Lithium recovery using electrochemical capturing system”, 2020-present. (NPRP-supported student)
2. Seung Yo Choi (KNU, Korea), “Solar renewable energy production using PEC cell”, 2016-2021. (NPRP-supported student)
3. Sunghoon Kim (KNU, Korea), “Simultaneous energy production and water treatment using solar desalination (SUNDESAL) photoelectrochemical (PEC) cell”, 2018-2020. (NPRP-supported student)
4. Unseock Kang (KNU, Korea), “Conversion of CO₂ into chemical fuels using photoelectrochemical process”, 2015-2018. (NPRP-supported student)
5. Yuhang Duan (TAMU, TX, USA), “Synthesis, characterization and application of Pyrite”, 2011-2016. (NPRP-supported student)
6. Van Huy Tran (UTS, Sydney, Australia), “Forward osmosis (FO) for water-energy-food nexus technology”, 2016-2020. (NPRP-supported student)

Master Students

1. Abdulaziz Al-Mutory (QU, Qatar), “Optimization of reverse osmosis and forward osmosis process using machine learning”. April 2019-present. (NPRP-supported student)
2. Ahmed Badreldin (TAMUQ, Qatar), “Application of nanostructured black TiO₂ to hydrogen production and water treatment”, 2018-2019.
3. Maria Orillano (TAMUQ, Qatar), “Removal of mercury by reactive adsorption onto iron sulfide nanoparticle”, 2012-2015.
4. Kawsher Solayman (TAMUQ, Qatar), “Pyrite-supported UF/crossflow system for Hg(II) removal”, 2013-2015. (NPRP supported student)
5. Mary Katebah (TAMUQ, Qatar), “Photocatalytic reduction of Hg(II) using titania nanoparticles”, 2014-2015.
6. Rand Elshorafa (TAMUQ, Qatar), “Constructing solar energy storage material using TiO₂-WO₃ nanocomposite and its application to chromium reduction in water”, 2014-2016.

Undergraduate Research Assistants

1. Khulood Logade (Chemical Engineering, QU), “Forward osmosis membrane fabrication and application”, Nov. 2019-present.
2. Areeba Hameed (Chemical Engineering, QU), “Non-iron-based Fenton reaction for water treatment using titania nanotube-hydrogen peroxide system”, Nov. 2019-present.
3. Midhat Javaid (TAMUQ campus), “Integrated oil/water separation process and desalination process for treatment of produced water using 3D-printed TiO₂ membrane and capacitive deionization (CDI) technology”, 2017-2018.
4. Mohamed Anas (TAMUQ campus), “Kinetic study on MO degradation using titania nanotube and Pd or N-doped titania”, 2013-2015
5. Ali Mansour (TAMUQ campus), “Synthesis of p-type pyrite electrode and environmental application”, 2013-2015
6. Mohammed Rafique (TAMUQ campus), “Non-ferrous Fenton oxidation using metal oxide semiconductors”, 2013-2015

PROFESSIONAL ACTIVITIES OR SERVICES

1. Organizer, Session of (Photo)Electrochemical and Electrocatalysis for Water-Energy Nexus, PRiME 2020 Conference, Oct 4-9, 2020.
2. Organizer, Technical workshop on “Sustainable Water Environment and Energy Technology”, Center for Advanced Materials (CAM), Qatar University, Jan 13, 2020.
3. Session Chair, Session of “RO based Desalination”, 12th International Desalination Workshop (IDW), Maison Glad Jeju Hotel, Jeju island, Korea, Aug 27-Aug 30, 2019.
4. Organizer committee member, “1st Workshop for Membrane-based Desalination Process” Center for Advanced Materials (CAM), Qatar University, 2019.
5. Judge appointment, Poster Presentation Competition in the session of Energy, Environment & Resource Sustainability (for Faculty and Postdoc Track), Qatar University Annual Research Forum and Exhibition (QUARFE)-2019, Research complex, Qatar University, April 15, 2019.
6. Session Chair, Session of “Management and Utilization of RO Brine”, 11th International Desalination Workshop (IDW) & Membranes and Membrane Processes for Water Applications (MEMSIS), Nanyang Executive Centre, Nanyang Technological University (NTU), Singapore, July 12-13, 2018.
7. Judge appointment, “Certificate of Merit Award” for evaluation for the best oral presentation of graduate students, Division of Environmental Chemistry, 254th American Chemical Society (ACS), Aug 20-24, 2017, Washington DC, USA.
8. Scientific committee member, “Water Sustainability”, 3rd International Water Industry Conference, September 19-22, 2017, Gyeongju, Korea
9. Session Chair, 3rd International Conference on Capacitive Deionization, Electrosorption & Electrodialysis (CDI&E), Seoul, Korea, July 3-6, 2017

10. Mentor appointment, Area of Energy & Water Environment, in National Scientific Research Competition (NSRC) for junior student (Grade 7-12 students), Ministry of Education and Higher Education, Qatar, 2017-2018.
11. Co-Chair, Symposium on Redox Technologies for Low Impact Environmental Remediation (In Honor of Dr. Bill Batchelor Retirement), Institute for Environmental Technology and Industry, Pusan National University, Pusan, Korea, Oct. 27, 2016.
12. Section Chair, “Brine Management” section, 2nd International Conference on Desalination and Environment, Jan 23- Jan 26, Doha, Qatar, 2016
13. Lecturer, Water Short Course, Food Protein R&D Center, Texas Engineering Experiment Station (TEES), College Station, TX, 2014-2017
14. Judge appointment, Poster Presentation Competition (in session of “Energy and Environment”), 4th Annual Research Conference (ARC)-Qatar Foundation (QF), Qatar, Nov. 18-19, 2014.
15. Judge appointment, Poster Presentation Competition (in session of “Energy and Environment”), 3th Annual Research Conference-Qatar Foundation (ARC-QF), Qatar, Nov. 23-15, 2013.
16. Coordinated “Green Forum” between Korea and Qatar with The Embassy of the Republic of Korea for organizing an environmental technology cooperation, the Grand Hyatt Hotel, Qatar, Oct 30, 2013
17. Interview as Consulting, “Job-fair for Middle-East Countries”, Ministry of Employment and Labor, Korea, May, 2012

ADDITIONAL EDUCATION LEARNED (CERTIFIED)

1. “Capacitive Deionization, Electrosorption & Electrodialysis”, The Korea Science & Technology Center, Seoul. Korea, organized by CDI&E 2017, July 3, 2017.
2. “Membrane-based Desalination Processes (Desal-Pro)”, Masdar Institute (UAE), organized by Gwangju Institute of Science and Technology, Korea, The University of Hong Kong, Hong Kong, University of Technology Sydney, Australia (UTS), Nov. 12-13, 2016.
3. “Molecular Simulation Methods”, held by Advanced Scientific Computing Center, Texas A&M University at Qatar, March 11-19, 2015
4. “Membrane Desalination & Water Reuse” training course, held by Qatar Environment & Energy Research Institute (QEERI) at College of North Atlantic, May 26-28, 2013
5. “Thermal Desalination” technical workshop, held by the Global Water Sustainability Center (GWSC) at Qatar Science & Technology Park (QSTP), March 20th, 2012

OUTREACH ACTIVITY

1. Water Well Construction for drinking water supply, at Democratic Republic of the Congo, Africa, with A Cup of Water Co., July. 2014.

INVITED TALKS AT SYMPOSIUM OR SEMINAR

1. Dong Suk Han (Keynote), “The Central Role of Water for Energy, Resource, Food, and Environmental Security”, Chemicals & Materials for Emergent Technologies (CheMET) (e-

- conference), 15-17 November 2020, Qatar University.
2. Dong Suk Han (Keynote), “Integrated Green Engineering Process for Simultaneous Hydrogen Production and Fertigation”, PRiME 2020, Electrochemical Society (ECS), On-line meeting, 4-9 October 2020, USA.
 3. Dong Suk Han (Keynote), “Integrated Green Technology towards Water-Energy-Food Nexus Technology”, 6th International Water Industry Conference (IWIC) 2020 (Hybrid E-Conference), 22-23 September 2020, EXCO, Daegu, Korea.
 4. Dong Suk Han, “Conceptualized energy-saving process for seawater desalination and water treatment”, Technical Workshop on Sustainable Water Environment and Energy Technology, Center for Advanced Materials (CAM), Qatar University, January 13, 2020.
 5. Dong Suk Han, “Solar Desalination System Enabling Renewable Energy Production and Water Treatment”, 2019 CAM Seminar Series, Qatar University, 27-November, 2019.
 6. Dong Suk Han (*Keynote*), “Water and Energy Recovery in the Qatar Water Environment”, 5th International Water Industry Conference-Theme: Technology Innovation for Sustainable Water, EXCO, Daegu, Korea, September 3-6, 2019.
 7. Dong Suk Han (*Keynote*), “Water Technology Unit for Water Security in Qatar”, 12th International Desalination Workshop (IDW), Maison Glad Jeju Hotel, Jeju Island, Korea, Aug. 28- Aug. 30, 2019.
 8. Dong Suk Han, “Durable Catalytic Activity of Cu-Fe Mixed Materials Enabling Sustainable CO₂ Conversion”, in the theme of Sustainable Engineered Materials-The way forward, 10th Annual Materials Science and Engineering Symposium, Hilton Doha Hotel, Doha, Qatar, February 26, 2019.
 9. Dong Suk Han, “Production of Chemical and Electrical Energy Using Seawater and Wastewater Treatment”, Korea Institute of Civil Engineering and Building Technology (KICT), June 26, 2018.
 10. Dong Suk Han, “Water-Energy-Food Challenges and Strategies at Qatar”, School of Environment and Life Chemistry, Colleges of Agricultures and Life Sciences, Kyungpook National University (KNU), June 22, 2018.
 11. Dong Suk Han, “Renewable Energy Production through Seawater and Wastewater Treatment”, Department of Environmental Engineering, Pusan National University (PNU), Korea, June 07, 2018.
 12. Dong Suk Han, “Water-Energy Nexus Technology Targeting Water Reuse, Food Security, and Renewable Energy Production”, The 4th International Symposium Graduate School of Water Resources: Innovative Water Resources Development”, Research Complex-1, Sungkyunkwan University, Suwon, Korea, Nov. 20-21, 2017
 13. Dong Suk Han, “Example of Diverse Project Contracts between Qatar and Korea Industry Companies”, Hyundai Ro-Tech Co., Ltd, Gwangju, Korea, July-14, 2017.
 14. Dong Suk Han, “Bioelectrochemical System for Water Reuse and Energy Production”, International Environmental Research Institute (IERI), Gwangju Institute of Science and Technology (GIST), Korea, July-14, 2017.
 15. Dong Suk Han, “Bioelectrochemical System for Water Reuse and Energy Production”,

- Department of Energy and Materials Engineering, Dongkuk University, July-06, 2017.
16. Dong Suk Han, “Security and Sustainability of Water and Energy at MENA”, Class Lecture for Department of Civil Engineering, Dong-A University, Pusan, Korea, Oct-28, 2016.
 17. Dong Suk Han, “Chemical Redox-based Water Treatment Using Nanostructured TiO₂: Light harvesting, Filtration, Fenton-mimic Oxidation”, Symposium on Redox Technologies for Low Impact Environmental Remediation (“*In honor of Dr. Bill Batchelor Retirement*”), Institute for Environmental Technology and Industry, Pusan National University, Pusan, Korea, Oct-27, 2016.
 18. Dong Suk Han, “Bioelectrochemical System Toward Water-Energy Nexus Technology”, Sunlight-Water Nexus Workshop, Advanced Institute of Water Industry, Kyungpook National University, Daegu, Korea, Aug-23, 2016.
 19. Dong Suk Han, “Photoconversion of Carbon Dioxide Using Earth-Abundant Metal Oxide-based Photoelectrochemical System”, Materials Science for Energy Research Outcome Seminar, Qatar National Research Fund (QNRF), QNRF Event-Hall, Tornado Tower, Doha, Qatar, May-22, 2016.
 20. Dong Suk Han (*Invited Lecturer*), “Forward Osmosis Toward Water-Energy-Food Nexus Technology”, in the 26th Annual Practical Short Course on Membrane & Other Separations Technologies: Applications in food, dairy, beverage, and bioprocessing, Food Protein Research & Development Center (FPRDC), Texas A&M Engineering Experiment Station (TEES), College Station, TX, May 15- May 19, 2016.
 21. Dong Suk Han, EU-GCC Workshop: Opportunities and Challenges in Sustainable Energy Research, Qatar National Research Fund (QNRF), Tornado Tower, Doha, Qatar, Feb. 29-March 01, 2016
 22. Dong Suk Han, “Sustainable Utilization of Environment and Energy: Insights & Case studies”, Department of Energy Engineering, Kyungpook National University, Daegu, Korea, Dec-22, 2015.
 23. Dong Suk Han, “Sustainable Water Treatment and Desalination Technology: Case studies”, Environmental Engineering Research Seminar Series, School of Civil and Environmental Engineering, University of Technology, Sydney (UTS), Australia, Dec-4, 2015.
 24. Dong Suk Han, “The Nexus Technology for Water Supply, Reuse, and Security at MENA”, 3rd International Water Technology Symposium for Nakdong River Waterweek, Sangju City, Korea, Oct. 10-11, 2014.
 25. Dong Suk Han (*Invited Lecturer*), “Pretreatment of Bio-accumulative Mercury in Water Using Reactive Nanoparticle-Supported Ultrafiltration and Photocatalytic Reduction Technology”, In 24th Annual Practical Short Course on Membrane & Other Separations Technologies: Applications in food, dairy, beverage, and bioprocessing, Food Protein Research & Development Center, Texas A&M Engineering Experiment Station, College Station, TX, April 27- May 1, 2014.
 26. Dong Suk Han, “Environment and Energy Research at Qatar: Challenges & Opportunities”, Korea Institute of Industrial Technology (KITECH), Incheon, Korea, Aug-27, 2013.
 27. Dong Suk Han, “Water Treatment Technologies and Trends”, Department of Civil and

- Environmental Engineering, Hanyang University, Korea, May-27, 2011
28. Dong Suk Han, “Water Treatment Technologies and Trend”, Department of Energy and Environmental Science, Keimyung University, Korea, May-21, 2011
 29. Dong Suk Han, “Adsorptive Reduction of Selenium, Arsenic, Mercury by Pyrite (FeS₂) Toward Stable Precipitates”, Department of Civil and Environmental Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea, Aug-12, 2010
 30. Dong Suk Han, “Adsorptive Reduction of Selenium, Arsenic, Mercury by Pyrite (FeS₂) Toward Stable Precipitates”, Department of Energy and Environmental Science, Keimyung University, Korea, Aug-11, 2010
 31. Dong Suk Han (*as Best Paper Award*), “Sorption of Selenium(IV) and Selenium(VI) to Synthetic Pyrite (FeS₂) and Stabilization via Surface Reactions”, Division of Environmental Chemistry, American Chemical Society (ACS), 238th ACS National Meeting, Washington, D.C., August 16-20, 2009
 32. Dong Suk Han, “Removal of Arsenic from Water by Nanostructured Adsorbent Media”, Graduate Student Seminar, hosted by combined departments of CVEN, BAEN and WMHS, Texas A&M University, Nov-19, 2008.

CONFERENCE PROCEEDINGS & PRESENTATIONS

1. (Poster & Flash oral) M. Gulied, F. S. Zavahir, T. Elmakki, Z. Ahmad, L. Al-Sulaiti, D. S. Han, “Is electrochemical technology viable for lithium recovery?”, Chemicals & Materials for Emerging Technologies (CHEMET) E-Conference, Qatar University, 15-17 November, 2020.
2. (Poster) T. ElMakki, F. S. Zavahir, M. Gulied, H. Park, M. Khraisheh, A. Shakoor, A. Zubair, D.S. Han, “Reverse electrodialysis (RED) for harvesting salinity gradient energy”, Chemicals & Materials for Emerging Technologies (CHEMET) E-Conference, Qatar University, 15-17 November, 2020.
3. (Poster) F. S. Zavahir, T. ElMakki, M. Gulied, K. Logade, K. Kakosimonos, D. S. Han, “Air pollution cleanup-based water-energy-food nexus technology”, Chemicals & Materials for Emerging Technologies (CHEMET) E-Conference, Qatar University, 15-17 November, 2020.
4. (Poster) M. H. Guiled, A. Al Nouss, T. Elmakki, F. S. Zavair, D. S. Han, “Comprehensive assessment of osmotic assisted reverse osmosis (OARO) process for brine management”, QU Annual Research Forum & Exhibition, Research Complex, Qatar University, 28 Oct, 2020.
5. (Poster) T. Elmakki, F. S. Zavahir, M. H. Guiled, N. Ismail, A. Hameed, D. S. Han, “Advanced degradation of organic substance in water using no-ferric Fenton reaction on titania nanotube”, QU Annual Research Forum & Exhibition, Research Complex, Qatar University, 28 Oct, 2020.
6. (Poster) F. S. Javahir, T. Elmakki, M. H. Gulied, K. Logade, K. Kakosimos, D. S. Han, “Sustainable hybrid system for simultaneous desalting of liquid fertilizer and fuel generation”, QU Annual Research Forum & Exhibition, Research Complex, Qatar University, 28 Oct, 2020.
7. (Oral) S. Kim, D. S. Han, H. Park, “Sunlight driven desalination coupled with wastewater treatment and hydrogen production”, PRiME2020 E-conference, The Electrochemical Society (ECS), 4-9 October, 2020.

8. (Oral) S. H. Yoon, C. Yu, N. Elbashir, D. S. Han, “Density functional theory for the catalytic role of Fe in graphitic-/pyridinic-nitrogen-doped carbon nanotube” 3rd International Computational Science & Engineering Conference, Marriot Marquis City Center Doha Hotel, Doha, Qatar, 21-22 October 2019.
9. (Poster) D. S. Han, Y. Liu, C. Yu, “Influence of nanoparticle fillers and coating on reverse osmosis (RO) membrane performance”, 12th International Desalination Workshop (IDW), Maison Glad Jeju Hotel, Jeju Island, Korea, Aug. 27-30, 2019
10. (Oral) V. H. Tran, S. Lim, N. Pathak, N. Akther, S. Phuntsho, H. Park, D. S. Han, H. Shon, “Osmotic membrane bioreactor using a novel outer selective thin-film composite hollow fiber membrane”, 12th International Desalination Workshop (IDW), Maison Glad Jeju Hotel, Jeju Island, Korea, Aug. 27-30, 2019. (**Best Oral Presentation Award**)
11. (Poster) S. H. Yoon, H. Park, N. Elbashir, D. S. Han, “Theoretical insight into electrochemical properties of carbon nanotubes as doped with nitrogen and iron”, 70th Annual Meeting of the International Society of Electrochemistry, Durban International Convention Center, Durban, South Africa, Aug. 4-9, 2019.
12. (Oral) D. S. Han, S. H. Yoon, N. Elbashir, H. Park, “Application of nanostructured titania for renewable energy production and water treatment”, 70th Annual Meeting of the International Society of Electrochemistry, Durban International Convention Center, Durban, South Africa, Aug. 4-9, 2019.
13. (Oral) H. Park, G. Piao, B. J. Kim, S. Y. Choi, W. Choi, J-J lee, D. S. Han, (Keynote) “Sunlight-assisted electrocatalytic CO₂ conversion to value-added chemicals using nanostructured metals and metal oxides”, 70th Annual Meeting of the International Society of Electrochemistry, Durban International Convention Center, Durban, South Africa, Aug. 4-9, 2019.
14. (Poster) S. H. Yoon, C. Yu, H. Park, N. Elbashir, D. S. Han, “Conductive functionalization of carbon nanotube (CNT) with iron and nitrogen precursors: Computational characterization”, 8th Global Conference on Global Warming, Intercontinental Hotel, Doha, Qatar, April 22-25, 2019.
15. (Oral) S. H. Yoon, H. Park, N. Elbashir, D. S. Han, “Mechanistic study for unravelling the photoelectrochemical CO₂ reduction to formic acid at a mixed ternary and binary phases”, 8th Global Conference on Global Warming, Intercontinental Hotel, Doha, Qatar, April 22-25, 2019. (**Best Oral Presentation Award**)
16. (Oral) D. S. Han, S. H. Yoon, H. Park, “Titania nanotube arrays in environmental and energy applications”, 8th Global Conference on Global Warming, Intercontinental Hotel, Doha, Qatar, April 22-25, 2019.
17. (Poster) R. Faraj, S. H. Yoon, D. S. Han, N. Elbashir, “Exploring TiO₂ nanotube arrays: Fabrication Process”, 8th TAMUQ Annual Research and Industry Forum, Texas A&M University at Qatar, April 17, 2019.
18. (Poster) S. H. Yoon, C. Yu, N. Elbashir, D. S. Han, “Computational study on Functionality of Fe/N/CNT for oxygen reduction reaction and CO₂ conversion”, 8th TAMUQ Annual Research and Industry Forum, Texas A&M University at Qatar, April 17, 2019.
19. (Poster) D. S. Han, S. Kim, S. H. Yoon, H. Park, “Solar desalination coupled with water treatment and molecular hydrogen production: A novel water-energy nexus”, Qatar University

- Annual Research Forum and Exhibition (QUARFE)-2019, Research complex, Qatar University, April 15, 2019.
20. (Oral) S. Kim, J. Piao, B. J. Kim, D. S. Han, H. Park, "Sunlight-assisted electrochemical desalination and simultaneous water treatment", 256th American Chemical Society (ACS) National Meeting, Boston, MA, USA, Aug 19-23, 2018.
 21. (Oral) V. H. Tran, S. Lim, N. Pathak, N. Akther, S. Phuntsho, D. S. Han, H. Shon, "Application of novel outer selective thin film composite hollow fiber forward osmosis membrane in osmotic membrane bioreactor treating municipal wastewater", 11th International Desalination Workshop (IDW) & Membranes and Membrane Processes for Water Applications (MEMSIS), Nanyang Executive Centre, Nanyang Technological University (NTU), Singapore, July 12-13, 2018.
 22. (Oral) D. S. Han, S. Kim, G. Piao, H. K. Shon, H. Park, "Hydrogen production and water purification using photoelectrocatalytic desalination process", 11th International Desalination Workshop (IDW) & Membranes and Membrane Processes for Water Applications (MEMSIS), Nanyang Executive Centre, Nanyang Technological University (NTU), Singapore, July 12-13, 2018.
 23. (Oral) U. Kang, S. Y. Choi, H.W. Jeong, G. Piao, D. S. Han, H. Park, "Ultra-efficient solar CO₂ conversion using semiconductor electrodes, CIMTEC-8th Forum on New Materials, Perugia, Italy, June 11, 2018.
 24. (Oral) M. Javiad, A. Abdel-Wahab, D. S. Han, "Metallic titanium(Ti) Mesh synthesis using 3D-printing technology for oil/water separation", 10th Visualization development competition & 6th 3D printing competition, Texas A&M University at Qatar, May 13, 2018.
 25. (Poster) S. H. Yoon, U. Kang, A. Abdel-Wahab, H. Park, D. S. Han, "Computational study for reaction routes of CO₂ on heterojunction Cu-Fe oxide materials", Energy Materials and Nanotechnology (EMN) Conference, Amsterdam, Netherlands, April 16-20, 2018.
 26. (Oral) D. S. Han, "Solar-Powered Desalination Process Accompanying CO₂ Conversion and Water Purification", QNRF Kick-off Forum, Qatar National Convention Center (QNCC), Feb. 21, 2018.
 27. (Poster) D. S. Han, K. Wang, A. Abdel-Wahab, Z. Yang, "A windable and stretchable three-dimensional all inorganic membrane for oil/water separation", The 10th International Desalination Workshop (IDW), BEXCO, Pusan, Korea, Nov. 22-25, 2017.
 18. (Poster) D. S. Han, S. H. Yoon, A. Abdel-Wahab, C. Yu, and A. Han, "Correlating electronic properties of 3D-carbon nanotube (CNT) sponge cathode to faradaic microbial desalination cell (MDC) by density functional theory (DFT)" The 10th International Desalination Workshop (IDW), BEXCO, Pusan, Korea, Nov. 22-25, 2017.
 19. (Keynote) S. Y. Yang, D. S. Han, and H. Park, "Development of ROS-generating oxide electrocatalysts for high efficiency remediation of aquatic pollutants", The 23rd International Conference on Advanced Oxidation Technologies for Treatment of Water, Air and Soil, Clearwater Beach, Florida, USA, Nov. 13, 2017.
 20. (Keynote) U. Kang, S. Y. Choi, S. H. Yoon, D. S. Han, and H. Park, "Development of photocatalysts for stand-alone CO₂ conversion into value-added chemicals", The 22nd International Conference on Semiconductor Photocatalysis & Solar Energy Conversion,

Cleanwater Beach, Florida, USA, Nov. 13, 2017.

21. (Oral) S. H. Yoon, U. Kang, H. Park, A. Abdel-Wahab, D. S. Han, “Density functional theory (DFT) calculations for selective formate formation from artificial photosynthesis of CO₂ and H₂O using Cu-Fe Oxide Catalyst”, 2nd International Computational Science and Engineering Conference”, Doha, Qatar, Oct. 23-24, 2017.
22. (Poster) B. J. Kim, D. S. Han, H. Park, “Membrane-using desalination cells with concurrent electrocatalytic wastewater treatment, 3rd International Water Industry Conference: Water Sustainability, Gyeongju, Korea, September 19-22, 2017.
23. (Oral) S. Kim, H. Park, M. Kim, D. S. Han, “Sunlight-driven photoelectrocatalytic desalination, water treatment, and simultaneous production of hydrogen”, 3rd International Water Industry Conference: Water Sustainability, Gyeongju, Korea, September 19-22, 2017.
24. (Poster) D. S. Han, S. H. Yoon, C. Yu, A. Abdel-Wahab, A. Han, “Electronic properties of 3D-bifunctional carbon nanotube sponge for bioelectrical system applications”, 254th ACS National Meeting, Washing, DC, USA, August 20-24, 2017.
25. (Oral) V. H. Tran, D. S. Han, H. Park, A. Abdel-Wahab, H. Shon, “Forward osmosis using sulfur containing air pollutant as draw solution for water-energy-food nexus technology”, 254th ACS National Meeting, Washing, DC, USA, August 20-24, 2017.
26. (Oral) U. S. Kang, D. S. Han, S. H. Yoon, H. Park, “Photoproduction of liquid formate from carbon dioxide and water over a month on copper and iron mixed photocatalysts”, 254th ACS National Meeting, Washing, DC, USA, August 20-24, 2017.
27. (Poster) S.H. Yoon, D.S. Han, U. Kang, A. Abdel-Wahab, H. Park, “Density functional theory investigation of reaction energies in selective conversion of CO₂ to formate using Cu-Fe oxide material”, 254th ACS National Meeting, Washing, DC, USA, August 20-24, 2017.
28. (Poster) V. H. Tran, D. S. Han, H. Shon, “Sulfur-contained air pollutants as draw solution for forward osmosis process: water-energy-food nexus technology”, CEE Research Showcase, University of Technology Sydney, April 28, 2017. (**Best Poster Presentation Award**)
29. (Poster) D. S. Han, T. H. Jeon, A. D. Bokare, A. Abdel-Wahab, H. Park, W. Choi, “Dual modification of hematite photoanode by Sn-doping and Nb₂O₅ layer for water oxidation”, 21st Topical Meeting of the International Society of Electrochemistry, Szeged, Hungary, April 23-26, 2017.
30. (**Keynote**) H. Park, D. S. Han, U. Kang, J. J. Lee, “All-inorganic solar synthesis of liquid formate from CO₂ and water over a month on durable and recyclable copper iron photocatalyst films at efficiency exceeding photosynthesis”, 21st Topical Meeting of the International Society of Electrochemistry, Szeged, Hungary, April 23-26, 2017.
31. (Poster) S. H. Yoon, H. Park, A. Abdel-Wahab, D. S. Han, “A DFT Study on Cu-Fe Oxide Material for CO₂ Conversion: Homogeneous vs Heterogeneous Electronic Structure”, 6th TAMUQ Annual Research and Industry Forum, Sheraton Hotel, Doha, Qatar, April 20, 2017. (**2nd Place Poster Presentation Award**)
32. (Poster) D. S. Han, R. Elshorafa, S. H. Yoon, W. Yiming, A. Abdel-Wahab, “Molecular and Macroscopic Study on Light-Harvesting TiO₂/WO₃ Materials for Environmental Applications”, 6th TAMUQ Annual Research and Industry Forum, Sheraton Hotel, Doha, Qatar, April 20, 2017.

33. (Poster) S. H. Yoon, H. Park, A. Abdel-Wahab, D. S. Han, “A density functional theory (DFT) study of electrical CO₂ conversion on the nanoporous copper foam material”, 5th International Conference on Multifunctional, Hybrid and Nanomaterials, Lisbon, Portugal, March 6-10, 2017.
34. (Poster) S. H. Yoon, U. Kang, H. Park, A. Abdel-Wahab, D. S. Han, “A density functional theory (DFT) study for correlating electronic properties of heterojunction CuFeO₂/CuO Material to CO₂ photoconversion” 5th International Conference on Multifunctional, Hybrid and Nanomaterials, Lisbon, Portugal, March 6-10, 2017.
35. (Poster) M. G. Rafique, M. Anas, D. S. Han, S. H. Yoon, A. Abdel-Wahab, “Photocatalytic oxidation-based water treatment using nano-structured TiO₂ electrodes”, 2016 AIChE Annual Meeting, Hilton San Francisco Union Square, San Francisco, CA, Nov. 13-18, 2016 (*3rd Poster Presentation Award*).
36. (Poster) D. S. Han, C. Erbay, C. Yu, A. Han, A. Khodary, A. Abdel-Wahab, “Factors influencing overall performance of microbial fuel cell compromised of 3D porous carbon nanotube sponge electrode toward desalination”, The 9th International Desalination Workshop, Yas Island Rotana Hotel, Abu Dhabi, UAE, Nov. 13-15, 2016 (*Best Poster Presentation Award*).
37. (Poster) D. S. Han, S. Sahebi, S. Phunsho, L. Tijing, G. Han, A. Abdel-Wahab, H. K. Shon, “A compacted woven backing fabric-supported thin film composite membrane for pressure-assisted forward osmosis”, The 9th International Desalination Workshop, Yas Island Rotana Hotel, Abu Dhabi, UAE, Nov. 13-15, 2016.
38. (Oral) D. S. Han, R. ElShorafa, S. H. Yoon, A. Ghenymy, Y. Wubulikasimu, A. Abdel-Wahab, “Demonstration of the feasibility of water treatment by solar storage material-deposited filtration membrane”, The 9th International Desalination Workshop, Yas Island Rotana Hotel, Abu Dhabi, UAE, Nov. 13-15, 2016.
39. (Poster) D. S. Han, C. Erbay, C. Yu, A. Han, R. Sadr, A. Abdel-Wahab, “Microbial electrochemical system toward water-energy nexus technology”, Research Solutions For A Sustainable Water Future in Qatar, Research Outcome Seminar, Qatar National Research Fund (QNRF), Tornado Tower, Doha, Nov. 14, 2016.
40. (Poster) D. S. Han, R. ElShorafa, M. Rafique, S. H. Yoon, S. H. Kim, H. Park, A. Abdel-Wahab, “Nanostructured TiO₂-based water treatment: Light harvesting, filtration, and fenton-mimic oxidation”, 2nd International Water Industry Conference: Water-Energy-Health Nexus, EXCO, Daegu, Korea, Oct. 18-21, 2016.
41. (Oral) U. Kang, D. S. Han, S. H. Yoon, A. Abdel-Wahab, H. Park, “Photoconversion of carbon dioxide and water to formate on copper and iron mixed oxide catalysis”, PRIME-Pacific RIM Meeting on Electrochemical and Solid State Science, 2-7 October 2016, Honolulu, Hawaii, USA.
42. (Oral) S. Kim, D. S. Han, S. H. Yoon, A. Abdel-Wahab, H. Park, “Solar visible light storage on WO₃-CdS heterojunction”, PRIME-Pacific RIM Meeting on Electrochemical and Solid-State Science, 2-7 October 2016, Honolulu, Hawaii, USA.
43. (Poster) D. S. Han, C. Yu, A. Han, A. Abdel-Wahab, “How much does membrane separator affect overall performance of microbial desalination cell?” International Conference on Nanotechnology, Nanomaterials & Thin Films for Energy Applications, 27-29 July 2016,

University of Liverpool, UK.

44. (Poster) S. H. Yoon, D. S. Han, U. Kang, H. Park, A. Abdel-Wahab, “Binary Cu-Fe oxide photocathode for application to energy and environment”, International Conference on Nanotechnology, Nanomaterials & Thin Films for Energy Applications, 27-29 July 2016, University of Liverpool, UK (***Awarded as Research Excellency Travel Grant***).
45. (Poster) M. Rafique, D. S. Han, S.H. Yoon, A. Khodary, A. Abdel-Wahab, “Advanced oxidation process using nanostructured titanium dioxide electrode”, 5th TAMUQ Annual Research and Industry Forum, St. Regis Hotel, Doha, Qatar, April 12, 2016.
46. (Poster) D. S. Han, S. H. Yoon, A. Han, C. Yu, H. Park, A. Abdel-Wahab, “Low-cost materials for constructing stand-alone system in sustainable energy and environmental application”, 5th TAMUQ Annual Research and Industry Forum, St. Regis Hotel, Doha, Qatar, April 12, 2016.
47. (Poster) S. H. Yoon, D. S. Han, H. Park, A. Abdel-Wahab, “Photoelectrochemical materials and systems for photoconversion of carbon dioxide to value-added chemicals”, 5th TAMUQ Annual Research and Industry Forum, St. Regis Hotel, Doha, Qatar, April 12, 2016.
48. (Poster) U. Kang, D. S. Han, A. Abdel-Wahab, H. Park, “Highly efficient artificial photosynthesis of formate from CO₂ and water on heterojunction copper iron oxide catalysts”, Qatar Foundation (QF)-Annual Research Conference (ARC), Qatar National Convention Center (QNCC), Doha, Qatar, Nov. 22-23, 2016.
49. (Poster) D. S. Han, C. Erbay, C. Yu, A. Han, A. Abdel-Wahab, “Carbon-based electrode materials for biotic treatment of wastewater and saline water”, Qatar Foundation (QF)-Annual Research Conference (ARC), Qatar National Convention Center (QNCC), Doha, Qatar, Nov. 22-23, 2016.
50. (Poster) R. Elshorafa, D. S. Han, H. Park, A. Abdel-Wahab, “Application of TiO₂-WO₃ composite for continuous reduction of chromium(VI) in light-limited condition”, Qatar Foundation (QF)-Annual Research Conference (ARC), Qatar National Convention Center (QNCC), Doha, Qatar, Nov. 22-23, 2016.
51. (Poster) D. S. Han, U. Kang, S. H. Yoon, H. Park, A. Abdel-Wahab, “Binary CuFe catalyst-based photoelectrochemical system for artificial photosynthesis of CO₂ and H₂O”, 7th Materials Science and Engineering Symposium, March 10, Qatar University, Doha, Qatar, 2016.
52. (Poster) S. H. Yoon, R. ElShorafa, M. Katebah, D. S. Han, A. Abdel-Wahab, “Photocatalytic reduction of toxic inorganic contaminant (Cr(VI) and Hg(II)) using nanostructured TiO₂: Nanoparticle vs nanotube”, 7th Materials Science and Engineering Symposium, March 10, Qatar University, Doha, Qatar, 2016.
53. (Poster) R. ElShorafa, D. S. Han, H. Park, A. Abdel-Wahab, “Constructing solar energy storage materials using TiO₂-WO₃ nanocomposite and its application to water treatment”, 7th Materials Science and Engineering Symposium, March 10, Qatar University, Doha, Qatar, 2016 (***Best Poster Presentation Award***).
54. (Oral) S. Lee, G. Piao, D. S. Han, A. Abdel-Wahab, H. Park. “Solar mining of seawater uranium using oxide semiconductors”, 2nd International Conference on Desalination and Environment, Jan 23- Jan 26, Doha, Qatar, 2016.
55. (Oral) D. S. Han, C. Erbay, C. Yu, A. Abdel-Wahab, A. Han, “Microbial fuel cell using 3D

- porous carbon nanotube sponge anode for water reuse and desalination”, 2nd International Conference on Desalination and Environment, Jan 23- Jan 26, Doha, Qatar, 2016.
56. (Poster) R. ElShorafa, M. Rafique, D. S. Han, H. Park, A. Abdel-Wahab, “Composite WO₃/TiO₂ nanostructured ultrafiltration membrane for treatment of chromium(VI) in water”, 2nd International Conference on Desalination and Environment, Jan 23- Jan 26, Doha, Qatar, 2016.
 57. (Poster) D. S. Han, MD S. Kawsher, Y. Duan, B. Batchelor, and A. Abdel-Wahab, “Removal of mercury from aqueous solutions by iron sulfides (FeS, FeS₂)-supported ultrafiltration process”, 2nd International Conference on Desalination using Membrane Technology, July 26-29, Singapore Expo Convention and Exhibition Centre, Singapore, 2015.
 58. (Oral) D. S. Han, H. W. Jeong, A. Abdel-Wahab, H. Park, “Morphology-dependent charge transfer of crystalline ZnO and their importance for environmental and energy applications”, 27th International Conference on Photochemistry, June 28- July 3, ICC Jeju, Jeju Island, Korea, 2015.
 59. (Poster) S. K. Choi, D. S. Han, A. Abdel-Wahab, H. Park, “Heterojunction p-Si wire arrays for photoelectrochemical fuel generation”, 27th International Conference on Photochemistry, June 28- July 3, ICC Jeju, Jeju Island, Korea, 2015.
 60. (Poster) U. Kang, D. S. Han, A. Abdel-Wahab, M. Hoffmann, H. Park, “CO₂ and water on sodium tri-titanate nanotubes coupled with copper and CdS, 27th International Conference on Photochemistry, June 28- July 3, ICC Jeju, Jeju Island, Korea, 2015.
 61. (Poster) D. S. Han, A. Abdel-Wahab, A. Han, “Microbial desalination cell for sustainable desalination and energy production: Perspective and challenges”, 4th TAMUQ Annual Research and Industry Showcase, Qatar National Convention Center, Doha, Qatar, April 23, 2015
 62. (Poster) MD S. Kawsher, D. S. Han, A. Abdel-Wahab, “Continuous removal of mercury(II) using reactive adsorbents-coated sand filtration system”, 4th TAMUQ Annual Research and Industry Showcase, Qatar National Convention Center, Doha, Qatar, April 23, 2015
 63. (Poster) M. Katebah, A. Mansour, D. S. Han, A. Abdel-Wahab, “Mercury removal using titanium dioxide photocatalyst: Nanoparticle versus nanotube”, 4th TAMUQ Annual Research and Industry Showcase, Qatar National Convention Center, Doha, Qatar, April 23, 2015
 64. (Poster) R. Elshorafa, D. S. Han, A. Abdel-Wahab, “Photocatalytic reduction of chromate(VI) using TiO₂/sulfite system”, 4th TAMUQ Annual Research and Industry Showcase, Qatar National Convention Center, Doha, Qatar, April 23, 2015
 65. (Oral) D. S. Han, A. Abdel-Wahab, and H. Park, “Morphology-dependent photocatalytic performance of oxide semiconductors and their importance for environmental and energy applications”, Energy & Water Security Workshop, Hamad Bin Khalifa University, Feb. 15-17, 2015.
 66. (Poster) D. S. Han, H. W. Jeong, S. Y. Choi, A. Abdel-Wahab, H. Park, “Morphology-dependent photocatalytic activities of crystalline ZnO and their Importance for environmental and energy applications”, 4th Qatar Foundation(QF)-Annual Research Conference (ARC), Qatar National Convention Center (QNCC), 18-19 Nov.2014.
 67. (Poster) M. Katebah, A. Mansour, D. S. Han, A. Abdel-Wahab, “Mercury removal using titanium dioxide photocatalyst: Nanoparticle vs nanotube”, 4th Qatar Foundation(QF)-Annual

- Research Conference (ARC), Qatar National Convention Center (QNCC), 18-19 Nov. 2014
68. (Poster) D. S. Han, S. K. Choi, U. Kang, H. Park, Ahmed Abdel-Wahab, "Nanostructured p-type photocathode for selective production of hydrocarbon fuel from carbon dioxide", 3th TAMUQ Annual Research and Industry Forum, Qatar National Convention Center (QNCC), Doha, Qatar, April 7, 2014.
 69. (Poster) Md S. Kawsher, D. S. Han, A. Khodary, B. Batchelor, A. Abdel-Wahab, "Pyrite (FeS₂)-supported ultrafiltration system for removal of mercury from water", 3th TAMUQ Annual Research and Industry Forum, Qatar National Convention Center (QNCC), Doha, Qatar, April 7, 2014.
 70. (Poster) A. Mansour, A. Muhammad, D. S. Han, and A. Abdel-Wahab, "Photocatalytic reduction of mercury using TiO₂ particles", 3th TAMUQ Annual Research and Industry Forum, Qatar National Convention Center (QNCC), Doha, Qatar, April 7, 2014.
 71. (Poster) H. Hamza, T. Katibe, D. S. Han, A. Abdel-Wahab, "Preparation, characterization, and stabilization of silver nanoparticles for biological wastewater treatment", 3th TAMUQ Annual Research and Industry Forum, Qatar National Convention Center (QNCC), Doha, Qatar, April 7, 2014.
 72. (Oral) D. S. Han, H. Park, and A. Abdel-Wahab, "Nanostructured photocathodes for selective production of hydrocarbon fuel from carbon dioxide: From half-cell to tandem cell, Track 2: Energy, Water, Safety and the Environment, 3th TAMUQ Annual Research and Industry Forum, Qatar National Convention Center (QNCC), Doha, Qatar, April 7, 2014.
 73. (Oral) A. Muhammad, D. S. Han, A. Abdel-Wahab, "Photocatalytic degradation of organic pollutant using nanostructured titania: Titania nanotube, titania nanorod, and Pd or N-doped titania", Student Presentations: Building Capacity Through Research, 3th TAMUQ Annual Research and Industry Forum, Qatar National Convention Center (QNCC), Doha, Qatar, April 7, 2014.
 74. (Poster) M. Orillano, D. S. Han, A. Khodary, B. Batchelor, A. Abdel-Wahab, "Reactive nanoparticle-supported dead-end flow ultrafiltration for removal of mercury from water: Effect of solution composition", Qatar Foundation Annual Research Conference (QF-ARC), Qatar National Convention Center, Doha, Qatar, Nov. 24-25, 2013.
 75. (Poster) Y. Duan, D. S. Han, B. Batchelor, A. Abdel-Wahab, "Synthesis, characterization, and application of pyrite for removal of mercury", Qatar Foundation Annual Research Conference (QF-ARC), Qatar National Convention Center, Doha, Qatar, Nov. 24-25, 2013.
 76. (Poster) D. S. Han, S. K. Choi, U. Kang, H. W. Jung, S. Lee, S. Choi, H. Park, A. Abdel-Wahab, "Conversion of carbon dioxide to useful fuels using photoelectrochemical technology", Qatar Foundation Annual Research Conference (QF-ARC), Qatar National Convention Center, Doha, Qatar, Nov. 24-25, 2013.
 77. (Oral) A. Muhammad, D. S. Han, U. Kang, H. Park, A. Abdel-Wahab, "Different kinetic degradation of methyl orange by nanostructured titania: Titania nanotube, titania nanofiber, and titania nanoparticle", Qatar Foundation Annual Research Conference (QF-ARC), Qatar National Convention Center, Doha, Qatar, Nov. 24-25, 2013.
 78. (Poster) S. Kim, D. S. Han, A. Abdel-Wahab, and H. Park, "Heterojunction electrodes for

- photon harvesting and simultaneous storage”, 4th International Conference on Semiconductor Photochemistry, Prague, Czech Republic, June 23-27, 2013.
79. (Poster) D. S. Han, A. Khodary, M. Orillano, B. Batchelor, and A. Abdel-Wahab, “Continuous contact method for removal of mercury in water using nanoparticle iron sulfide”, 2nd TAMUQ Annual Research and Industry Forum, Qatar National Convention Center (QNCC), Doha, Qatar, April 22, 2013.
 80. (Poster) D. S. Han, C. Lee, S. Park, B. Batchelor, and A. Abdel-Wahab, “Degradation of perchlorate in water using Zero-Valent Titanium (ZVT): Kinetics, membrane separation, and electrochemistry, 2nd TAMUQ Annual Research and Industry Forum, Qatar National Convention Center (QNCC), Doha, Qatar, April 22, 2013.
 81. (Poster) M. Orillano, D. S. Han, B. Batchelor, A. Abdel-Wahab, “Removal of mercury from water using reactive iron sulfide-laden cross-flow ultrafiltration membrane”, 2nd TAMUQ Annual Research and Industry Forum, Qatar National Convention Center, Doha (QNCC), Doha, Qatar, April 22, 2013.
 82. (Oral) D. S. Han, A. Khodary, B. Batchelor, and A. Abdel-Wahab, “Removal of mercury from water using reactive adsorbent/membrane (RAM) hybrid filtration process”, International Conference on Advances in Environmental Science and Technology, 1st World Congress on Advances in Civil, Environmental, and Material Research (ACEM '12), COEX, Seoul, Korea, August 26-29, 2012.
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BOOK CHAPTERS

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INVENTION DISCLOSURE

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REVIEW ACTIVITIES FOR RESEARCH FUND PROGRAMS

1. Proposal evaluation reviewer, Binational Agricultural Research and Development Fund (BARD), The United States-Israel, Dec. 2017.
2. Proposal evaluation reviewer, Binational Agricultural Research and Development Fund (BARD), The United States-Israel, Jan. 2019.

REVIEW ACTIVITIES FOR SCHOLARLY JOURNALS & BOOK

Journal of Environmental Progress and Sustainable Energy (AIChE); Clean-Soil, Air, Water; International Journal of Nanomedicine; Journal of Colloid and Interface Science; Environmental Science and Technology; eBook: “Frontiers in Colloid Science”, Bentham-Science Advances in Environmental Research; Journal of Membrane Science; Chemical Engineering Journal; Water, Air, & Soil Pollution; Environmental Science and Pollution Research; Surface and Interface Analysis; Journal of Hazardous Material; Journal of Environmental Chemical Engineering; Desalination; The Journal of Physical Chemistry C; Journal of Environmental Engineering; Separation Science and Technology; Desalination and Water Treatment; Applied Catalysis, B. Environmental; Materials Science in Semiconductor Processing; Environmental Science and Pollution Research; Industrial & Engineering Chemistry Research; Catalysis Today; Progress in Materials Science; Critical Reviews in Environmental Science and Technology; Frontiers in Chemistry; Emergent Materials; RSC Advances; ACS Omega