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RESEARCH AREAS OF INTEREST

- Heat transfer, computational flow dynamics, optical and kinetics analysis of two-phase, turbulent, unsteady, chemically reacting flows of radiation heat transfer driven thermochemical processes.
- Design, manufacture and performance testing of novel energy systems and auxiliary machineries for the production of various fuels, commodities, steam and power with zero or significantly reduced emission footprint.
- Heat transfer driven dynamic control mechanisms to enable robust operation of solar reactors/receivers.
- Advanced energy systems analysis and system integration for enhanced utilization of fuel and waste heat.

EDUCATION

Ph.D. in Mechanical Engineering, University of Washington, WA, United States, December 2005.
Dissertation: Energy, Material and Emission Flow Models of the U.S. Chemical Industry.
Advisor: Barry I. Hyman

M.S. in Mechanical Engineering, Stanford University, CA, United States, June 2002.
Focus: Fossil fuel combustion and NO_x emission control at elevated pressures via reburning.
Advisor: Tom C. Bowman

M.S. in Nuclear Sciences, Ege University, Izmir-Turkey, June 1998.
Thesis: Determination of ²¹⁰Po by electro chemical deposition method, and determination of uranium, thorium and potassium by gamma spectroscopy method.
Advisor: Güngör Yener

B.S. in Applied Physics, Ege University, Izmir-Turkey, June 1995.

HONORS AND AWARDS

1. Thesis co-advisor of finalist students for the 2018 Agoria Prize by the Agoria Vlaanderen for the best MSc thesis award in Flanders for Innovation and Technology, Belgium. *Thesis subject: design of carbon deposition self-cleaning mechanism for a solar reactor per physics of carbon agglomeration.*
2. Thesis co-advisor of finalist students for the 2018 Engineering Design prize by the IE-Net Engineering Network Association of Flanders and Brussels, Belgium. *Thesis subject: design of heat exchanger coupled iris mechanism for a solar reactor to control light entry.*
3. Encon Energy Prize winner of year 2016, supervisor to the best Masters thesis in Flanders, awarded by Encon, presented by the Belgian Minister of Energy Bart Tommelein, November 2016, Belgium. *Thesis subject: design of lotus flower inspired iris mechanism for a solar reactor to control light entry.*
4. ASME Fellow, April 2015.

5. Outstanding Reviewer Award, ASME Heat Transfer Division Journal of Thermal Science and Engineering Applications, November 2013.
6. Best Paper Award in “Renewable Energy” at the 9th International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics for paper titled “Numerical and optical analysis of weather adoptable solar reactor.”, July 2012.
7. Best Paper Award in “Renewable Energy” at the 8th International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics for paper titled “An overview of solar thermal cracking of natural gas: Challenges and solutions towards commercialization.”, July 2011.
8. 1st prize, 2011 VI National Instruments competition “NI Arabia Musabaka” with project titled “Design, manufacturing, and testing of an aperture mechanism for a solar reactor to make it run with no –or minimum– losses under any weather conditions”, National Instruments Arabia, May 2011.
9. The 2010 Texas A&M University Association of Former Students College-level Distinguished Achievement Teaching Award, January 2011.
10. Qatar Foundation Achiever, Qatar Foundation, April 2011.
11. 2010 Best Energy and Environment Research Program of the Year Award by Qatar Foundation, December 2010.
12. 1st place in 3D Visualization Development Competition 2010 at Texas A&M University at Qatar Immersive Visualization Facility, April 2010.
13. 2010 Excellence in Environmental Technology Award. Offshore Arabia 2010, The Regional Clean Sea Organization (RECSO), March 2010, Dubai–UAE.
14. 3rd prize among 196 posters in the poster competition for the Best Poster Zdenek Burian Memorial Award at the 12th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES’09), May 2009, Rome–Italy.
15. Visiting professorship, ETH-Zurich, Department of Mechanical and Process Engineering, 2006 Fall, Zurich–Switzerland.
16. Research Assistantship, University of Washington, Mechanical Engineering Department, 2004–2005, Seattle–WA.
17. Pacific Northwest National Laboratory (PNNL) fellowship, 2003 summer, Richland, WA.
18. Teaching Assistantship, University of Washington, Mechanical Engineering Department, 2002–2004, Seattle–WA.
19. Research Assistantship, Stanford University, Mechanical Engineering Department, 2000–2002, San Francisco–CA.
20. Turkish Higher Education Council (YÖK) scholarship to study abroad, 1999.
21. Marquis Who is Who in America: 2007+, Marquis Who is Who in Science and Engineering: 2011–2012 (11th Edition), IBC’s Top 100 Engineers of 2011.

INVITED TALKS

1. “Hybrid Utilization of Natural Gas and Sunshine for Tri-generation of Fuels Power and Commodities for a Promising New Industrial Revolution” **Keynote speech**, 4th International Conference on Fossil and Renewable Energy (F&R Energy-2020), February 2020, Houston, Texas.

2. “Sunshine to fuels, power, and commodities for promising new industrial transition” **Keynote speech**, *Frontiers in Green and Sustainable Energy Conference (Green Energy 2019)*, October 2019, Toronto, Canada.
3. “Mechanical and Aerospace Engineers’ Roles in Promising New Industrial Revolution” **Keynote speech**, *Modern Practices in Mechanical and Aerospace Engineering (Mech Aero 2019)*, September 2019, San Francisco, California.
4. “Reactor hot spot, temperature un-uniformity, and temperature instability issues: promising solutions via creative designs”, **Invited talk**, Xi'an Jiaotong University, School of Energy and Power Engineering, December 2018, Xi'an, China.
5. “Carbon agglomeration and deposition in solar reactors and promising design solutions for reactor clogging”, **Invited talk**, Northwestern Polytechnic University, School of Mechanical Engineering, December 2018, Xi'an, China.
6. “Design and experimental testing of a combustion nozzle for use with a solar reactor”, **Keynote Speech**, 20th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (*PRES 2017*), August 2017, Tianjin, China.
7. “Challenges in design and control of solar reactors”, **Invited talk**, Xi'an Jiaotong University, School of Energy and Power Engineering, August 2017, Xi'an, China.
8. Hydrogen Speedup Conference 2017, **Opening Speech**, Delft University of Technology, Process and Energy Department, June 2017, Delft, Nederland.
9. “Is hydrogen economy within our reach”, **Panelist**, Delft University of Technology, Process and Energy Department, *Hydrogen Speedup Conference 2017*, June 2017, Delft, Nederland.
10. “A novel hybrid solar reactor technology for clean production of hydrogen on 24/7 basis”, **Invited talk**, Delft University of Technology, Process and Energy Department, *Departmental seminar*, June 2017, Delft, Nederland.
11. “Making fuel while the sun shines”, **Keynote speech**, 14th World Renewable Energy Congress (*WREC XIV*), June 2015, Bucharest, Romania.
12. “Fuels from sunshine via solar thermochemical processing”, **Keynote speech**, *Nederland Process Symposium (NPS 2014)*, November 2014, Utrecht, Nederland.
13. “Era of transition towards renewable energy based economy via clean production processes for power, fuels, and commodities”, **Invited talk**, 3rd International Conference on Energy Process Engineering – Transition to Renewables (*ICEPE 2013*), June 2013, Frankfurt, Germany. (Note: I could not make the presentation due to a last minute time conflict with an urgent commitment, but my colleague Dr. Christian Sattler of DLR-Cologne graciously presented it on my behalf).
14. “Tri-generation of syngas, hydrogen, and carbon black with zero emissions: Challenges and solutions towards commercialization”, **Keynote Speech**, 10th Natural Gas Symposium (*NGCS10*), March 2013, Doha, Qatar.
15. “Women energized: Making a difference in the classroom, lab and beyond”, 2013 Global Marathon (in conjunction with International Woman’s day), Women in Engineering & Technology: Inspire. Inform. Change the World. A program of the U.S. National Engineers Week Foundation, March 2013, live online presentation.
16. “Smart solar reactor for emission-free production of solar fuels and commodities on a 24/7/365 basis”, *Mechanical Engineering Department Seminar*, Texas A&M University, November 2012, College Station, TX.
17. “Hydrogen production with zero emission footprint: Challenges and solutions towards commercialization”, **Keynote Speech**, *NATO Advanced Research Workshop (ARW)*, October 2012, Georgia.

18. “Catalytic solar thermochemical processing for enhanced heat transfer and emission-free production of hydrogen”, **Keynote Speech**, 15th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (*PRES 2012*), Prague, August 2012.
19. “Smart solar reactor for emission-free production of hydrogen”, *Plataforma Solar Almeria of CIEMAT (Energy, Environment and Technological Research Center), Hydrogen and Process Heat Department*, May 10, 2012, Almeria, Spain.
20. “Smart solar reactor for emission-free production of hydrogen”, *Swiss Federal Institute of Technology Zurich (ETH-Zurich), Institute of Energy Technology-Professorship of Renewable Energy Carriers*, May 7, 2012, Zurich, Switzerland.
21. “How to make natural gas cleaner?”, **TED** Summit 2012 Opening Night, April 16, Doha, Qatar.
22. “Smart solar reactor for solar fuels and solar commodities production with zero or near to zero emission footprint”, *French National Center for Scientific Research (CNRS) – PROMES Solar Energy Facilities*, December 19, 2011, Odeillo, France.
23. “Research on new environmentally clean technology”, *Fighting Climate Change: the Role of Diplomacy conference (<http://www.festivaldelladiplomazia.it>)* under the patronage of Messrs Franco Frattini, the Italian Minister of Foreign Affairs, and Gianni Alemanno, the Mayor of Rome, October 14, 2011, Rome, Italy.
24. “Aero-shielded solar cyclone reactor for efficient production of hydrogen and carbon black”, *DLR Solar Seminar, German Aerospace Center (DLR)*, August 18, 2011, Cologne, Germany.
25. “Catalytically promoted natural gas pyrolysis using a smart solar reactor”, *Technical University of Dresden*, August 16, 2011, Dresden, Germany.
26. “Smart solar reactor for new generation industrial processing”, *Fraunhofer Institute – IWS*, August 15, 2011, Dresden, Germany.
27. “Emission-free production of hydrogen and carbon black in an aero-shielded smart solar reactor”, *U.S. Department of Energy (DOE)*, August 10, 2011, Washington D.C.
28. “CFD analysis and 3D visualization of two-phase turbulence flow in aero-shielded solar cyclone reactor”, *Department of Chemical Surface and Reaction Technology, Fraunhofer Institute – IWS*, October 1, 2010, Dresden, Germany.
29. “Emission-free production of hydrogen and carbon nanotubes in an aero-shielded smart solar reactor”, *Stanford University Energy Resources Engineering, Monthly Seminar*, May 25, 2010, San Francisco.
30. “Environmentally friendly energy production via solar energy”, *Georgetown University School of Foreign Service in Qatar*, Model United Nations Education City visit, January 29, 2010, Doha, Qatar.
31. “Solar thermochemical technology for hydrogen, carbon nano-materials and metals production”, *Qatar University, Department of Mechanical & Industrial Engineering Research Committee Monthly Seminar*, December 9, 2009, Doha, Qatar.
32. “Emissions from the manufacturing processes and on-site steam & power generation in the U.S. Chemical Industry”, *Stanford Global Climate Change and Energy Project (GCEP) workshop*, April 15, 2008, San Francisco.
33. “Energy flow model of hydrogen production in the US Chemical Industry vs. solar hydrogen production”, *Weizmann Institute of Science (WIS) Solar Research Unit*, March 26, 2008, Rehovot, Israel.

34. “Cracking of natural gas into hydrogen and carbon using concentrated solar energy”, *Indian Institute of Technology (IIT)* – Madras, January 8, 2008, India.
35. “Cracking of natural gas into hydrogen and carbon using concentrated solar energy”, *Indian National Institute of Technology (NIT)* – Tiruchirappalli, January 10, 2008, India.

INVENTION DISCLOSURES

1. **Ozalp, N.** Invention disclosure ID# TAMUS 3038 “Aero-Shielded Solar Cyclone Reactor” was submitted to Texas A&M University, College Station, Texas, Office of Technology Commercialization (OTC) on November 17, 2009. Memorandum of understanding on the commercialization of this technology was signed between Qatar Science & Technology Park (QSTP), Fraunhofer Institute of Germany and Texas A&M in August 2010. Phase I completed in December 2012.
2. **Ozalp, N.** Invention disclosure ID# TAMUS 3039 “Solar Reactor with Camera-like Aperture and Moving-wall Cavity” was submitted to Texas A&M University, College Station, Texas, Office of Technology Commercialization (OTC) on November 17, 2009. Memorandum of understanding on the commercialization of this technology was signed between Qatar Science & Technology Park (QSTP), Fraunhofer Institute of Germany and Texas A&M in August 2010.

PUBLICATIONS

*(Student/research engineer co-authors are denoted by *, postdoctoral researchers are denoted by §, remaining authors are colleagues)*

Book

1. Oosthuizen, P. and **Ozalp, N.** An Introduction to Single Phase Convective Heat Transfer Analysis. 2nd Edition. Taylor & Francis. *Under preparation.*

Book chapter

1. **Ozalp, N.**, (2013). Chapter 3: Hydrogen production with zero emission footprint: challenges and solutions towards commercialization. Black Sea Energy Resource Development and Hydrogen Energy Problems. NATO Science for Peace and Security Series – C: Environmental Security. Published by Springer. DOI: 10.1007/978-94-007-6152-0.

Featured articles

1. **Ozalp, N.**, Abedini-Najafabadi, H. (2019). Iterative design of solar reactor for hot spot reduction and enhanced temperature uniformity. Science Trends – Energy & Matter featured research. *January issue, online dissemination.*
2. **Ozalp, N.**, Abedini-Najafabadi, H. (2018). Predictive controller for temperature regulation of a solar receiver. Advances in Engineering – Mechanical Engineering featured research. *May issue, online dissemination.*
3. **Ozalp, N.**, Sattler, C., Klausner, J., Miller, J. (2014). Fuel from sunshine. ASME Mechanical Engineering Magazine. No. 10-136, October issue, p. 38-43.

Refereed Journal Articles

(Nesrin Ozalp is the corresponding author in all, except for #1 to 5, #38, #53, #54)

58. Abedini-Najafabadi, H., **Ozalp, N.**, Epstein, M., Davis, R. (2020). Solar carbothermic reduction of dolime as a promising option to produce magnesium and calcium. *Industrial & Engineering Chemistry Research, in print*, doi: 10.1021/acs.iecr.9b04856.
57. Abuseada, M.*, **Ozalp, N.** (2020). Numerical characterization of a high flux solar simulator using forward and inverse methods. *ASME Journal of Heat Transfer, Vol. 142, p. 0221051-02210511.*
56. Ophoff, C.*, **Ozalp, N.**, Moens, D. (2019). Experimental performance comparison and optical characteristics of aperture mechanisms for solar cavity receivers. *Solar Energy, Vol. 188, p. 66-82.*
55. Abedini-Najafabadi, H., **Ozalp, N.**, Ophoff, C.*, Moens, D. (2019). An experimental study on temperature control of a solar receiver under transient solar load. *Solar Energy, Vol. 186, p. 52-59.*
54. Van Loo, K.*, Lapauw, T., **Ozalp, N.**, Ström, E., Lambrinou, K., Vleugels, J. (2019). Compatibility of SiC and MAX phase-based ceramics with a KNO₃-NaNO₃ molten solar salt. *Solar Energy Materials and Solar Cells, Vol. 195, p. 228-240.*
53. Zhang, Y.*, Chen, Y., **Ozalp, N.**, Xie, G. (2019). LBM modelling of unsteady flow past and through permeable diamond-shaped cylinders: Effects of aspect ratios and Darcy numbers. *International Journal of Numerical Methods for Heat & Fluid Flow, Vol. 29(9), p. 3472-349.*
52. Abuseada, M.*, Ophoff, C.*, **Ozalp, N.** (2019). Characterization of a new 10 kW_e high flux solar simulator via indirect radiation mapping technique. **Invited paper** for the ASME 2018 Energy Sustainability conference Special Issue on Concentrated Solar Chemistry, Fuels and Power. *ASME Journal of Solar Energy Engineering, Vol. 141, p. 0210051-02100514.*
51. Hyman, B., **Ozalp, N.**, Varbanov, P.S., Fan, Y.V. (2019). Modeling energy flows in industry: general methodology to develop process step models. *Energy Conversion and Management, Vol. 181, p. 528-543.*
50. Abuseada, M.*, **Ozalp, N.**, Ophoff, C.* (2019). Numerical and experimental investigation of heat transfer in a solar receiver with a variable aperture. *International Journal of Heat and Mass Transfer, Vol. 128, p. 125-135.*
49. Uddin, M.D.[§], **Ozalp, N.**, Heylen, J.*, Ophoff, C.*. (2018). A new approach for fuel injection into a solar receiver/reactor: Numerical and experimental investigation. **Invited paper** for the PRES 2017 conference Special Issue. *Frontiers of Chemical Science and Engineering, Vol. 12(4), p. 683-696.*
48. **Ozalp, N.**, Epstein, M., Davis, R., Ophoff, C.*, Vinck, I.* (2018). A critical assessment of present hydrogen production techniques: Is solar cracking a viable alternative? **Invited paper** for the Themed Issue on Energy and Environmental Engineering: Hydrogen Engineering, *Current Opinion in Chemical Engineering, Vol. 21, p. 111-115.*
47. Abedini-Najafabadi, H., **Ozalp, N.** (2018). An advanced modeling and experimental study to improve temperature uniformity of a solar receiver. *Energy, Vol. 165, p. 984-998.*
46. Shilapuram, V., Bagchi, B., **Ozalp, N.**, Davis, R. (2018). Statistical modeling of hydrogen production via carbonaceous catalytic methane decomposition. *ASME Journal of Energy Resources Technology, Vol. 140, p. 0720061-0720068.*
45. Abedini-Najafabadi, H., **Ozalp, N.** (2018). Aperture size adjustment using model based adaptive control strategy to regulate temperature in a solar receiver. *Solar Energy, Vol. 159, p. 20-36.*
44. Ophoff, C.*, **Ozalp, N.** (2017). A novel iris mechanism for solar thermal receivers. *ASME Journal of Solar Energy Engineering, Vol. 139, p. 0610041-06100410.*

43. Heylen, J.*, **Ozalp, N.** (2017). Design and experimental testing of a combustion nozzle for use with a solar reactor. *Chemical Engineering Transactions, Vol. 61, p. 1489-1494.*
42. Abedini-Najafabadi, H.[§], **Ozalp, N.** (2017). Development of a control model to regulate temperature in a solar receiver. *Renewable Energy, Vol. 111, p. 95-104.*
41. Shilapuram, V., **Ozalp, N.** (2017). Hydrogen production via carbon catalyzed methane decomposition. *ASME Journal of Energy Resources Technology, Vol. 139, p. 0120051-120058.*
40. Chien, M.H.*, **Ozalp, N.**, Morrison, G. (2016). Effect of particle type on cyclone formation inside a solar reactor. *Frontiers in Mechanical Engineering, Vol. 2, p. 1-10.*
39. Rajan, A.*, Abouseada, M.*, Manghaipathy, P.*, **Ozalp, N.**, Majid, F.A.*, Salem, A.*, Srinivasa, A. (2016). An experimental and analytical study on the feasibility of SMA spring driven actuation of an iris mechanism. **Invited paper** for the PRES 2015 conference Special Issue. *Applied Thermal Engineering, Vol. 105, p. 849-861.*
38. Sourbron, M., **Ozalp, N.** (2016). Determination of heat transfer characteristics of solar thermal collectors as heat source for a residential heat pump. *ASME Journal of Solar Energy Engineering, Vol. 138(4), p. 041011-0410118.*
37. Reykers, R.*, Keersmaekers, R.*, **Ozalp, N.**, Collaert, J. (2016). Thermodynamic analysis of a novel space heating system featuring Hot Gas Water (HGW) technology. *ASME Journal of Energy Resources Technology, Vol. 138, p. 0320051-03200511.*
36. Rajan, A.*, Abouseada, M.*, Manghaipathy, P.*, Srinivasa, A., **Ozalp, N.** (2015). Feasibility of using Shape Memory Alloy (SMA) spring to facilitate actuation of a variable aperture mechanism of a solar reactor. *Chemical Engineering Transactions, Vol. 45, p. 841-846.*
35. Chien, M.H.*, **Ozalp, N.**, Morrison, G. (2015). CFD and heat transfer analysis of vortex formation in a solar reactor. *ASME Journal of Thermal Science and Engineering Applications, Vol. 7, p. 0410071-0410078.*
34. Usman, S.*, **Ozalp, N.** (2014). Numerical and optical analysis of solar level adoptable solar reactor. **Invited paper** for the Special Issue of HEFAT 2012 (9th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics). *Heat Transfer Engineering, Vol. 35, Issue 16-17, p. 1405-1417.*
33. Sarwar, J.[§], Georgakis, G.*, LaChance, R.*, **Ozalp, N.** (2014). Description and characterization of adjustable flux solar simulator for solar thermal, thermochemical and photovoltaic applications. *Solar Energy, Vol. 100, p. 179-194.*
32. Shilapuram, V.[§], **Ozalp, N.** (2014). Thermogravimetric analysis of carbon based catalysts on methane decomposition. *Chemical Engineering Transactions, Vol. 39, p. 733-738.*
31. Shilapuram, V.[§], **Ozalp, N.**, Oschatz, M., Borchard, L., Kaskel, S., LaChance, R.* (2014). Thermogravimetric analysis of activated carbons, ordered mesoporous, carbide-derived carbons and their deactivation kinetics. *Industrial & Engineering Chemistry Research (I&ECR), Vol. 53, Issue 5, p. 1741-1753.*
30. Shilapuram, V.[§], **Ozalp, N.**, Oschatz, M., Borchardt, L., Kaskel, S. (2014). Hydrogen production from catalytic decomposition of methane over ordered nanoporous carbons (CMK-3) and carbide-derived carbon (DUT-19). *Carbon, Vol. 67, p. 377-389.*
29. Menon, A.*, Asadullah, F.*, **Ozalp, N.** (2013). A new solar reactor aperture mechanism coupled with heat exchanger. *Chemical Engineering Transactions, Vol. 35, p. 751-756.*

28. **Ozalp, N.**, Ibrik, K.* , Al-Meer, M.* (2013). Kinetics and heat transfer analysis of carbon catalyzed solar cracking. **Invited paper** for the Special Issue of PRES 2012 (International Conference of Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction). *Energy – The International Journal*, Vol. 55, p. 74-81.
27. Devanuri, J.[§], **Ozalp, N.** (2013). Numerical investigation of particle deposition inside aero-shielded solar cyclone reactor: A promising solution for reactor clogging. *International Journal of Heat and Fluid Flow*, Vol. 40, p. 198-209.
26. **Ozalp, N.**, Chien, M.H.* , Morrison, G. (2013). CFD and PIV characterization of a solar cyclone reactor. *ASME Journal of Solar Energy Engineering*, Vol. 135, Issue 3, p. 031003/1-15.
25. Costandy, J.* , El Ghazal, N.* , Mohamed, M.* , Menon, A.* , Shilapuram, V.[§], **Ozalp, N.** (2012). Effect of reactor geometry on the temperature distribution of hydrogen producing solar reactors. **Invited paper** for the Special Issue of ICH2P (International Conference on Hydrogen Production). *International Journal of Hydrogen Energy*, Vol. 37, p. 16581-16590.
24. Ibrik, K.* , Al-Meer, M.* , **Ozalp, N.** (2012). Catalytic solar thermochemical processing for enhanced heat transfer and emission-free production of hydrogen. *Chemical Engineering Transactions*, Vol. 29, p. 499-504.
23. Shilapuram, V.[§], Jayakrishna, D.[§], **Ozalp, N.** (2011). Residence time distribution analysis of aero-shielded solar cyclone reactor for emission-free generation of hydrogen. *International Journal of Hydrogen Energy*, Vol. 36, p. 13488-13500.
22. **Ozalp, N.**, Toyama, A., Mohamed, M.* , AlShammasi, M.* , Roshan, D.R.* , Farghaly, A.* (2011). A smart solar reactor for environmentally clean chemical processing. *Chemical Engineering Transactions*, Vol. 25, p. 989-994.
21. **Ozalp, N.**, Toyama, A., Jayakrishna, D.[§], Rowshan, R., Al-Hamidi, Y. (2011). Effect of camera-like aperture in quest for maintaining quasi-constant radiation inside a solar reactor. *ASME Journal of Mechanical Design*, Vol. 133, Issue 2, p. 021002.
20. **Ozalp, N.**, Kanjirakat, A.[§] (2010). A CFD study on the effect of carbon particle seeding for the improvement of solar reactor performance. *ASME Journal of Heat Transfer*, December 2010, Vol. 132, Issue 12, p. 122901.
19. **Ozalp, N.**, Jayakrishna, D.[§] (2010). CFD Analysis of multi-phase turbulent flow in a solar reactor for emission-free generation of hydrogen. *Chemical Engineering Transactions*, Vol. 21, p.1081-1086.
18. **Ozalp, N.**, Jayakrishna, D.[§] (2010). CFD analysis on the influence of helical carving in a vortex flow reactor. *International Journal of Hydrogen Energy*, Vol. 35, p. 6248-6260.
17. **Ozalp, N.**, Kanjirakat, A.[§] (2010). Lagrangian characterization of multi-phase turbulent flow in a solar reactor for particle deposition prediction. *International Journal of Hydrogen Energy*, Vol. 35, p. 4496-4509.
16. **Ozalp, N.**, Shilapuram, V.[§] (2010). Step-by-step methodology of solar reactor design for emission-free generation of hydrogen. *International Journal of Hydrogen Energy*, Vol. 35, p. 4484-4495.
15. **Ozalp, N.**, Epstein, M., Kogan, A. (2010). Cleaner pathways of hydrogen, carbon nano-materials and metals production via solar thermal processing. **Invited paper** for the Special Issue of PRES 2009 (International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction). *International Journal of Cleaner Production*, Vol. 18, p. 900-907.
14. **Ozalp, N.**, Epstein, M. Kogan, A. (2009). An overview of solar thermochemical hydrogen, carbon nano-materials and metals production technologies. *Chemical Engineering Transactions*, Vol. 18, p. 965-970.

13. **Ozalp, N.**, Hyman, B. (2009). Energy allocation and energy intensity estimates for the U.S. Organic Chemicals Industry. *Chemical Engineering Transactions, Vol. 18, p.531-536.*
12. **Ozalp, N.** (2009). Energy process-step model of hydrogen production in the U.S. Chemical Industry. *ASME Journal of Energy Resources Technology, Vol. 131, Issue 2, June, p. 022601.1-022601.10.*
11. **Ozalp, N.** (2009). Utilization of heat, power and recovered waste heat for industrial processes in the U.S. Chemical Industry. *ASME Journal of Energy Resources Technology, Vol. 131, Issue 2, June, p. 022401.1-0.22401.11.*
10. **Ozalp, N.**, Kogan, A., Epstein, M. (2009). Solar decomposition of fossil fuels as an option for sustainability. *International Journal of Hydrogen Energy, Vol. 34, Issue 2, p. 710-720.*
9. **Ozalp, N.** (2008). Energy and material flow models of hydrogen production in the U.S. Chemical Industry. *The International Journal of Hydrogen Energy, Vol. 33, Issue 19, p. 5020-5034.*
8. **Ozalp, N.**, Hyman, B. (2007). Allocation of energy inputs among the end-uses in the U.S. petroleum and coal products industry. *Energy, Vol. 32, Issue 8, p. 1460-1470.*
7. **Ozalp, N.**, Hyman, B. (2006). Calibrated models of on-site power and steam production in U.S. industries. *Applied Thermal Engineering, Vol. 26, p. 530-539.*
6. **Ozalp, N.**, Hyman, B. (2006). Energy end-use model of the paper manufacturing in the U.S. *Applied Thermal Engineering, Vol. 26, p. 540-548.*
5. Hepbasli, A., **Ozalp, N.** (2003). Development of energy efficiency and management implementations in the Turkish industrial sector. *Energy Conservation and Management, Vol. 44, p. 231-249.*
4. Hepbasli, A., **Ozalp, N.** (2002). Present status of cogeneration applications in Turkey. *Energy Sources, Vol. 24, p. 169-177.*
3. Hepbasli, A., **Ozalp, N.** (2002). Development of cogeneration in Turkey. *Energy Sources, Vol. 24, p. 195-204.*
2. Hepbasli, A., **Ozalp, N.** (2002). Co-generation studies in Turkey: An application of a ceramic factory in Izmir, Turkey. *Applied Thermal Engineering, Vol. 22, p. 679-691.*
1. Hepbasli, A., **Ozalp, N.** (2001). Present status and potential of renewable energy sources in Turkey. *International Journal of Energy Sources, Vol. 23, Issue 7, p. 631-648.*

Refereed Conference Proceedings

49. Abedini-Najafabadi, H., **Ozalp, N.** (2019). Effect of carbon particle seeding as radiant absorbent for enhanced heat transfer. *ASME Summer Heat Transfer Conference (SHTC-2019)*. Paper No. HT2019-3657.
48. Ophoff, C.*, **Ozalp, N.**, Moens, D. (2019). Monte Carlo ray tracing coupled CFD modelling and experimental testing of a 1 kW solar cavity receiver radiated via 7 kW HFSS. *ASME Summer Heat Transfer Conference (SHTC-2019)*. Paper No. HT2019-3541.
47. Abuseada, M.*, **Ozalp, N.** (2019). Intensity distribution from a single-bulb solar simulator identification through inverse ray tracing. *ASME 13th Energy Sustainability Conference*. Paper No. ES2019-3860.
46. Rutten, J.*, Verschoren, J.*, **Ozalp, N.**, Ophoff, C.*, Moens, D. (2019). Design, manufacturing and experimental testing of a self-cleaning exit port mechanism for a solar reactor. *4th Thermal and Fluid Engineering Conference (TFEC-2019)*. Paper No. TFEC-2019-28516.

45. Abuseada, M.*, **Ozalp, N.**, Ophoff, C.* (2018). A two-dimensional transient heat transfer and optical analysis of a solar receiver. *16th International Heat Transfer Conference (IHTC-16)*. Paper No. IHTC16-24296.
44. Van Belle, L.*, Van Rompay, S.*, Uddin, M.D. §, **Ozalp, N.**, Vleugels, J. (2018). Design and experimental testing of a carbon feeder for a solar thermal receiver. *3rd Thermal and Fluid Engineering Conference (TFEC-2018)*. Paper No. TFEC-2018-24512.
43. Ophoff, C.*, Abedini-Najafabadi, H. §, Bogaerts, J.*, **Ozalp, N.** (2018). An overview of variable aperture mechanisms in attempt to control temperature inside solar cavity receivers. *3rd Thermal and Fluid Engineering Conference (TFEC-2018)*. Paper No. TFEC-2018-22450.
42. Ophoff, C.*, Korotunov, S.*, **Ozalp, N.** (2017). Optimization of design and process parameters for maximized and stable solar receiver efficiency. *2nd Thermal and Fluid Engineering Conference (TFEC-IWHT 2017)*. Paper No. TFEC-IWHT2017-18225.
41. Abedini-Najafabadi, H. §, Ophoff, C.*, **Ozalp, N.** (2017). Development of an optimal control strategy to regulate temperature in a solar reactor. *2nd Thermal and Fluid Engineering Conference (TFEC-IWHT 2017)*. Paper No. TFEC-IWHT2017-18224.
40. Abedini-Najafabadi, H. §, **Ozalp, N.** (2016). A dynamic heat transfer model to investigate the effect of aperture size on the temperature of a solar reactor. *8th International Symposium on Radiative Transfer*. RAD16-Paper #34.
39. Vinck, I.*, **Ozalp, N.** (2015). Thermal analysis of a novel solar thermochemical system coupled with carbon and hydrogen fuel cells. *ASME 2015 International Mechanical Engineering Congress & Exposition*. Paper No: IMECE2015-51498.
38. Sourbron, M., **Ozalp, N.** (2015). Determination of heat transfer characteristics of solar thermal collector as heat source for a residential heat pump. *ASME 2015 International Mechanical Engineering Congress & Exposition*. Paper No: IMECE2015-51461.
37. Van den Langenbergh, L.*, Ophoff, C.*, **Ozalp, N.** (2015). An iris mechanism driven temperature control of solar thermal reactors. *1st Thermal and Fluid Engineering Summer Conference (TFESC 2015)*. Paper No. TFESC-13250.
36. **Ozalp, N.**, Lipperheide, M.*, Sarwar, J. § (2015). Optimization of reactor temperature according to radiation distribution characteristics. *11th International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics (HEFAT2015)*. Paper No: 1570076395.
35. Chien, M.H.*, **Ozalp, N.**, Morrison, G. (2014). CFD and heat transfer analysis of vortex formation in a solar reactor. *ASME 2014 Fluids Engineering Summer Meeting*. Paper No: FEDSM2014-22012.
34. **Ozalp, N.** (2013). Era of transition towards renewable energy based economy via clean power production processes for power, fuels and commodities. *3rd International Conference on Energy Process Engineering – Transition to Renewables (ICEPE)*. **Invited lecture.**
33. Usman, S.*, Saleem, A.*, Menon, A.*, Zahredinne, H.*, **Ozalp, N.** (2012). Experimental testing of a variable aperture concept for solar thermochemical reactors. *Concentrating Solar Power and Chemical Energy Systems, SolarPACES 2012*.
32. Usman, S.*, **Ozalp, N.** (2012). Numerical and optical analysis of weather adaptable solar reactor. *9th International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics (HEFAT2012)*. Paper No: 1569576105. **Best Paper Award in Renewable Energy.**

31. **Ozalp, N.**, Chien, S.M.*, Morrison, G. (2012). Experimental evaluation of solar cyclone reactor via Particle Image Velocimetry (PIV). *ASME 2012 Summer Heat Transfer Conference*. Paper No: HT2012-58149.
30. **Ozalp, N.** (2012). Energy, environment, and economical advantages of solar thermal cracking of natural gas. *ASME 31st International Conference on Ocean, Offshore, and Arctic Engineering*. Paper No: OMAE2012-84222.
29. Menon, A.*, **Ozalp, N.** (2011). Optical analysis of variable aperture mechanism for a solar reactor. *ICCE 2011 International Conference on Chemical Engineering*. Paper No: IT84050.
28. Shilapuram, V. §, **Ozalp, N.**, Waheed, A.* (2011). Catalytical effect of Fluka 05120 on methane decomposition. *ICCE 2011 International Conference on Chemical Engineering*. Paper No: IT84000.
27. Abdulla, S.*, Zahreddine, H.*, El Zamli, M.*, Majid, F.A.*, Rizk, I.*, Al-Hamidi, Y., **Ozalp, N.** (2011). Design, manufacturing and testing of a camera-like aperture mechanism for a solar reactor. *ASME 2011 International Mechanical Engineering Congress & Exposition*. Paper No: IMECE2011-65814.
26. Al-Hamidi, Y., Abdulla, S.*, El Zamli, M.*, Rizk, I.*, **Ozalp, N.** (2011). Design, manufacturing and testing of an aperture mechanism for a solar reactor. *ASME 5th Energy Sustainability Conference & Fuel Cell Conference*. Paper No: ES2011-54567.
25. Mohamed, M.A.*, Attar, F.*, Soelem, R.*, **Ozalp, N.** (2011). Hydrogen production and utilization in petroleum refineries: A study of the U.S. oil and gas industry. *ASME 5th Energy Sustainability Conference & Fuel Cell Conference*. Paper No: ES2011-54752.
24. Shilapuram, V. §, **Ozalp, N.** (2011). Carbon catalyzed methane decomposition for enhanced solar thermal cracking. *ASME 5th Energy Sustainability Conference & Fuel Cell Conference*. Paper No: ES2011-54644.
23. **Ozalp, N.** (2011). An overview of solar thermal cracking of natural gas: Challenges and solutions towards commercialization. *8th International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics (HEFAT 2011)*. Paper No: 1569441867. **Best Paper Award in Renewable Energy**.
22. El Ghazal, N.*, Costandy, J.*, Mohamed, M.*, Shilapuram, V. §, **Ozalp, N.** (2011). Effect of reactor geometry on the temperature distribution of hydrogen producing solar reactors. *International Conference on Hydrogen Production (ICH2P-11)*. Paper No: 155-214-1-SM.
21. **Ozalp, N.**, Shilapuram, V. § (2011). Characterization of activated carbon for carbon laden flows in a solar reactor. *The 8th ASME-JSME Thermal Engineering Joint Conference*. Paper No: AJTEC2011-44381.
20. Almodaris, M.*, Abraham, J.J.*, Khorasani, S.*, **Ozalp, N.** (2011). Simulation of solar thermochemical hydrogen production techniques. *The 8th ASME-JSME Thermal Engineering Joint Conference*. Paper No: AJTEC2011-444387.
19. Abdalla, A.*, Jayakrishna, D. §, **Ozalp, N.**, Bouhali, O., Sheharyar, A. (2010). Three dimensional visualization of hydrogen and carbon black production in a vortex solar reactor. *2nd Annual Undergraduate Research Conference on Applied Computing*.
18. Al Akkad, B.*, Almodaris, M.*, Howard, E.*, Abraham, J.J.*, Khorasani, S.*, **Ozalp, N.** (2010). Material and energy process-step models of solar hydrogen production techniques. *ASME 4th International Conference on Energy Sustainability (ES2010)*. Paper No: ES2010-90323.
17. **Ozalp, N.**, Shilapuram, V. §, Jayakrishna, D. § (2010). Modeling of a vortex-flow reactor using N-Plug reactors approach. *ASME 4th International Conference on Energy Sustainability (ES2010)*. Paper No: ES2010-90324.

16. **Ozalp, N., Jayakrishna, D.** [§] (2010). Numerical study on the thermal interaction of gas-particle transport for a vortex flow solar reactor. *ASME 4th International Conference on Energy Sustainability (ES2010)*. Paper No: ES2010-90325.
15. **Ozalp, N., Kanjirakat, A.** [§] (2010). A CFD study on the effect of carbon particle seeding for the improvement of solar reactor performance. *ASME 4th International Conference on Energy Sustainability (ES2010)*. Paper No: ES2010-90326.
14. **Ozalp, N., Toyama, A., Jayakrishna, D.** [§], Rowshan, R., Al-Hamidi, Y. (2010). Effect of camera-like aperture in quest for maintaining quasi-constant radiation inside a solar reactor. *ASME 4th International Conference on Energy Sustainability (ES2010)*. Paper No: ES2010-90327.
13. **Ozalp, N.** (2009). A methodology for developing energy flow models for industries on a national scale. *ASME International Mechanical Engineering Congress and Exposition (IMECE09)*. Paper No: IMECE2009-12414.
12. **Ozalp, N., Hyman, B.** (2009). Energy End-use models of the U.S. Organic and Inorganic Chemicals Industries. *ASME 3rd International Conference on Energy Sustainability (ES2009), 19-23 July*. Paper No: ES2009-90259.
11. Epstein, M., **Ozalp, N.** (2009). Overview of solar cracking of methane and the prospect for large scale co-production of hydrogen and carbon nano-materials. *International Conference and Training Workshop on Powering a Greener Future: Nano-materials and Solar Energy Conversion (Solar'09), 10-14 January*.
10. **Ozalp, N.** (2009). Solar thermochemical technology for emission-free generation of hydrogen from natural gas. *Offshore Arabia International Conference & Exhibition (Offshore Arabia 2009), January 11-13*.
9. **Ozalp, N., Epstein, M., Kogan, A.** (2008). Cracking of natural gas into hydrogen and carbon black using concentrated solar energy. *International Conference on Harnessing Technology ICHT 2008, October 12-13*. Paper number: Sl.No.9.(i), page 49.
8. **Ozalp, N.** (2008). Modeling industrial energy flow on a national scale. *International Conference on Harnessing Technology ICHT 2008, October 12-13*. Paper number: Sl.No.10.(v), page 94.
7. **Ozalp, N.** (2008). Energy process-step model of hydrogen production in the U.S. Chemical Industry. *ASME conference on Energy Sustainability 2008, August 10-14*. Paper number: ES2008-54121.
6. **Ozalp, N.** (2008). Utilization of heat, power and recovered waste heat for industrial processes in the US Chemical Industry. *ASME conference on Energy Sustainability 2008, August 10-14*. Paper number: ES2008-54120.
5. **Ozalp, N.** (2008). Current concentrating solar radiation technologies for environmental generation of steam, power, and hydrogen. *6th International conference on Heat Transfer & Fluid Mechanics & Thermodynamics, June 30 - July 2*. Paper number: HEFAT2008-ON2.
4. **Ozalp, N., Hyman, B.** (2005). A calibrated energy end-use model of the U.S. chemical industry. *1st International Green Energy Conference Proceedings, June 12-16*. Paper No. IGEC-1-ID14.
3. Hepbasli, A., **Ozalp, N.** (2000). Industrial energy efficiency and management studies in Turkey. *Proceedings of the 12th International Symposium on Transport Phenomena*, p. 815-820.
2. Hepbasli, A., **Ozalp, N.** (2000). Utilization of geothermal heat pumps in snow melting. *Proceedings of the Symposium on Renewable Energy Resources organized by Chamber of Turkish Electrical Engineers*, p. 45-52 (in Turkish).
1. **Ozalp, N., Sac, M., Yener, G., Tanbay, A.** (2000). Determination of Po-210 in fertilizers by electro-chemical deposition. *I. Eurasia Conference on Nuclear Science and its Applications*, p. 278-279.

Technical Presentations (*Abstract submissions only*)

1. Abuseada, M. (*presenter*), **Ozalp, N.** (2019). Heat transfer driven dynamics and control of transient variations in a solar reactor. ASME Summer Heat Transfer Conference. Presentation No: HT2019-3540.
2. Zhang, Y. (*presenter*), **Ozalp, N.**, Xie, G. (2019). Flow and heat transfer characteristics pass/through bluffing or permeable cylinders by means of improved LBM simulations. ASME Summer Heat Transfer Conference. Presentation No: HT2019-3764.
3. Abedini Najafabadi, H. (*presenter*), **Ozalp, N.**, Epstein, M., Davis, R., Lucas, S. (2019). Magnesium production via solar methanothermic reduction of magnesium oxide. ASME 13th Energy Sustainability Conference. Presentation No: ES2019-3929.
4. Ophoff, C. (*presenter*), Abuseada, M., **Ozalp, N.**, Moens, D. (2019). MCRT Coupled CFD Analysis of a 3 kW Solar Cavity Receiver Radiated via 10 kW HFSS: Experimental Validation and Parametric Optimization Study. ASME 13th Energy Sustainability Conference. Presentation No: ES2019-3859.
5. Verstraete, S. (*presenter*), **Ozalp, N.**, Debruyne, S. (2019). An experimental and numerical study on temperature control of a solar reactor. ASME 13th Energy Sustainability Conference. Presentation No: ES2019-3858.
6. **Ozalp, N.** (2018). Sunshine to fuels, power, and commodities. The Richard Goldstein Symposium, University of Minnesota, October 2018.
7. Ophoff, C. (*presenter*), Lucas, S., Osten, E., Abuseada, M., Abedini-Najafabadi, H., Peeraer, P., Sluyts, T., Rutten, J., Verschoren, J., **Ozalp, N.**, Moens, D. (2018). Challenges in Design of Solar Receivers and Auxiliary Components. ASME 2018 Energy Sustainability Conference. Presentation No: PowerEnergy2018-7757, June 2018.
8. Abuseada, M. (*presenter*), Ozalp, N. (2018). Heat transfer driven dynamics and control of transient variations in solar fuels production. ASME 2018 Energy Sustainability Conference. Presentation No: PowerEnergy2018-7761, June 2018.
9. Abuseada, M. (*presenter*), **Ozalp, N.** (2018). A 2D heat transfer model driven process control methodology for robust operation of solar receivers. 3rd Thermal and Fluids Engineering Conference. Presentation No: TFEC-2018-24515, March 2018.
10. Ophoff, C. (*presenter*), **Ozalp, N.** (2017). Optimization of design and process parameters for maximized and stable solar receiver efficiency. 2nd Thermal and Fluids Engineering Conference and 4th International Workshop on Heat Transfer. Presentation No: TFEC-IWHT2017-18225, April 2017.
11. Abedini-Najafabadi, H. (*presenter*), Ophoff, C., **Ozalp, N.** (2017). Development of an optimal control strategy to regulate temperature in a solar receiver. 2nd Thermal and Fluids Engineering Conference and 4th International Workshop on Heat Transfer. Presentation No: TFEC-IWHT2017-18224, April 2017.
12. Ophoff, C. (*presenter*), Ozalp, N. (2016). Challenges and key techniques for design and manufacturing of high temperature solar reactors and auxiliaries: An iris mechanism as an example case. ASME IMECE 2016 Mechanical Engineering Congress and Exposition. Presentation No: IMECE2016-68654.
13. Abedini-Najafabadi, H. (*presenter*), **Ozalp, N.** (2016). Development of a Non-linear Controller for a Solar Receiver Based on a Transient Heat Transfer Model. ASME IMECE 2016 Mechanical Engineering Congress and Exposition. Presentation No: IMECE2016-68644.

14. Salem, A., Usman, S., Zahreddine, H., Akanksha, M. (*presenter*), **Ozalp, N.** (2012). Experimental testing of weather change adoptable solar reactor mechanism. ASME 6th Energy Sustainability Conference. Presentation No: ESFuelCell2012-91382, July 2012.
15. **Ozalp, N.**, Chamis, C. (*presenter*). (2012). Thermal and structural analysis of a novel adaptable solar reactor. ASME 2012 Summer Heat Transfer Conference. Presentation No: HT2012-58421, July 2012.
16. **Ozalp, N.** (2012). Emission-free production of hydrogen in an aero-shielded solar cyclone reactor. 19th World Hydrogen Energy Conference (WHEC2012). Presentation No: 620, June 2012.
17. **Ozalp, N.** (2012). Challenges in materials selection for hydrogen producing reactors. Energy & Materials Research Conference (EMR2012). Presentation No: 78, June 2012.

Posters

1. Ophoff, C., Abedini-Najafabadi, H., **Ozalp, N.** (2016). An experimental and numerical study on the dynamics and temperature control of a solar reactor featuring human eye inspired mechanism. *ASME IMECE 2016 Mechanical Engineering Congress and Exposition*.
2. Majid, F., Zahreddine, H., Rizk, I., **Ozalp, N.** (2011). Co-production of hydrogen and carbon nano-tubes in smart solar reactor. *ASME IMECE 2011 Mechanical Engineering Congress and Exposition*.
3. Al-Hamidi, Y., Abdulla, S., El Zamli, M, Rizk, I., **Ozalp, N.** (2011). Variable-aperture mechanism to maintain semi-constant temperatures inside solar reactors. *ASME 5th Energy Sustainability Conference & Fuel Cell Conference*.
4. Almodaris, M., Abraham, J.J., Khorasani, S., **Ozalp, N.** (2011). Material flow model simulations of three hydrogen production techniques. *The 8th ASME-JSME Thermal Engineering Joint Conference*.
5. Almodaris, M., Jocin, A., Khorasani, S., Al-Akkad, B., **Ozalp, N.** (2010). Solar cracking for environmental and economic sustainability. *ASME 4th International Conference on Energy Sustainability (ES2010)*.
6. Abdalla, A., Mohamed, M., Jayakrishna, D., **Ozalp, N.** (2010). Design of the aero-shielded solar cyclone reactor. *ASME 4th International Conference on Energy Sustainability (ES2010)*.
7. Al-Khalili, B., Al-Akkad, B., Toyama, A., **Ozalp, N.** (2010). Smart solar reactor for varying weather conditions. *ASME 4th International Conference on Energy Sustainability (ES2010)*.
8. **Ozalp, N.**, Epstein, M., Kogan, A. (2009). An overview of solar thermochemical hydrogen, carbon nanomaterials and metals production technologies. *12th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES'09), 10-13 May*. Poster no: Ozalp186. **3rd Prize in poster competition.**
9. **Ozalp N.**, Yener, G. (1999). Determination of Uranium, Thorium and Potassium level of fertilizers by using gamma spectroscopy method. *Ege University, Science and Technology Research and Application Center Poster Exhibition*.

International

Editorial boards

1. **Associate Editor**, ASME Journal of Thermal Science and Engineering Applications. May 2017 – present.
2. **Associate Editor**, Frontiers in Mechanical Engineering. Responsible for Thermal and Mass Transport. April 2016 – present.
3. **Associate Editor**, The 16th International Heat Transfer Conference, Beijing, China, August 2018.
4. **Co-Guest Editor**, Special Issue on: Mini-symposium on Advances in Supercritical Carbon Dioxide in Thermal and Energy Sciences by Guest Editor Bengt Sundén of the Lund University, Applied Thermal Engineering, Elsevier, February 2018.
5. **Associate Editor**, ASME Journal of Solar Energy Engineering. Responsible for Heat and Mass Transfer Modelling. January 2013 – December 2016.
Assignments undertaken: Jul'16; Jun'16(2); May'16(2); Apr'16(2); Mar'16(2); Feb'16(2); Jan'16(2); Dec'15(2); Nov'15(2); Oct'15(2); Sep'15(2); Aug'15(2); Jul'15; Jun'15; May'15; Apr'15; Mar'15 (3); Feb'15 (2); Jan'15 (2); Dec'14; Oct'14; Sept'14; Aug'14; Jun'14; May'14; Apr'14; Mar'14; Feb'14; Jan'14; Dec'13 (2); Nov'13; Oct'13; Sept'13; Aug'13; Jul'13; June'13; May'13; Apr'13; Mar'13(2); Jan'13.
6. **Guest Associate Editor**, ASME Journal of Solar Energy Engineering. January 2012 – December 2012.
Assignments undertaken: Nov'12; Oct'12; Sept'12; Dec'12.

7. **Guest Associate Editor**, ASME Journal of Energy Resources Technology. January 2010 – December 2011. Assignments undertaken: Nov'11; Aug'11; May'11; Feb'11; Oct'10 (2); Sep'10 (3); Aug'10; May'10; Mar'10; Feb'10; Jan'10.

Scientific advisory boards

1. **Executive board member**, International Advisory Board Directory of the International Association of Hydrogen Energy, June 2012 – present.
2. **Committee Member**, International Scientific Advisory Committee of the 22nd International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2019), Crete, Greece, October 2019.
3. **Committee Member**, Scientific Advisory Committee of the Power-Energy Summit 2019: Global Summit and Expo on Power and Energy Engineering, Dubai, UAE, February 2019.
4. **Committee Member**, Scientific Advisory Committee of the SOLARTR 2018 International Conference and Exhibition, the International Solar Energy Society (ISES), Istanbul, Turkey, November 2018.
5. **Committee Member**, International Scientific Advisory Committee of the 21st International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2018), Prague, Czech Republic, August 2018.
6. **Committee Member**, International Scientific Advisory Committee of the World Renewable Energy Conference, Stockholm, Sweden, June 2018.
7. **Committee Member**, International Scientific Advisory Committee of the European Hydrogen Energy Conference (EHEC 2018), Malaga-Spain, March 2018.
8. **Committee Member**, International Scientific Advisory Committee of the 20th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2017), Tianjin, China, August 2017.
9. **Committee Member**, International Scientific Committee of the 4th International Workshop on Heat Transfer (IWHT) co-located with the 2nd Thermal and Fluids Engineering Conference (TFEC), Las Vegas, April 2017.
10. **Committee Member**, International Scientific Advisory Committee of the 19th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2016), Prague, Czech Republic, August 2016.
11. **Committee Member**, International Scientific Advisory Committee of the 21st World Hydrogen Energy Conference (WHEC 2016), Zaragoza, Spain, June 2016.
12. **Committee Member**, International Scientific Advisory Committee of the First Pacific Rim Thermal Engineering Conference, Hawaii's Big Island, USA, March 2016.
13. **Committee Member**, The best poster competition selection committee of the 18th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2015), Kuching, Malaysia, August 2015.
14. **Committee Member**, International Scientific Advisory Committee of the 18th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2015), Kuching, Malaysia, August 2015.

15. **Committee Member**, The best poster competition selection committee of the 17th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2014), Prague, Czech Republic, August 2014.
16. **Committee Member**, International Scientific Advisory Committee of the 17th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2014), Prague, Czech Republic, August 2014.
17. **Committee Member**, International Scientific Advisory Committee of the 16th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2013), Greece, October 2013.
18. **Committee Member**, Scientific Committee of the 3rd International Conference on Energy Process Engineering – Transition to Renewables (ICEPE 2013), June 2013, Frankfurt, Germany.
19. **Committee Member**, The best poster competition selection committee of the 15th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2012), Prague, August 2012.
20. **Committee Member**, International Scientific Advisory Committee of the 15th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2012), Prague, August 2012.
21. **Committee Member**, International Scientific Advisory Committee of the 14th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2011), Italy, May 2011.
22. **Committee Member**, The best poster competition selection committee of the 14th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2011), Italy, May 2011.
23. **Committee Member**, International Scientific Advisory Committee of the 13th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2010), Czech Republic, August 2010.
24. **Committee Member**, The best poster competition selection committee of the 13th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2010), Czech Republic, August 2010.

Reviewer activities

Journals:

1. AIAA Journal of Thermophysics and Heat Transfer: *Jul'14; May'14; Dec'13.*
2. Applied Energy: *Jan'19; Jan'18.*
3. Applied Thermal Engineering: *July'18; May'18; May'17; Jul'17.*
4. ASME Journal of Energy Resources Technology: *Jun'11; Feb'11(2); Jan'11(2); Dec'10(2); Oct'10(4); Sep'10(2); Apr'10; Mar'10; Mar'10(2); Dec'08.*
5. ASME Journal of Solar Energy Engineering: *Jul'16(2); Jun'16(2); May'16(2); Apr'16(2); Mar'16(4); Feb'16(4); Jan'16(4); Dec'15(4); Nov'15(4); Oct'15(4); Sep'15(2); Aug'15(2); Jul'15; Jun'15; May'15; Apr'15(2); Mar'15(2); Feb'15(2); Jan'15; Dec'14; Nov'14; Oct'14; Sep'14; Jul'14(2); Jun'14(2); May'14(2); April'14; Jan'14 (2); Dec'13 (2); Nov'13; Oct'13; Aug'13; Jun'13(2); May'13(2); Apr'13(2); Mar'13; Nov'12; Mar'12; Dec'11; Jun'11; Apr'11; Jul'10; Nov'09; Aug'09.*
6. ASME Journal of Fluids Engineering: *May'13.*
7. ASME Journal of Heat Transfer: *Nov'19; Mar'16.*

8. ASME Journal of Thermal Science and Engineering: *Jul'18; Jul'17; Oct'12.*
9. Carbon: *Dec'15.*
10. Clean Technologies and Environmental Policy: *Jul'18.*
11. Chemical Engineering Journal: *Sept'13; Apr'13.*
12. Chemical Engineering Science: *Jul'11.*
13. Computational Thermal Sciences: *Dec'18 (2); Oct'18.*
14. Energy: *Jul'15; Jan'15; Jul'14; Sept'12; Dec'11; Oct'11; Sep'10; May'10; Jan'10; Oct'09; Aug'09; May'09; Aug'06; April'06.*
15. Energy Conversion & Management: *Oct'13.*
16. Energy Policy: *Jun'11; Sep'10; Jun'10; Jan'10; Sep'09; Jan'09; May'08; Feb'08; Nov'07; Apr'07; Dec'06.*
17. Environmental Science & Technology: *Nov'10; Aug'10.*
18. Environments: *Oct'18.*
19. Industrial & Engineering Chemistry Research: *Aug'08.*
20. IEEE Transactions: *Apr'11.*
21. IEEE Transactions on Industrial Informatics: *Mar'19.*
22. International Communications on Heat & Mass Transfer: *Mar'19.*
23. International Journal of Chemical Reactor Engineering: *Dec'12; Jul'09.*
24. International Journal of Cleaner Production: *Dec'09; Sep'09.*
25. International Journal of Energy for a Clean Environment: *Nov'17 (2)*
26. International Journal of Heat and Mass Transfer: *Jan'19; Sept'18; May'18; Oct'17; Apr'17; Mar'17.*
27. International Journal of Hydrogen Energy: *Apr'18; Mar'18; Jan'12; Aug'11; Jun'11; Mar'11; Feb'11; Jan'10; Mar'10; Apr'10; May'10; Jul'10; Aug'10.*
28. Journal of Enhanced Heat Transfer: *Mar'18(2); Aug'18(2).*
29. Journal of Renewable Energy: *Nov'12.*
30. Journal of Renewable and Sustainable Energy: *Mar'18; Oct'15(2); Oct'14; Jul'14.*
31. Journal of Quantitative Spectroscopy and Radiative Transfer: *Apr'17.*
32. Nuclear Engineering and Design: *Jul'15.*
33. Optics and Lasers in Engineering: *Aug'15.*
34. Powder Technology: *Jun'18.*
35. Sensors & Actuators: A. Physical: *Sept'18; Jan'18.*
36. Solar Energy: *May'15; Apr'15; Apr'13; Mar'13; Feb'12; Jan'12; Aug'11.*

Conferences:

1. ASME Summer Heat Transfer Conference (SHTC 2019)
2. 22nd International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2019)
3. ASTFE 4th Thermal and Fluids Engineering Conference (TFEC 2019)
4. ASME 2018 International Mechanical Engineering Congress & Exposition (IMECE 2018)
5. 21st International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2018)
6. ASME Power & Energy 2018 Conference and Exhibition
7. ASTFE 3rd Thermal and Fluids Engineering Conference (TFEC 2018)
8. ASME Summer Heat Transfer Conference (SHTC 2017)
9. ASME Power & Energy 2017 Conference and Exhibition
10. 20th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2017)
11. ASME 2016 International Mechanical Engineering Congress & Exposition (IMECE 2016)
12. ASME Summer Heat Transfer Conference (SHTC 2016)
13. ASME Power & Energy 2016 Conference and Exhibition
14. 19th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2016)
15. World Hydrogen Energy Conference (WHEC 2016)
16. 11th International Conference on Computational Fluid Dynamics in the Minerals and Process Industries (CFD 2015)

17. ASME 2015 International Mechanical Engineering Congress & Exposition (IMECE 2015)
18. ASME Power & Energy 2015, 9th International Conference on Energy Sustainability (ES 2015)
19. 18th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2015)
20. 11th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics (HEFAT 2015)
21. ASME 2014 International Mechanical Engineering Congress & Exposition (IMECE 2014)
22. ASME 8th International Conference on Energy Sustainability (ES 2014)
23. 17th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2014)
24. 16th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2013)
25. ASME 2013 International Mechanical Engineering Congress & Exposition (IMECE 2013)
26. ASME 2013 Summer Heat Transfer Conference
27. ASME Turbo Expo 2013 (TE 2013)
28. 15th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2012)
29. ASME 2012 Summer Heat Transfer Conference
30. ASME International Mechanical Engineering Congress & Exposition (IMECE 2012)
31. 9th International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics (HEFAT 2012)
32. ASME 2012 6th International Conference on Energy Sustainability (ASME ES2012)
33. ASME International Mechanical Engineering Congress & Exposition (IMECE 2011)
34. ASME 5th Energy Sustainability Conference & Fuel Cell Conference (ASME ES2011)
35. 14th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2011)
36. ASME International Mechanical Engineering Congress & Exposition (IMECE 2010)
37. 13th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2010)
38. ASME 4th International Conference on Energy Sustainability (ES 2010)
39. ASME International Mechanical Engineering Congress & Exposition (IMECE 2009)
40. 2009 US-EU-China Thermophysics Conference – Renewable Energy
41. ASME 3rd International Conference on Energy Sustainability (ES 2009)
42. ASME International Mechanical Engineering Congress & Exposition (IMECE 2008)

ASME and ASTFE leadership roles and activities

1. ***Conference Technical Program Co-Chair***, ASTFE 2019, 4th American Society of Thermal Fluids Engineers conference (ASTFE 2019), April 2019.
2. ***Conference Technical Program Chair***, ASTFE 2018, 3rd American Society of Thermal Fluids Engineers conference (ASTFE 2018), March 2018.
3. ***Conference Technical Program Chair***, ASME 2017 Summer Heat Transfer Conference, July 2017.
4. ***Chair***, ASTFE “Science and Engineering Fundamentals and Methodology” technical committee, April 2017 – present.
5. ***Chair***, ASME “K-21 Heat Transfer and Thermal Sciences Education” technical committee, July 2017 – present.
6. ***Chair***, ASME “K-6 Heat Transfer in Energy Systems” technical committee, July 2016 – present.
7. ***Vice-chair***, ASME “K-21 Heat Transfer and Thermal Sciences Education” technical committee, July 2014 – June 2017.
8. ***Vice-chair***, ASME “K-6 Heat Transfer in Energy Systems” technical committee, January 2014 – June 2016.

9. **Technical Committee Representative (KCR) of ASME K-6 division**, 2013 ASME-IMECE, San Diego, November 2013.
10. **Conference Technical Program Co-Chair**, ASME 4th International Conference on Energy Sustainability joint with ASME Solar Energy Division (SED) and ASME Advanced Energy Systems Division (AESD), ASME ES2010, Arizona, May 2010.

Panel organization:

1. **Panel chair**, “Panel on the key role of heat transfer in energy systems research”, 2019 ASME-IMECE, November 2019.

Panelists

Dr. Peiwen Li	Professor of Mechanical Engineering	University of Arizona
Dr. Srinath Ekkad	Professor of Mechanical Engineering	North Carolina State University
Dr. S.A. Sherif	Professor of Mechanical Engineering	University of Florida
Dr. Alex Rattner	Assistant Prof. of Mech. Engineering	Penn State University

2. **Panel chair**, “Panel on heat transfer education”, 2019 ASME-IMECE, November 2019.

Panelists

Dr. Chenn Zhou	Professor of Mechanical Engineering	Purdue University Northwest
Dr. Patrick Oosthuizen	Professor of Mechanical Engineering	Queen’s University
Dr. Kevin Anderson	Professor of Mechanical Engineering	California State Polytech Univ.
Dr. Alex Rattner	Assistant Prof. of Mech. Engineering	Penn State University

3. **Panel chair**, “Panel on the key role of heat transfer in energy systems research”, 2019 ASME-SHTC, July 2019.

Panelists

Dr. Michael Epstein	Emeritus Director	Weizmann Institute of Science
Dr. Yuwen Zhang	Professor of Mechanical Engineering	University of Missouri
Dr. S.A. Sherif	Professor of Mechanical Engineering	University of Florida

4. **Panel chair**, “Panel on heat transfer education”, 2019 ASME-SHTC, July 2019.

Panelists

Dr. Ashley Emery	Professor of Mechanical Engineering	University of Washington
Dr. Sandip Mazumdar	Professor of Mechanical Engineering	Ohio State University
Dr. Michael Pate	Professor of Mechanical Engineering	Texas A&M University

5. **Panel chair**, “Panel on the key role of heat transfer in energy systems research”, 2018 ASME-IMECE, November 2018.

Panelists

Dr. Yaroslav Chudnovsky	Senior Engineer	Gas Technology Institute (GTI)
Dr. Kashif Nawaz	Research Staff	Oak Ridge National Laboratory
Dr. Patrick Oosthuizen	Professor of Mechanical Engineering	Queen’s University
Dr. Debjyoti Banerjee	Professor of Mechanical Engineering	Texas A&M University

6. **Panel chair**, “Panel on advances in heat transfer education”, 2017 ASME-IMECE, November 2017.

Panelists

Dr. S.A. Sherif	Professor of Mechanical and Aerospace Engineering	University of Florida
Dr. Patrick Oosthuizen	Professor of Mechanical Engineering	Queen’s University

Dr. Tim Fisher	Professor of Mechanical Engineering	UCLA
Dr. Kyle Daun	Professor of Mechanical Engineering	University of Waterloo

7. **Panel chair**, “10-47 Panel on advances in heat transfer education”, 2014 ASME-IMECE, Montreal, November 2014.

Panelists

Dr. S.A. Sherif	Professor of Mechanical and Aerospace Engineering	University of Florida
Dr. Patrick Oosthuizen	Professor of Mechanical Engineering	Queen’s University, CA
Dr. John Thome	Professor of Mechanical Engineering	EPFL, Switzerland

8. **Panel chair**, “9-1-8: Clean energy as the building mark of this millennium”, 2013 ASME-IMECE, San Diego, November 2013.

Panelists

Dr. Christian Sattler	Head of Solar Thermo Chemistry	German Aerospace Center (DLR), Germany
Dr. James Klausner	Program Director	Advanced Research Projects Agency, (ARPA-E), Washington DC
Dr. Roy Hogan	Solar Thermal Unit	Sandia National Laboratories, Albuquerque, NM

Track organization:

1. **Track Chair**, “Track 1: Heat Transfer in Energy Systems”, ASME Summer Heat Transfer Conference, SHTC2019, Bellevue, July 2019.
2. **Track co-Chair**, “Track 1: Heat Transfer in Energy Systems”, ASME Summer Heat Transfer Conference, SHTC2017, Bellevue, July 2017.
3. **Track Chair**, “Track 2: Thermophysical properties”, ASME Summer Heat Transfer Conference, SHTC2017, Bellevue, July 2017.
4. **Track Chair**, “Track 3: Fuel Cells and Hydrogen Energy Technologies”, ASME 4th International Conference on Energy Sustainability joint with ASME Solar Energy Division (SED) and ASME Advanced Energy Systems Division (AESD), ASME ES2010, Arizona, May 2010.
5. **Track co-Chair**, “Track 4: Energy Systems: Design, Integration, Implementation”, “Track 10: Geothermal Energy, Ocean Energy & Other Emerging Technologies”, ASME 4th International Conference on Energy Sustainability joint with ASME Solar Energy Division (SED) and ASME Advanced Energy Systems Division (AESD), ASME ES2010, Arizona, May 2010.
6. **Track Chair**, “Track 4: Energy Systems Design and Thermo-economic Analysis”, at ASME 3rd International Conference on Energy Sustainability joint with ASME Solar Energy Division International Solar Energy Conference and ASME Advanced Energy Systems Division, San Francisco, July 2009.

Topic organization:

1. **Topic organizer**, “10-5 Heat Transfer in Solar Power Systems”, ASME International Mechanical Engineering Congress and Exposition (IMECE), November 2018.
2. **Topic organizer**, “10-1 Heat Transfer in Energy Systems”, ASME International Mechanical Engineering Congress and Exposition (IMECE), November 2017.
3. **Topic organizer**, “10-1 Heat Transfer in Energy Systems: Energy Conversion”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Phoenix, November 2016.

4. **Topic co-organizer**, “10-2 Heat Transfer in Energy Systems: Fundamentals”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Phoenix, November 2016.
5. **Topic co-organizer**, “10-3 Heat Transfer in Energy Systems: Applications”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Phoenix, November 2016.
6. **Topic co-organizer**, “10-4 Heat Transfer in Energy Systems: Design and Performance Analysis”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Phoenix, November 2016.
7. **Topic organizer**, “1-2 Fundamentals of heat transfer in energy systems”, ASME Summer Heat Transfer conference ASME SHT 2016, Washington DC, July 2016.
8. **Topic co-organizer**, “Heat Transfer in Energy Conversion Technologies (PV, TE, and other renewable technologies)”, ASME Summer Heat Transfer conference ASME SHT 2016, Washington DC, July 2016.
9. **Topic organizer**, “10-5 Heat transfer analysis in solar energy systems”, 2015 ASME-IMECE, Houston, November 2015.
10. **Topic co-organizer**, “10-2 Analysis of cooling, heating, and power systems/components”, 2015 ASME-IMECE, Houston, November 2015.
11. **Topic co-chair**, “10-52 Recent advances in undergraduate heat transfer education”, 2014 ASME-IMECE, Montreal, November 2014.
12. **Topic co-chair**, “10-38 Heat and mass transfer under extreme conditions including hot and arid climates”, 2014 ASME-IMECE, Montreal, November 2014.
13. **Topic organizer**, “9-1: Heat Transfer in Energy Systems”, ASME 2013 International Mechanical Engineering Congress and Exposition Conference, San Diego, November 2013.
14. **Topic organizer**, “1-4 Heat Transfer in Solar Energy Systems”, ASME 2013 Summer Heat Transfer Conference, Minneapolis, July 2013.
15. **Topic organizer**, “Session 7-7: Hydrogen Energy Technologies”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Florida, November 2009.

Session organization:

1. **Session chair**, “9-4-1 Heat transfer in solar power systems” ASME International Mechanical Engineering Congress & Exposition IMECE 2019, Salt Lake City, UT, November 2019.
2. **Session Chair**, “Session 1-10-5 Solar Thermochemical Reactors - I”, ASME Energy Sustainability Conference, sponsored by ASME's Solar Energy and Advanced Energy Systems Divisions, Lake Buena Vista, June 2018.
3. **Session chair**, “10-1-1 Heat Exchangers and Heat Recovery Systems”, ASME International Mechanical Engineering Congress & Exposition IMECE 2017, Tampa, FL, November 2017.
4. **Session co-chair**, “1-2-1 Fundamentals - I”, ASME Summer Heat Transfer conference ASME SHT 2016, Washington DC, July 2016.
5. **Session co-chair**, “1-2-2 Fundamentals - II”, ASME Summer Heat Transfer conference ASME SHT 2016, Washington DC, July 2016.
6. **Session chair**, “1-2-3 Fundamentals - III”, ASME Summer Heat Transfer conference ASME SHT 2016, Washington DC, July 2016.

7. **Session chair**, “10-5-1 Heat transfer analysis in solar energy systems - I”, 2015 ASME-IMECE, Houston, November 2015.
8. **Session chair**, “10-5-2 Heat transfer analysis in solar energy systems - II”, 2015 ASME-IMECE, Houston, November 2015.
9. **Session co-chair**, “10-2-1 Analysis of cooling, heating, and power systems/components”, 2015 ASME-IMECE, Houston, November 2015.
10. **Session chair**, “10-5-1 Performance assessment of energy systems”, 2014 ASME-IMECE, Montreal, November 2014.
11. **Session co-chair**, “10-18-2 Phase change and convection”, 2014 ASME-IMECE, Montreal, November 2014.
12. **Session chair**, “1-7-4 Solar thermochemical energy storage”, ASME 8th International Conference on Energy Sustainability, ES2014, Boston, June 2014.
13. **Session chair**, “9-1-4: Numerical analysis and performance assessment of energy systems”, ASME 2013 International Mechanical Engineering Congress and Exposition Conference, San Diego, November 2013.
14. **Session chair**, “Session 1-4-1: Heat Transfer in Solar Energy Systems – I: Numerical Analysis”, ASME 2013 Summer Heat Transfer Conference, Minneapolis, July 2013.
15. **Session co-chair**, “Session 1-4-2: Heat Transfer in Solar Energy Systems – II: Optical Analysis”, ASME 2013 Summer Heat Transfer Conference, Minneapolis, July 2013.
16. **Session chair**, “Session 1-4-4: Heat Transfer in Solar Energy Systems – IV: Experimental Studies”, ASME 2013 Summer Heat Transfer Conference, Minneapolis, July 2013.
17. **Session chair**, “Session 7-2-4: Numerical Analysis and Performance Assessment of Various Energy Systems - I”, ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, November 2012.
18. **Session co-chair**, “Session 7-2-5: Solar Thermal Systems”, ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, November 2012.
19. **Session co-chair**, “Session 7-2-13: Heat Transfer in Energy Systems: General Papers II”, ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, November 2012.
20. **Session Chair**, “Session 1-10-1: Solar Fuels via Two-step Thermochemical Redox Cycles: Experimental validation and kinetic analysis”, ASME 6th International Conference on Energy Sustainability, ASME ES2012, San Diego, July 2012.
21. **Session co-chair**, “Session 1-3: Heat Transfer in Solar Energy Systems”, ASME 2012 Summer Heat Transfer Conference, Puerto Rico, July 2012.
22. **Session Chair**, “Session 2-6-2: Energy Systems Components: Mathematical and Numerical Models”, ASME 2011 International Mechanical Engineering Congress & Exposition, ASME IMECE2011, Denver, November 2011.
23. **Session Chair**, “Session 1-10-6: Solar Fuels and Waste Removal via Novel Cycles and Catalysts”, ASME 5th Energy Sustainability Conference & Fuel Cell Conference, ASME ES2011, Washington DC, August 2011.
24. **Session Chair**, “Session 3-3: Fuel Cells Systems Modeling, Design and Optimization – II”, ASME 4th International Conference on Energy Sustainability joint with ASME Solar Energy Division (SED) and ASME Advanced Energy Systems Division (AESD), ASME ES2010, Arizona, May 2010.

25. **Session Chair**, “Session 7-4-1: Novel Thermodynamic Cycles”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Florida, November 2009.
26. **Session Chair**, “Session 7-7-1: Hydrogen Energy Technologies”, ASME International Mechanical Engineering Congress and Exposition (IMECE), Florida, November 2009.
27. **Session Chair**, “Session 3-3: Hydrogen Production via Solar Energy”, ASME 3rd International Conference on Energy Sustainability joint with ASME Solar Energy Division International Solar Energy Conference and ASME Advanced Energy Systems Division, San Francisco, July 2009.
28. **Session Chair**, “Session 3-4: Hydrogen Systems Analysis and Hydrogen Storage”, ASME 3rd International Conference on Energy Sustainability joint with ASME Solar Energy Division International Solar Energy Conference and ASME Advanced Energy Systems Division, San Francisco, July 2009.
29. **Session Chair**, “Session 4-1: Power Plant and Thermodynamic Cycle Analysis”, ASME 3rd International Conference on Energy Sustainability joint with ASME Solar Energy Division International Solar Energy Conference and ASME Advanced Energy Systems Division, San Francisco, July 2009.
30. **Session Chair**, “Session 4-3: Energy Systems Modeling and Optimization”, ASME 3rd International Conference on Energy Sustainability joint with ASME Solar Energy Division International Solar Energy Conference and ASME Advanced Energy Systems Division, San Francisco, July 2009.

Other conference activities

1. **Session chair**, “Integration of Renewables”, 20th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2015), Tianjin-China, August 2017.
2. **Session co-chair**, “Heat and mass transfer in porous media”, American Society of Thermal Fluids Engineers (ASTFE), Las Vegas, April 2017.
3. **Session chair**, “Computational Methods/Tools in Thermal-fluid Systems II”, American Society of Thermal Fluids Engineers (ASTFE), Las Vegas, April 2017.
4. **Session chair**, “Industrial and experimental Studies”, 18th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2015), Kuching-Malaysia, August 2015.
5. **Session chair**, “2-3: Operational research, and supply chain management”, 16th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2013), Greece, October 2013.
6. **Session chair**, “Session I4: Towards Hydrogen Economy”, 15th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2012), Prague, August 2012.
7. **Session Chair**, “Session HPA9 of Track 1: Reforming & Gasification, Fossil Energy Carriers – 2”, 19th World Hydrogen Energy Conference, WHEC 2012, Toronto, June 2012.
8. **Session Chair**, “Advanced Energy and Environmental Systems”, 8th International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics, HEFAT2011, Mauritius, July 2011.

9. **Session Chair**, “Waste Heat Minimization, Processing and Management” session at the 14th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2011), Italy, May 2011.
10. **Session Chair**, “Waste Heat Minimization, Processing and Management” session at 13th International Conference on Process Integration, Modeling and Optimization for Energy Saving and Pollution Reduction (PRES 2010), Czech Republic, August 2010.
11. **Session Chair**, “Offshore & Onshore Protections” session, Offshore Arabia International Conference & Exhibition (Offshore Arabia 2009), Dubai, January 2009.

Other service activities

1. **Board Member**, representing graduate and professional students of UW at the “University of Washington President’s Research Advisory Board”, University of Washington, 2004–2005.
2. **Board Member**, representing graduate and professional students of UW at the “Washington State Environmental Policy Act (SEPA)” board, 2004–2005.
3. **Committee Member**, representing graduate and professional students of UW at the “University of Washington Provost’s Fund for Innovation and Redesign”, University of Washington, 2003–2004.
4. **Senator**, of Mechanical Engineering Department, Graduate and Professional Students Senate, 2003–2005.
5. **International Graduate Student Representative**, Mechanical Engineering Department, Stanford University, 2001–2002.
6. **Organizing Committee Member**, National Symposium on Cooling Systems, Izmir–Turkey, 2000.
7. **Organizing Committee Member**, International Symposium on Transport Phenomena, Istanbul–Turkey, 2000.