

CURRICULUM VITAE

March 2016

Dr. FADWA T. ELJACK

Assistant Professor of Chemical Engineering
Department of Chemical Engineering
College of Engineering
Qatar University, QATAR
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PERSONAL INFORMATION

Mailing Address:

Department of Chemical Engineering
Qatar University
PO Box 2713
Doha, Qatar

EDUCATION

- 2007 – Ph.D., Chemical Engineering, Auburn University
Thesis title: "A Property Based Approach to Integrated Process and Molecular Design"
Advisor, Dr. Mario R. Eden
- 1999 – B.S. Chemical Engineering, Auburn University

EMPLOYMENT HISTORY

- 2014 – 2019 Adjunct Faculty, the Artie McFerrin Department of Chemical Engineering, TAMU
- 2010 – Present *Assistant Professor*, Department of Chemical Engineering, QU
- 2008 – 2010 *Director*, Gas Processing Center (GPC), Qatar University
- 2007 – 2008 *Assistant Professor*, Department of Chemical Engineering, QU
- 2007 *Post Doctorate*, Department of Chemical Engineering, Auburn University
- 2003 – 2007 *Research Associate*, Auburn University

AWARDS AND RECOGNITION

- 2015: Best Paper Presentation, AIChE Annual Meeting, USA
- 2015: 1st Place Poster competition, "My Gateway to Research", QU
- 2014: 4th International Gas Processing Symposium, Certificate of appreciation
- 2014: QU Faculty Senate Third Cycle, Certificate of Appreciation
- 2006: Invited Plenary Lecture - Computing and Systems Technology Division (CAST), AIChE Annual Meeting
- 2005: CAST Directors' Award for best poster - AIChE Annual Meeting

CONSULTING EXPERIENCE

Project title: CFD Modeling of Convective Heat Released from Air cooler Bank
Investigator(s): **Dr. Fadwa Eljack** and Dr. Saud Ghani
Amount: QR 275,000
Project main tasks: Model and simulate process air cooler using design and operating data; validate cooler performance. Develop a method to incorporate these air cooler simulation data with the developed CFD structural model of the plant.

RESEARCH INTERESTS

- Process Systems Engineering (PSE) and Computer aided process engineering (CAPE)
- Environmental Management of Processing Facilities
- Process integration and optimization, material conservation, water, energy and the inclusion of safety
- Process & product Design – Computer Aided Tools
- Optimization of Novel Process Technologies

FUNDED RESEARCH PROJECTS

- A Life-Cycle Integrated Approach to the Incorporation of Safety in the Design, Operation, and Optimization of Industrial Supply Chains in Qatar, \$965,000, QNRF-NPRP, (2014 – 2017), **Lead PI**.
- An Integrated Approach to the Simultaneous Design and Operation of Industrial Facilities for Abnormal Situation Management, \$918,000, QNRF-NPRP, (2013-2016), **Lead PI**.
- Economic Analysis of a Novel Gas to Ethylene (GTE) technology using Natural Gas as a Feedstock, QR 150,000, QU Internal Grant (2012-13), **Lead PI**.
- An Approach to the Design of Advanced Fischer-Tropsch Reactor Technology Development of Novel Gas-to-Liquid Processes in Near-Critical and Supercritical Phase Media, \$1,047,800, QNRF-NPRP (2008-2011), **Co-Lead PI**.
- Inquiry-Guided Learning of Advanced Gas Processing: Computer-Aided Modules and Virtual Classrooms for Chemical Engineering Education, \$1,020,000, QNRF-NPRP, **Lead PI** (2008-2011)

TEACHING

Courses:

- Plant Design - Capstone Design Sequence (CHME 421, CHME 422)
- Process Integration (CHME 466) – newly developed course
- Heat Transfer (CHME 311)
- Engineering Economy (GENG 360)
- Graduation Project Sequence (CHME 495, CHME 496)
- Introduction to Chemical Engineering II (CHME 202)
- Introduction to Chemical Engineering I (CHME 201)

Project Supervision:

- Mr. Mohammed Bakr, Research Assistant, **main supervisor**, Qatar University, Qatar
- Mr. Fahd Mohammed, MSc , Co-supervisor, Qatar University, Qatar (Expected graduate 2017)
- Mr. Fah Keen Chong, PhD Thesis, "Ionic Liquid Design for Enhanced Carbon Dioxide using Computer Aided Molecular Design (CAMD), " Co-supervisor, University of Nottingham – Malaysia, (Expected Graduate 2017)
- Dr. Kazi Khoda, Post Doctoral Fellow, "An Integrated Approach to the Simultaneous Design and Operation of Industrial Facilities for Abnormal Situation Management", **main supervisor/advisor**, Qatar University, (2013 – Present)
- Mrs. Serveh Kamrava, Master's Thesis, "Managing Abnormal Operation through Process Integration and Cogeneration Systems". Co-supervisor/special committee member. Texas A&M University, USA (August 2014, Graduated)
- Mr. Fahd Mohammed, Research Assistant, "Tracking of GHG Emissions and Tax Implication During Normal/ Abnormal Situations – Ethylene Process Base Case Industrial Application", **main supervisor/advisor**, Qatar University, (2013 -14)
- Ms. Dina Tarek, Research Assistant, "Development of Safety Metric to Account for Cumulative Risk Associated with Supply Chains", **main supervisor/advisor**, Qatar University (2014 – 15)

SERVICES

Committees (at Qatar University):

Qatar University

- 2012 – Present Strategic Planning Committee member, Area 3
- 2012 – 13 Faculty Senate Third Cycle, member

College of Engineering

- 2013 – Present Student Affairs Committee, member
- 2012 – Present Society Petroleum Engineering Advisor

- 2012 – 2014 Engineering Week Coordinator
- 2012 Chairman of Examination Committee for Master's Thesis, September 2012
- 2007 – 10 Gasna Competition Organizer
- 2007 – 09 Technical Advisory Committee (TAC) member, GPC
- 2007 – 08 CENG Quality Assurance Committee, member
- 2007 – 08 K-12 Award Committee Chair (Adhoc)

Department of Chemical Engineering

- 2013 – Present CHME Student Advising Coordinator, CENG Advising Office
- 2013 – Present AIChE Student Chapter advisor
- 2011 – 13 Seminar Coordinator
- 2010 – Present Alumni Majlis Coordinator
- 2010 – Present Student Affairs Committee (SAC), Chair
- 2007 – Present Curriculum Committee (CC), member
- 2007 – 13 Student Advisor
- 2007 – 09 Computing and Software Committee Manager
- 2007 – 08 Research & Graduate Studies Committee (RGSC), member

Committees (Outside Qatar University):

INTERNATIONAL PROFESSIONAL SEVERICE AND SOCIETIES MEMBERSHIP

- 2012 – Present: Society for Petroleum Engineers (SPE)
- 2004 - Present: Omega Chi Epsilon Honor Society
- 2003 - Present: Tau Beta Pi Engineering Honor Society
- 1999 - Present: American Institute of Chemical Engineers (AIChE)

REGIONAL/LOCAL PROFESSIONAL SERVICES

- 2015 – Present AIChE Environmental Division, Air Section Co-chair
- 2016 – Present SPE Subcommittee Member for the 11th IPTC Conference
- 2015 – Present 5th International Gas Processing Symposium, Technical committee Member
- 2014 – 2015 Reviewer for the ACS Sustainable Chemistry Research Journal
- 2014 – 2015 SPE Subcommittee Member for the 9th IPTC Conference
- 2014 2014 AIChE Annual Meeting, Session Co-Chair, Process Development Division
- 2013 – 2015: 4th International Gas Processing Symposium, Chair Technical Program Committee
- 2013 2013 AIChE Annual Meeting, Chair Poster Session, 12A
- 2013 – Present: AIChE Student Chapter, Faculty Advisor
- 2012 – Present: Qatar Society for Petroleum Engineers (QSPE) Board, QU liason
- 2012 – Present: Society for Petrleum Engineers (SPE) Student Chapter, Faculty Advisor
- 2011 – 13 Natural Gas Conversion Board (NGCB) Local Organizing, Vice-Chair
- 2008 – Present: Reviewer for a several journals including: Computers & Chemical Engineering Journal, Journal of Clean Technology and Environmental Policy, etc.
- 2008 – 10 1st & 2nd Annual Gas Processing Symposium Chair
- 2008 – 09 Management Advisory Board (MAB) member - GPC
- 2007 – 09 Technical Advisory Committee (TAC) Member - 1st GPC Symposium (2009)

SCHOLARLY ACHIEVEMENTS

SELECET Refereed Journal Papers:

1. Kazi M-K, **Eljack F**, Elsayed N, El-Halwagi MM (2016). "Integration of energy and wastewater treatment alternatives with process facilities to manage industrial flares during normal and abnormal operations - A

- multi-objective extendible optimization framework". *Journal of Industrial and Engineering Chemistry Research*, vol 55(7), pp. 2020-2034, ACS publication. acs.iecr.5b03938. doi:10.1021/acs.iecr.5b03938.
2. Thiruvenkataswamy P, **Eljack FT**, Roy N, Mannan MS, El-Halwagi MM (2016). "Safety and techno-economic analysis of ethylene technologies". *Journal of Loss Prevention in Process Industries*, Vol 39, pp. 74 - 84. 2016;39:74-84. doi:10.1016/j.jlp.2015.11.019.
 3. Chong FK, Chemmangattuvalappil NG, **Eljack FT**, Atilhan M, Foo DCY (2016). Designing ionic liquid solvents for carbon capture using property-based visual approach. *Clean Technologies Environmental Policy*, Springer. doi:10.1007/s10098-016-1111-5.
 4. Elsayed, N., Barrufet, M., **Eljack, F.**, El-Halwagi, M. (2015). "Optimal Design of Thermal Membrane Distillation Systems for the Treatment of Shale Gas Flowback Water". *International Journal of Membrane Science and Technology*, volume 2, pp. 1 - 9 Cosmos Scholars Publishing House, E-ISSN: 2410-1869/15.
 5. Chong, F.K., Foo, D.C.Y., **Eljack, F.**, Atilhan, M., and Chemamangattuvalappil, N.G. (2015). "Ionic liquid design for enhanced carbon dioxide capture by computer-aided molecular design approach". *Clean Technology and Environmental Policy*, Springer, vol. 17, Number 5 (2015), pp. 1301-1312.
 6. Kazi, M., Mohammed, F., AlNouss, A., and **Eljack, F** (2015). "Multi-Objective Optimization Methodology to Size Cogeneration Systems for Managing Flares from Uncertain Sources during Abnormal Process Operations." *Computers & Chemical Engineering* (2015): vol 76, p. 76-86.
 7. Kamrava, S., **Eljack, F.***, Gabriel, K., and El-Halwagi, M. (2015). "Managing Abnormal Operation through Process Integration and Cogeneration Systems." *Clean Technology and Environmental Policy*, vol 17. Number 1 (2015): 119-128.
 8. Atilhan M*, **Eljack F***, Alfadala H, Froyd JE (2014). Inquiry Guided Learning in a Chemical Engineering Core Curriculum : General Instructional Approach and Specific Application to the Fluid Mechanics Case *. *International Journal of Engineering Education* (2014), **vol 30** (6A), p. 1450-1460.
 9. Chong, F.K., **Eljack, F..**, Foo, D.C.Y., Chemamangattuvalappil, N.G. (2014) "Ionic Liquid Design for Enhanced Carbon Dioxide Capture – A Computer Aided Molecular Design Approach (CAMD)", *Journal of Chemical Engineering Transactions*, vol 39, p 253-258.
 10. Dinh, Ha , Zhang, S., Xu, Y., Xu, Q., **Eljack, F.**, and El-Halwagi, M. (2014) "A Generic Approach of Using Dynamic Simulation for Industrial Emission Reduction under Abnormal Operations: Scenario Study of An Ethylene Plant Start-Up." *Industrial & Engineering Chemistry Research* (2014): vol, 53, p 15089-15100
 11. Solvason C.C., Chemmangattuvalappil N.G., **Eljack F.T.**, Eden M.R. (2009): "Efficient Visual Mixture Design of Experiments using Property Clustering Techniques", *Industrial & Engineering Chemistry Research* 48(4), pp. 2245-2256.
 12. Chemmangattuvalappil N.G., **Eljack F.T.**, Solvason C.C., Eden M.R. (2009): "A Novel Algorithm for Molecular Synthesis Using Enhanced Property Operators", *Computers and Chemical Engineering* 33(3), pp. 636-643.
 13. **Eljack. F.T.**, Eden, M.R. (2008). "A systematic visual approach to molecular design via property clusters and group contribution methods", *Computers and Chemical Engineering* 32, pp. 3002-3010.
 14. **Eljack F.T.**, Solvason C.C., Chemmangattuvalappil N.G, Eden M.R. (2008): "A Property Based Approach for Simultaneous Process and Molecular Design", *Chinese Journal of Chemical Engineering*, vol 16(3).
 15. Solvason C.C., **Eljack F.T.**, Chemmangattuvalappil N.G., Eden M.R. (2008): "Visual Mixture Design Using Property Clustering", *Computer Aided Chemical Engineering*, vol 25.
 16. **Eljack F.T.**, Eden M.R., Kazantzi V., El-Halwagi M.M. (2007): "Simultaneous Process and Molecular Design - A Property Based Approach", *AIChE Journal* 53 (5), pp. 1232-1239.
 17. Kazantzi V., Qin X., El-Halwagi M.M., **Eljack F.T.**, Eden M.R. (2007): "Simultaneous Process and Molecular Design through Property Clustering Techniques", *Industrial & Engineering Chemistry Research* 46 (10), pp. 3400-3409.
 18. **Eljack F.T.**, Abdelhady A.F., Eden M.R., Gabriel F. B., Qin X., El-Halwagi M. M. (2005): "Targeting Optimum Resource Allocation using Reverse Problem Formulations and Property Clustering Techniques", *Computers and Chemical Engineering*, 29, pp. 2304-2317.

Refereed Conference Proceedings:

19. Chong FK, Chemmangattuvalappil NG, Foo DCY, Atilhan M, **Eljack FT** (2015). "A Systematic Visual Approach to Ionic Liquid Design for Carbon Dioxide Capture", 12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering. In: *Computer Aided Chemical Engineering*. Vol 37. *Computer Aided Chemical Engineering*. Elsevier; 2015:1211-1216. doi:10.1016/B978-0-444-63577-8.50047-4.
20. Mohammed FM, Kazi M-K, AlNouss AM, **Eljack FT*** (2015). "Tracking of GHG Emissions and Tax Implication During Normal/Abnormal Situations – Ethylene Process Base Case Industrial Application", *Proceedings of the 4th International Gas Processing Symposium*. Elsevier. doi:10.1016/B978-0-444-63461-0.50026-2.

21. Dinh, H., Zhang, S., Xu, Q., **Eljack, F.**, El-Halwagi, M. (2015). "Pressure-Driven Dynamic Simulation for Flare Minimization and Greenhouse Gas Reduction during an Ethylene Plant Startup", paper 88d , Process Reengineering for Energy Saving and Pollution Prevention, 2015 AIChE Annual Meeting, Salt Lake City, USA
22. Monzure-Khoda, K., and **Eljack, F.** (2015). "Energy Integration Alternatives for Effective Use of Waste Heat Associated with Flaring during Abnormal Situation", paper 148c , Topical Conference: Innovations of Green Process Engineering for Sustainable Energy and Environment, 2015 AIChE Annual Meeting, Salt Lake City, USA
23. Mohammed, F., Monzure-Khoda, K., AlNouss, A., and **Eljack, F.** (2015). "Tracking of Flare Streams Emissions and Tax Implication during Process Abnormal Situations", paper 556e , Process Research and Development for Industrial Sustainability, 2015 AIChE Annual Meeting, Salt Lake City, USA
24. Nitin Roy, Dina Moussa, Samina Rahmani, Mahmoud El-Halwagi, Sam Mannan, **Fadwa El-Jack**(2015). "A life-cycle integrated approach to incorporation of safety in integrated design, operation and optimization of industrial supply chains", Poster Presentation at Mary KO'Connor Process Safety Center Steering Committee meeting, Jan 21, 2015, College Satation, TX, USA.
25. Nitin Roy, Preetha Thiruvengkataswamy, Mahmoud El-Halwagi, Sam Mannan, **Fadwa El-Jack** (2015). "Incorporation of safety in design and optimization of industrial supply chain", Poster Presentation at CHEGSA's Chemical Engineering Symposium, March 2015, College Station, USA.
26. **Eljack, F.***, et al. (2014) " An Integrated Approach to the Simultaneous Design and Operation of Industrial Facilities for Abnormal Situation Management", Paper #54, pp. 771 – 776, Elsevier. *Proceedings of the 8th International Conference on Foundations of Computer-Aided Process Design – FOCAPD 2014*, Cle Elum, USA.
27. Kazatzki, V., Bezergianni, S., **Eljack, F.** , Elms, R. (2011): "Optimal Scheduling of Biodiesel Plants through Property-based Integration with Oil Refineries", *Computer Aided Process Engineering* , vol 29, pp. 973-978, Elsevier 2011, Amsterdam.
28. Elbashir, N.O. and **Eljack F.T.** (2010). "A Method to Design an Advanced Gas-to-Liquid Technology Reactor for Fischer-Tropsch Synthesis". *Proceedings of the 2nd Annual Gas Processing Symposium - Advances in Gas Processing Book Series (Volume 2)*, pp. 369 – 377, Elsevier 2010, Amsterdam
29. **Eljack F.T.**, Solvason C.C., Chemmangattuvalappil N., Eden M.R. (2007): "A Property Based Design Approach for Simultaneous Optimization of Product and Process Needs", *Proceedings of 6th European Congress of Chemical Engineering*.
30. **Eljack F.T.**, Eden M.R. (2007): "A Visual Approach to Molecular Design using Property Clusters and Group Contribution", *Computer Aided Chemical Engineering* 24. CD Issue.
31. **Eljack F.T.**, Eden M.R., Kazantzi V., El-Halwagi M.M. (2006): "Property Clustering and Group Contribution for Process and Molecular Design", *Computer Aided Chemical Engineering* 21A, pp. 907-912.
32. **Eljack F.T.**, Eden M.R., Kazantzi V., El-Halwagi M.M. (2006): "Property Clustering and Group Contribution for Process and Molecular Design", PSE 2006/ESCAPE-16, Garmisch-Partenkirchen, Germany.
33. **Eljack F.T.**, Eden M.R., Kazantzi V., El-Halwagi M.M. (2005): "Combining Group Contribution and Property Clustering Techniques for Visual Solution of Process and Molecular Design Problems", Paper 242r, AIChE Annual Meeting 2005, Cincinnati, OH. **CAST Directors' Award for Best Poster.**
34. **Eljack F.T.**, Cummings R.M., Abdelhady A.F., Eden M.R., Tatarchuk B.J. (2005): "Process Integration and Optimization of Logistical Fuels Processing for Hydrogen Production", ESCAPE-15, Barcelona, Spain.

Books and/or Book Chapters:

35. *Book chapter:* **Eljack, Fadwa**, Molecular Property Clustering Techniques. In: "Tools for Chemical Product Design: From Consumer Products to Biomedicine". Martín M, Eden MR, Chemmangattuvalappil (Editors). Elsevier; 2016.
36. Al-Marri, M. and **Eljack F.** (editors). *Advances in Gas Processing – Volume 4: Proceedings of the 4th International Gas Processing Symposium*. Elsevier 2015, Amsterdam
37. Benyahia, F. and **Eljack, F.** (editors). *Advances in Gas Processing - Volume 2: Proceedings of the 2nd Annual Gas Processing Symposium*. Elsevier 2010, Amsterdam.

Select Conference/Workshop/Forum Attendance and Presentations:

Presentations/Conference attendance

- Fahd M. Mohammed, Monzure-Khoda Kazi, Ahmed AlNouss, and **Fadwa T. Eljack** (2015). "Tracking of Flare Streams Emissions and Tax Implication during Process Abnormal Situations", paper 556e, Oral presentation in 2015 AIChE Annual Meeting, November 8 – 13, Salt Lake City, Utah.
- Monzure-Khoda Kazi, **Fadwa T. Eljack** (2015). "Energy Integration Alternatives for Effective Use of Waste Heat Associated with Flaring during Abnormal Situation", paper 148c, Oral presentation in 2015 AIChE Annual Meeting, November 8 – 13, Salt Lake City, Utah.
- Ha Dinh, Shujing Zhang, Qiang Xu, **Fadwa T. Eljack**, Mahmoud M. El-Halwagi (2015). "Pressure-Driven Dynamic Simulation for Flare Minimization and Greenhouse Gas Reduction during an Ethylene Plant Startup", paper 88d, Oral presentation in 2015 AIChE Annual Meeting, November 8 – 13, Salt Lake City, Utah
- Ahmed AlNouss, Monzure-Khoda Kazi, Fahd M. Mohammed, **Fadwa T. Eljack** (2015). "Importance of Process and Flaring Data and its Analysis for the Management of Abnormal Situations", Poster presentation in *My Gateway to Research Event, May 2015*, Qatar University.
- Monzure-Khoda Kazi, Ahmed AlNouss, **Fadwa T. Eljack** (2015). "Sustainable Approaches for Abnormal Situation Management", Oral presentation in *My Gateway to Research Event, May 2015*, Qatar University.
- Ahmed AlNouss, **Fadwa T. Eljack**, Monzure-Khoda Kazi and Fahd M. Mohammed (2015). "Importance of Process and Flaring Data and Its Analysis for the Management of Abnormal Situations: An Ethylene Process Case Study", paper 48c, 2015 AIChE Spring Meeting, Austin, 2015.
- Monzure-Khoda Kazi, Ahmed AlNouss, Fadwa T. Eljack (2015). "Flare Mitigation Approach during Abnormal Process Operations By Integrating Thermal Membrane Distillation Networks and Cogeneration Unit for an Existing Process Plant", Oral presentation in AIChE 2015 Spring Meeting, Austin, Texas.
- **Eljack, Fadwa T.**, and Monzure-Khoda, Kazi (2015). " Sustainable Approaches for Abnormal Situation Management", Energy and Water Security Workshop, February 15, 2015 at Hamad Bin Khalifa University (HBKU), Doha, Qatar.
- Mohammed, F., Kazi, M, AlNouss, A., and **Eljack, F.** (2015). "Tracking of GHG Emissions and Tax Implication During Normal/Abnormal Situations – Ethylene Process Base Case Industrial Application." 4th International Gas Processing Symposium, October 27, 2014, Doha, Qatar
- Monzure-Khoda Kazi, Fahd M. Mohammed and **Fadwa T. Eljack** (2014) "Optimal Sizing of Cogeneration (COGEN) System to Manage Flares from Uncertain Sources during Abnormal Process Operations", paper 153b, 2014 Annual Meeting, Atlanta, Nov 16 – 21, 2014.
- Ha Dinh, Shujing Zhang, Yiling Xu, Qiang Xu, **Fadwa T. Eljack** and Mahmoud El-Halwagi (2014) "Dynamic Simulation Targeting Emission and GHG Reduction Under Abnormal Operations: Start-up of an Ethylene Plant By Total Recycle and Intermediate Storage", paper 153 c, 2014 Annual Meeting, Atlanta, Nov 16 – 21, 2014.
- Fahd M. Mohammed, Monzure-Khoda Kazi, **Fadwa T. Eljack** and Ahmed AlNouss (2014). "Assessing the Environmental Impact of a Flare Minimization Approach Using CO2 Emissions and Wobbe Index Calculator – an Ethylene Process Case Study", 153a, 2014 Annual Meeting, Atlanta, Nov 16 – 21, 2014.
- Kamrava, S., **Eljack,F.***, Gabriel, K., and El-Halwagi, (2014) "A Multi-Period Process Integration to the Management of Process Flares with Consideration of Fuel Substitution and Cogeneration Systems", AIChE Spring Meeting, 2014, March 30 – April 3, 2014, New Orleans, USA.
- Dinh, H., Zhang, S., Xu, Q., **Eljack, F.**, Kamrava, S. and El-Halwagi, M.(2014)"Flare Emission and Greenhouse Gas Reduction Study during an Ethylene Plant Startup on Recycle through Dynamic Simulation and Process Optimization", AIChE Spring Meeting, 2014, March 30 – April 3, 2014, New Orleans, USA.
- Kamrava, S., **Eljack,F.***, and El-Halwagi (2014) "Managing Flares during Abnormal Process Operations via design of Co-gen System of Discontinuous Sources", Gas and Fuels Research Initiative – Shale Gas Monetization March 26 – 28, 2014, La Torretta, USA.
- **Eljack, F.**, et al. (2014) "Co-gen for Flare Reduction during Abnormal Situation: A Perspective for Qatari Industry", e-Poster, 7th International Petroleum Conference (IPTC), Doha, Qatar.
- Eljack, F. (2014). Abnormal Situation Managemet in Gas Processing Facilities. Shale Gas Monetization Short Course and Workshop. Gas and Fuels Research Initiative, La Torreta, USA. **Keynote speaker.**
- **Eljack, F.**, et al. (2013): "Managing Process Flares due to Abnormal Situation via Design of Co-gen System of Discontinuous Sources", Qatar Foundation Annual Research Conference (QF-ARC), Poster, Nov 22-23, Doha, Qatar.
- Dinh,H., Zhang, S., Xu, Q., **Eljack, F.**, Kamrava, S., El- Halwagi, M. (2013): "A Generic Approach of Using Dynamic Simulation for Emission Reduction under Abnormal Operations: Scenario Study of An Ethylene Plant Startup with Sulfur Recovery Unit", AIChE Annual Meeting, San Francisco, USA.

- **Eljack, F.**, et al. (2013): "A Process-Integration Framework for Abnormal Situation Management (ASM): A Systematic Approach with Application to Qatar's Industrial Needs and Opportunities", 2013 Spring AIChE Meeting, Technology Advancement for Industrial Flare Minimization and Modeling Session, paper 64b.
- **Eljack F. T.**, Elmalik E. E., Elbashir N.O., and El-Halwagi M. M. (2012): "Energy optimization of a Novel FT-SCF technology", Paper 371, International Symposium Supercritical Fluids (ISSF), San Francisco, USA.
- **Eljack, F.T.** (2011). "Design of Novel Fischer-Tropsch Reactor Technology for Non-conventional Reaction Media", CENG Research Day – Smart Design Session, Qatar University, March 2011. (oral Presentation)
- Abbas M., **Eljack F. T.**, Elmalik E. E., Mogalicherla A. K. (2011): "Simulation of a Typical and An Advanced Fischer Tropsch Reactor Technology", Paper 620I, AIChE Annual Meeting, USA.
- Hamad, N., Nicola, S., Elmalik, E., Mogalicherla, Eljack, F. (2010): "Simulation of an Advanced Fischer Tropsch Reactor Technology", 2010 AIChE Spring Meeting, paper 570ap, San Antonio, USA
- Elbashir, N.O. and **Eljack F.T.** (2009). "A Method to Design an Advanced Gas-to-Liquid Technology Reactor for Fischer-Tropsch Synthesis". 2nd Annual Gas Processing Symposium, January 2009, Doha, Qatar
- **Eljack, F.** and Eden, M. (2008). Preliminary Study on the Inclusion of Inherent Safety Principles using Property Design Framework. 2008 AIChE Annual Meeting, Paper 372f, Philadelphia, USA
- **Eljack, F.** and Eden, M (2008). Incorporating Inherent Safety Principles in Design via Property Design Platform. 2008 AIChE Annual Meeting, Paper 578t, Philadelphia, USA.
- Chemmangattuvalappil N.G., Solvason C.C., **Eljack F.T.**, Eden M.R. (2008): "Enhanced Algebraic Property Clustering Technique for Molecular Synthesis", *Computer Aided Chemical Engineering* 25, Paper 386.
- **Eljack F.T.**, Solvason C.C., Chemmangattuvalappil N., Eden M.R. (2007): "A Property Based Approach for Simultaneous Process and Molecular Design", *Proceedings of 1st International Symposium on Sustainable Chemical Product and Process Engineering*.
- **Eljack F.T.**, Solvason C.C., Chemmangattuvalappil N., Eden M.R. (2007): "A Property Based Design Approach for Simultaneous Optimization of Product and Process Needs", *Proceedings of 6th European Congress of Chemical Engineering*.
- Solvason C.C., **Eljack F.T.**, Eden M.R. (2007): "Integrating Mixture Design within the Property Clustering Framework", *Proceedings of 6th European Congress of Chemical Engineering*.
- **Eljack F.T.**, Solvason C.C., Eden M.R., Kazantzi V., El-Halwagi M.M. (2006): "Property Clusters and Group Contribution for Simultaneous Process and Molecular Design", Paper 303o, AIChE Annual Meeting 2006, San Francisco, CA.
- **Eljack F.T.**, Eden M.R., Kazantzi V., El-Halwagi M.M. (2006): "Group Contribution and Property Clustering for Simultaneous Process and Molecular Design", Auburn University Graduate Student Research Forum, Auburn, AL.
- **Eljack F.T.**, Abdelhady A.F., Eden M.R., Gabriel F. B., Qin X., El-Halwagi M. M. (2005): "Targeting Optimum Resource Allocation using Reverse Problem Formulations and Property Clustering Techniques", Symposium on Modeling Complex Processes, Texas A&M University.
- **Eljack F.T.**, Cummings R.M., Eden M.R., Tatarchuk B.J. (2005): "Process Integration and Optimization of Logistical Fuels Processing for Hydrogen Production", Symposium on Modeling Complex Processes, Texas A&M University.
- **Eljack F.T.**, Abdelhady A.F., Eden M.R., Gabriel F., Qin X., El-Halwagi M.M. (2004): "Reverse Problem Formulations and Property Clustering Techniques for Targeting Optimum Resource Allocation", Paper 403t, AIChE Annual Meeting 2004, Austin, TX, USA.

Workshops/Seminars

- "Interactive Lectures", March 2016. Office of Faculty Institutional Development (OFID), Qatar University.
- Water and Energy Security Workshop, (February 2015). Hamad bin Khalifa University, Doha, Qatar. (Attended and panelist)
- "*Implementation of Inquiry Guided Teaching to Core Departmental and Project Based Courses*" (May 2014). (Delivered course) Dr. Fadwa Eljack and Dr. Mert Atilhan, OFID, Qatar University.
- "Gas and Fuels Research Initiative – Shale Gas Monetization, Potential Opportunities in the US and Lessons Learned from the Qatari Experience with Natural Gas" (March 2014). 3-Day short Course and Workshop, La Torreta, USA.
- "Energy 4 Me" Workshop (September 2013). 2013 Annual Technical Conference, New Orleans, USA.
- "The Outlook for Energy: A View to 2040" (March 2013). Mr. Roland Moreau with ExxonMobil's Upstream Research Company in Houston and Vice President for ExxonMobil Research Qatar Limited in Doha
- Developing an Advance Safety Culture – Non-compliance and the Just and Fair Culture" (December, 2012). Mr. Patrick Hudson, SPE Distinguished Lecture Series, Doha, Qatar.
- Carbon Capture and Storage: Horizon and Challenges Workshop (October 2012). 2-day workshop, Gas Processing Center, Qatar University.

- "Best Practices in Faculty Advising" (February 2012). 3rd OFID Days, Dr. Fadwa Eljack, Qatar University. (Delivered)
- "Active and Cooperative Learning" Workshop (May 2011), Prof. Jeff Froyed. (Organizer and attendee)
- *Oil Refining Workshop (January 2011). 3-day workshop by Cosmo Oil, Japan.*
- *LNG Technology Workshop (January 2009). 2nd Annual Gas Processing Symposium, Mr. Rob Nagelvoort. Doha, Qatar*
- *Understanding Natural Gas Hydrates Training Course (March 2009), Gas Processing Center Training. Professor. John Carroll, Doha, Qatar.*
- Web-based Assessment Management System Demo Workshop (April 2009). Qatar University.
- Assessment Plan Workshop, College of Education (April 2009). Qatar University.
- Introduction to Hazard & Operability Study - HAZOP (May 2008). Gas Processing Center Training, Doha, Qatar.
- ABET Best Assessment Processes Symposium (April 2008). Hosted by Gloria Rogers, at Atlanta GA, USA. Two-day symposium.
- Safety Short Course (March 2008), Gas Processing Center Training, Doha, Qatar.
- Banner training for Faculty (January 2008). Qatar University, Doha, Qatar
- *Plant wide Process Control Training Course (December 2007), Gas Processing Center Training. Professor. Sigurd Skogestad, Doha, Qatar.*
- *Course Portfolio Workshop (October 2007). Two-day workshop on the development of course files. Dr. Allen, Qatar University. (attendee)*

Conference Attendance:

- Water and Energy Workshop, Hamad Bin Khalifa University, Doha, Qatar, Feb 15-17, 2015 Presented, and panelist
- 2014 AIChE Annual Meeting, Atlanta, USA, Nov 2014, Presenter, Session Chair
- 4th International Gas Processing Symposium, Doha, Qatar, Oct 2014, Technical Program Committee (Chair), Organizer, contributed paper
- Engineering Leaders 2014 Conference Doha, Qatar, Nov 2014, Organizer, technical program committee, session chair
- 8th International Conference on Foundations of Computer-Aided Process Design (FOCAPD – 2014), Cle Elum, USA, July 2014, Presented, contributed paper, co-chaired session
- International Symposium on Advances in Chemical Engineering and Sciences, Doha, Qatar, May 2014, Attendee
- 2013 Spring Meeting and 9th Global Congress on Process Safety, New Orleans, USA, April 2014, Presented
- Short Course and Workshop "Gas and Fuels Research Initiative – Shale Gas Monetization, Potential Opportunities in the US and Lessons Learned from the Qatari Experience with Natural Gas", La Torreta, USA, Mar 2014, Invited Keynote Speaker
- 7th International Petroleum Technical Conference (IPTC), Doha, Qatar, Jan 2014, Presenter, Organizer (SPE-Subcommittee)
- Qatar Foundation Annual Research Conference (QF-ARC'13), Doha, Qatar, Nov 2013, Presenter
- 2013 AIChE Annual Meeting, San Francisco, USA, Nov 2013, Presenter, Session Co-chair
- 10th Natural Gas Conversion Conference, Doha, Qatar, Mar 2013, Conference Vice-chair
- World Congress on Engineering Education, Doha, Qatar, Jan 2013. Attendee
- 10th International Symposium on Supercritical Fluids, San Francisco, USA, May 2012, Presenter
- College of Engineering Research Day – Smart Design Session, Doha, Qatar, March, 2011, Presenter
- 2nd Annual Gas Processing Symposium, Doha, Qatar, Jan 2010, Symposium Chair, Presenter
- 2nd Doha Engineering and Technology Forum: Industrial Efficiency and Greenhouse Gas Emissions. Doha, Qatar, Mar 2009, Attendee
- 7th Doha Gas Conference, Doha, Qatar, Mar 2009. Attendee
- 1st Annual Gas Processing Symposium, Doha, Qatar, Jan 2009, Symposium Chair
- 2008 AIChE Annual Meeting, Philadelphia, USA, Nov 2008, Presenter
- ABET Best Assessment Processes Symposium, Atlanta, USA, Apr 2008. Attendee
- 6th Doha Conference on Natural Gas, Doha, Qatar, Nov 2007, Attendee