CURRICULUM VITAE FOR MARC A. ROSEN

EDUCATION

Ph.D., 1987, Univ. of Toronto, Dept. of Mechanical Engineering

M.A.Sc., 1983, Univ. of Toronto, Dept. of Mechanical Engineering

B.A.Sc., 1981, Univ. of Toronto, Div. of Engineering Science, Nuclear and Thermal Power Generation Option

RECENT PROFESSIONAL EXPERIENCE

Professor, Faculty of Engineering and Applied Science, Univ. of Ontario Institute of Technology, Oshawa, Ontario, 2002-pres. Teaches mechanical and automotive engineering; performs research, administrative and supervisory tasks.

Dean (founding), Faculty of Engineering and Applied Science, Univ. of Ontario Institute of Technology, Oshawa, Ontario, 2004-08. Started up and administered Faculty, which expects to have approximately 1300 students and 80 faculty and staff.

Dean (founding), School of Manufacturing Engineering, Univ. of Ontario Institute of Technology, Oshawa, Ontario, 2002-04. Launched and administered School, which grew in two years to approximately 250 students and 20 faculty and staff.

Visiting Professor, Dept. of Industrial Engineering, University of Salerno, Italy, 2019, 2022, 2023, 2024, 2025.

Adjunct Professor, Dept. of Mechanical, Aerospace and Industrial Engineering (Dept. of Mechanical and Industrial Engineering after 2004), Ryerson Univ., Toronto, 2002-17. Supervises graduate students and performs collaborative research.

Adjunct Professor, Dept. of Civil Engineering, Univ. Laval, Quebec, 1997-2000 and 2008-2015. Supervises graduate students and performs collaborative research.

Adjunct Professor, Dept. of Chemical Engineering, Univ. Laval, Quebec, 2012-2015. Supervises graduate students and performs collaborative research.

Chair, Dept. of Mechanical Engineering, Ryerson Polytechnic Univ., Toronto, 1994-99. Administered Schools of Aerospace, Industrial and Mechanical Engineering, which have approximately 900 students, 45 faculty and staff, and an annual operating budget (excluding external funds) of $2.5 million.

Director, School of Aerospace Engineering, Dept. of Mechanical Engineering, Ryerson Polytechnic Univ., Toronto, 1992-94. Administered the School's 250 students and 10 faculty.

Professor, Dept. of Mechanical, Aerospace and Industrial Engineering, Ryerson Polytechnic Univ., Toronto, 1986-2002. Taught mechanical and aerospace engineering; performed research, administrative and supervisory tasks.

Adjunct Professor, Dept. of Mechanical Engineering, Univ. of Western Ontario, London, Ont. 1993-99; Member, Faculty of Graduate Studies, Univ. of Western Ontario, 1994-2004. Supervises graduate students and performs collaborative research.

Adjunct Professor, Dept. of Mechanical Engineering, Univ. of Victoria, 1998-2003. Supervises graduate and post-doctoral students and performs collaborative research.

Associate for Graduate Student Co-supervisions, Inst. for Aerospace Studies, Univ. of Toronto, 1998-2003.

Visiting Professor, Dept. of Mechanical Engineering and Visiting Fellow, Inst. for Integrated Energy Systems, Univ. of Victoria, 1995-97.

Research Assoc., Energy and Environmental Systems Div., Argonne National Lab., Illinois, 1987. Enhanced and applied a computer code for the analysis, modelling and simulation of energy systems.

Research Assoc., Analysis and Modelling Div., Inst. for Hydrogen Systems, Mississauga, Ont., 1983-86. Investigated electricity and fuel production, integrated energy systems, environmental impact of energy utilization; enhanced M.I.T. simulation code for Second-Law Analysis; prepared project proposals and reports.

Research/Teaching Asst., Depts. of Mechanical Engineering, Univ. of Toronto, 1981-83, and Ryerson Polytechnical Inst., 1983. Performed teaching and marking. Analyzed and modelled radiant energy distribution across sky (only at Univ. of Toronto).

Engineering Trainee, Imatra Power Co., Finland, 1980. Performed environmental assessments; developed models for nuclear plant radiation releases; prepared lecture notes on nuclear safety.

Research Engineer, Canadian Gypsum Co., Toronto, 1979. Analyzed properties of roofing materials; investigated plant energy consumption; analyzed plant material wastes and proposed implementation of a process control system.

Junior Geological Asst., Rayrock Resources Ltd., Toronto, 1978. Explored for economically recoverable mineral deposits in Northwest Territories.

OTHER SIGNIFICANT PROFESSIONAL POSITIONS

Member, Board of Directors, Canadian Academy of Engineering, 2019-pres.

Member, Board of Directors, Oshawa Power and Utilities Corporation, 2010-21.

Editor, *Energy Conversion and Management*, 2013-23.

Editor-in-Chief, *Sustainability*, 2009-pres.

Editor-in-Chief, *Biofuels*, 2014-pres.

Editor-in-Chief, *European Journal of Sustainable Development Research*, 2016-pres.

Editor-in-Chief, *Research Journal of Environmental Sciences*, 2013-21.

Editor-in-Chief, *International Journal of Energy and Environmental Engineering*, 2012-20.

President, Engineering Institute of Canada, 2008-10.

Director, Durham Strategic Energy Alliance (DSEA), 2005-07.

President, Canadian Society for Mechanical Engineering (CSME), 2002-04.

Vice Chair-Administration, Systems Analysis Technical Committee, Advanced Energy Systems Div., American Society of Mechanical Engineers (ASME), 2000-02.

Member of National Council of Engineering Institute of Canada, 2002-04.

Chair, Thermo-Fluids Engineering Technical Div., Canadian Society for Mechanical Engineering (CSME), 1994-2002.

HONOURS AND AWARDS

Honorary Editor-in-Chief, *International Journal of Environmental Science and Development*, 2024-pres.

Honorary Chair, 2025 International Conference on Energy Technology and Electrical Engineering (ETEE 2025), 15-17 Aug. 2025, Shenyang, China.

Honorary Chair, 5th International Congress on Energy Chemistry and Engineering 2025 (ICECE-2025), 20-22 June 2025, Chengdu, China.

Honorary Chairman. International Congress on Battery Materials and Devices 2025 (ICBMD-2025), 12-13 Apr. 2025, Suzhou, China.

Top lifetime research rankings, ScholarGPS profile, 2024 (#1 Exergy, #2 Cogeneration, #1 Automotive engineering, #3 Thermal energy storage, #4 Hydrogen fuel, #5 in Energy, #10 in Sustainable development).

Fellow, Industry Academy of International Artificial Intelligence Industry Alliance (AIIA), 2024-pres.

Mechanical and Aerospace Engineering Leader Award, Research.com, 2024 (for ranking 2nd in Canada and 27th in the world among Best Scientists in Mechanical and Aerospace Engineering).

Top lifetime research rankings, ScholarGPS profile, 2022 (#1 Exergy, #1 Cogeneration, #1 Automotive engineering, #3 Thermal energy storage, #4 Hydrogen fuel, #6 in Energy).

Mechanical and Aerospace Engineering Leader Award, Research.com, 2023 (for ranking 2nd in Canada and 29th in the world among Best Scientists in Mechanical and Aerospace Engineering, and ranking 2nd in Canada and 37th in the world among Best Scientists in Engineering and Technology).

Top Downloaded Article, Wiley, 2023 (A Conceptual Review of Sustainable Electrical Power Generation from Biogas. *Energy Science & Engineering* 10(2):630-655, 2022).

Fellow, Royal Society of Canada (RSC), 2022-pres. (for outstanding scholarly, scientific and artistic achievement; considered the highest honour an individual can achieve in the Arts, Social Sciences and Sciences in Canada).

Fellow, National Academy of Technology (Energy and Green Technology Section), 2021-pres.

Honorary Chairman, International Congress on Energy Chemistry and Engineering 2022, 17-19 June 2022, Xi’an, China.

COVID Recognition Award, Ontario Tech University, 2022 (for demonstration of excellence during the pandemic).

Engineering and Technology Leader Award, Research.com, 2022 (for ranking 2nd in Canada and 34th in the world in Engineering & Technology in National Ranking of Top 1000 Scientists).

Honorary Editor-in-Chief, *Geomatics and Environmental Engineering*, 2021-pres.

Honorary Editor, *Energy, Environment and Storage*, 2021-pres.

Highly Cited Researcher, Clarivate Analytics/Web of Science, 2021.

Member, EU Academy of Sciences, 2021-pres.

Ranked 23rd in field of energy for citations out of more than 186,000 researchers globally, 2021 (based on Ioannidis JPA, Boyack KW, Baas J (2020) Updated science-wide author databases of standardized citation indicators. PLoS Biol 18(10): e3000918).

Member, List of the World's 1,000 Top Climate Scientists, Reuters, 2021.

Honorary Chairman, International Congress on Energy Chemistry and Engineering 2021, 18-21 June 2021, Chengdu, China.

Highly Cited Researcher, Clarivate Analytics/Web of Science, 2020.

Chief Guest and Guest of Honor. First Virtual International Conference on Advances in Renewable and Sustainable Energy Systems (ICARES-2020). 3-5 Dec. 2020, Kattankulathur, Chennai, India and webinar.

Certificate of Recognition, Webinar on Green Energy and Material Science, Berlin, Germany, 24 September 2020.

Certificate of Recognition, International Webinar on Energy, 24-26 September 2020.

VSET Fellow Award, Vebleo Science, Engineering and Technology, 2020.

Honorary Advisory Board Member, *Entropy*, 2020-pres.

Honorary Editor, *International Journal of Energy and Environmental Engineering*, 2020-pres.

Top Downloaded Paper 2018-2019, *International Journal of Energy Research*, 2020 (for A Review of Novel Thermal Management Systems for Batteries, 2018).

IETI Annual Scientific Award, International Engineering and Technology Institute, 2019.

Highly Cited Researcher, Clarivate Analytics/Web of Science, 2019.

VDGOOD International Scientist Award, VDGOOD Professional Association, 2019.

Distinguished Fellow, International Engineering and Technology Institute, 2019.

Top Downloaded Article 2017-2018, International Journal of Energy Research, Wiley, 2019.

Lifetime Achievement Award, International Research Awards on Engineering, Science and Management, 2018.

Highly Cited Researcher, Clarivate Analytics/Web of Science, 2018.

Ionizing Paper (May 2018), Research Interfaces, 2018 (for Al-Zareer, M., Dincer, I. and Rosen, M.A. 2018. A Review of Novel Thermal Management Systems for Batteries. *International Journal of Energy Research* 42(10):3182-3205).

Highly Cited Researcher, Clarivate Analytics/Web of Science, 2017.

Best Paper Award, for "Incorporating Safety into Engineering Teams and the Design Process – A Teaching Module. 3rd International Conference on Mechatronics and Robotics Engineering (ICMRE 2017), 8-12 Feb. 2017, Paris, France."

Best Poster Award, for "Vaghasia, R., Jianu, O.A. and Rosen, M.A. Experimental Study of Effect of Anolyte Concentration and Electrical Potential on Electrolyzer Performance in Thermochemical Hydrogen Production using the Cu-Cl Cycle. UOIT Student Research Showcase, Oshawa, Canada, 2017."

John B. Stirling Medal, Engineering Institute of Canada, 2016 (for leadership and distinguished service at the national level within the Institute and/or its member societies).

Certificate of Most Excellent Paper, for "Zhang, D., Wei, B. and Rosen, M.A. 2016. Overview of an Engineering Teaching Module on Robotics Safety. *Proc. 2nd International Conference on Mechatronics and Robotics Engineering*, 18-22 Feb. 2016, Nice, France."

Awardee, 2015 World's Most Influential Scientific Minds, Thomson Reuters, 2015.

Inaugural Senior Member, International Engineering and Technology Institute, 2015.

Thomson Reuters Highly Cited Researcher, Engineering Category, 2015.

Certificate of Appreciation, Minerva Canada, 2015.

Highly Cited Review Paper for 2015, *Applied Energy*, 2016 (for Self, S.J., Reddy, B.V. and Rosen, M.A. 2013. Geothermal Heat Pump Systems: Status Review and Comparison with Other Heating Options, 101:341-348).

Highly Cited Review Paper 2012 to 2013, *Applied Energy*, 2015 (for Self, S.J., Reddy, B.V. and Rosen, M.A. 2013. Geothermal Heat Pump Systems: Status Review and Comparison with Other Heating Options, 101:341-348).

Highly Cited Review Paper 2012 to 2013, *Applied Energy*, 2015 (for Rezaie, B. and Rosen, M.A. 2012. District Heating and Cooling: Review of Technology and Potential Enhancements).

Best Regular Paper Award, for "Energy and Exergy Analyses of Power Generation via an Integrated Biomass Post-Firing Combined-Cycle. *IEEE International Conference on Smart Energy Grid Engineering*, Oshawa, Ontario, Canada, 11-13 Aug. 2014."

Educational Award of Honour, Minerva Canada, 2013 (for contributions in advancing safety and health education in Canadian universities).

One of Top 25 Hottest Articles in Energy Conversion and Management for Oct.-Dec. 2013 (Intelligent optimization to integrate a plug-in hybrid electric vehicle smart parking lot with renewable energy resources and enhance grid characteristics).

Certificate of Appreciation, Minerva Canada, 2013.

President's Award, Canadian Society for Mechanical Engineering, 2012 (for exceptional service to CSME and to mechanical engineering in Canada, and presented only in special circumstances at the discretion of the President and the Board of Directors; only second presentation since award's creation in 2004).

Fellow, Canadian Society for Senior Engineers, 2012.

Certificate of Editorial Achievement, MDPI AG, Basel, Switzerland, 2012 (in recognition of contributions to a special issue of the journal *Sustainability*).

Certificate of Editorial Achievement, MDPI AG, Basel, Switzerland, 2012 (in recognition of contributions to a special issue of the journal *Entropy*).

Engineering Alumni Hall of Distinction, Faculty of Applied Science and Engineering, University of Toronto, inducted 2010.

Research Excellence Award (Senior Researcher Category), University of Ontario Institute of Technology, 2010.

Andrew H. Wilson History Award, Canadian Society for Mechanical Engineering, 2010 (for contributions to the history of engineering).

Best presentation award, for "A Review of Analytical Models for Vertical Ground Heat Exchangers. UOIT Graduate Student Conference, 12-14 May 2010, Oshawa, Ontario, Canada."

Best paper award, for "Sustainable Energy Conversion in Electrically Driven Transportation Systems. *Recent Advances in Engineering Education: Proc. 6th WSEAS Int. Conf. on Engineering Education*, 22-24 July 2009, Rhodes, Greece, pp. 124-132."

"Fast Breaking Paper" designation by Thomson Reuters' Essential Science Indicators (based on citations for papers published 2008-09), for "Role of Exergy in Increasing Efficiency and Sustainability and Reducing Environmental Impact. *Energy Policy* 2008, 36(1):128-137."

Authored one of 10 most-cited articles in *Applied Thermal Engineering* for 2005 (Efficiency analysis of a cogeneration and district energy system, 2005).

C.N. Downing Award, Canadian Society for Mechanical Engineering, 2008 (for distinguished service to CSME over many years).

Fellow, Canadian Academy of Engineering, 2007.

Julian C. Smith Medal, Engineering Institute of Canada, 2007 (for achievement in the development of Canada).

Robert W. Angus Medal, Canadian Society for Mechanical Engineering, 2007 (for outstanding contributions to the management and practice of mechanical engineering).

Certificate of Recognition, City of Oshawa, 2007.

2T5 Mid-Career Achievement Award, Faculty of Applied Science and Engineering, University of Toronto, 2006.

Honourary Chair, Second International Green Energy Conference (IGEC-2), Oshawa, Ontario, 25-29 June 2006.

Authored one of 25 most-cited articles in *International Journal of Thermal Sciences* for 2002-05 (Effect of Varying Dead-State Properties on Energy and Exergy Analyses of Thermal Systems, 2004).

Fellow, American Society of Mechanical Engineers, 2004.

Fellow, Engineering Institute of Canada, 2003.

Fellow, International Energy Foundation, 2002.

Ryerson-Sarwan Sahota Distinguished Scholar Award, Ryerson Polytechnic Univ., 1999.

Certificate of Service in recognition of outstanding service to the Canadian Society for Mechanical Engineering, 1998.

Award of Excellence in Research and Technology Development (Research Category), Ontario Ministry of Environment and Energy, 1997.

Listing in *Canadian Who's Who* directory, 2000-pres.

Listing in *International Who's Who of Professionals* directory, 1997-pres.

Listing in American Men and Women of Science directory, 1999-pres.

Certificate of Appreciation, Co-operative Education Programs, North York Board of Education, 1997.

Thesis/Research Supervisor of First Prize Recipient (M. Sherwood), Student Paper Competition, Power Division of American Society of Mechanical Engineers, 1996. M. Sherwood's thesis was entered in the competition.

Fellow, Canadian Society for Mechanical Engineering, 1996.

Ontario University Research Papers Award, Environment Committee, Ontario Natural Gas Association, 1994.

Best paper award, Int. Conf. on Thermal Energy Storage, Finland, 1994.

Invited keynote speaker for several conferences, 1993-pres.

Invited, with expenses paid, to several international conferences, 1992-93.

Link Foundation Energy Fellowship (US$21,000 award given to few, mainly American students annually), 1985.

Natural Sciences and Engineering Research Council of Canada Scholarship, 1984.

Ontario Graduate Scholarship, 1985, 1984, 1981.

Mickiewicz Award, Univ. of Toronto, 1983.

Entrance Scholarship, Univ. of Waterloo, 1977.

PROFESSIONAL ASSOCIATIONS

Professional Engineers Ontario (PEO), 1991-pres.

Ontario Society of Professional Engineers (OSPE), 2002-pres.

Canadian Society for Mechanical Engineering (CSME), 1994-pres.

American Society of Mechanical Engineers (ASME), 1991-pres.

Canadian Society for Senior Engineers (CSSE), 2012-pres.

Society for Scholarly Publishing (SSP), 2015-pres.

International Association for Hydrogen Energy (IAHE), 2009-2011.

Solar Energy Society of Canada Inc. (SESCI), 1991-1992.

OTHER PROFESSIONAL ACTIVITIES (detailed list available)

Advisory Tasks. On several industrial and academic advisory committees, including Canadian Representative on the International Energy Agency Experts Group on Cogeneration/District Cooling. Vice Chair and Program Visitor for Can. Engineering Accreditation Board (CEAB).

Teaching/Research Administration. On many departmental, faculty and university committees.

Conference Administration. Conference/Session Chair and organizer for several conferences.

Technical Editing and Reviewing. Editor in Chief and Editor for several journals. Editorial Board Member for various journals. Reviewer of journal and conference papers, project proposals, etc.

PRINCIPAL AREAS OF INTEREST

Thermodynamics: Second-Law Analysis. Theoretical development; use in process simulation codes; application to improve efficiency and performance of engineering systems.

Energy Sustainability and Energy Systems Analysis. Analysis and design; modelling and simulation; optimization; environmental impact assessment and reduction; assessing ties between energy and environment.

Energy Technologies. District energy, thermal energy storage, solar energy, hydrogen energy, nuclear energy, electricity generation and cogeneration, chillers, synthetic fuels production, integrated energy systems.

Heat Transfer. Modelling, simulation and analysis with computational and analytical methods.

Engineering Computer Aids. Numerical and computational methods; process simulation codes.

TEACHING EXPERIENCE

Mechanical Engineering Courses Taught. Law and Ethics in Engineering Practice; Heat Transfer; Basic Thermodynamics; Applied Thermodynamics; Thermal Systems Design; Thermal Power Generation; Mechanics; Dynamics of Vibrations; Engineering Graphics and Design; Fluid Mechanics.

Aerospace Engineering Courses Taught. Basic Thermodynamics; Thermodynamics.

Environmental Science and Engineering Courses Taught. Industrial Processes; Pollution Prevention (graduate); Energy and the Environment (graduate).

Thesis and Other Supervision. 50 Ph.D. theses; 60 Master's; approx. 40 Bachelor's theses; 32 visiting scholar, postdoctoral researchers and research assistants.

RESEARCH GRANTS AND CONTRACTS (detailed list available)

Approx. 75 grants and contracts (approx. total $36,000,000 of direct funding and $2,300,000 of indirect funding).

PUBLICATIONS AND PRESENTATIONS (detailed lists available)

Approx. 27 books, 130 book chapters, 790 refereed journal publications, 520 other refereed publications, 220 other publications.

Approx. 170 keynote and plenary talks, 210 scholarly addresses, 570 conference presentations.

CITATION STATISTICS

h-index: 130, citations: 69,384 (based on Google Scholar, 2025 Apr. 11)

h-index: 111, citations: 46,000 (Scopus, Elsevier, 2025 Apr. 11)

h-index: 92, citations: 31,793 (Web of Science, Clarivate, 2025 Apr. 11)

DETAILED LIST OF OTHER PROFESSIONAL ACTIVITIES FOR M. A. ROSEN

Professional Positions and Advisory Tasks

1. Member, Board of Directors, Canadian Academy of Engineering, 2019-pres.
2. Member, Nominating Committee, Canadian Academy of Engineering, 2025-pres.
3. Visiting Professor, Energy Department, Cracow University of Technology, Cracow, Poland, 20-27 May 2023.
4. Member, Global Laureate Across China, GalaTech Speakers Bureau, Dalian, China, 2021-pres.
5. External Member, Sustainability Research Group, Universidad San Ignacio de Loyola (USIL), Lima, Peru, 2022-pres.
6. Member, Finance, Investment and Audit Committee, Canadian Academy of Engineering, 2019-pres.
7. Member, Board of Governors, International Engineering and Technology Institute (IETI), 2020-pres.
8. Member, Executive Committee, International Engineering and Technology Institute (IETI), 2020-pres.
9. Founder and Member, International Association of Energy, Environment and Economy (IAEEE), 2019-pres.
10. President, Board of Directors, International Engineering and Technology Institute (IETI), 2018-pres.
11. Member, Institute of Corporate Directors, 2017-pres.
12. Consulting Professor, Department of Energy Management and Department of Mechanical Engineering, Shri Mata Vaishno Devi University, Katra, India, 2017-pres.
13. Member, Advisory Committee, Research Institute on Renewable Energy and Energy Efficiency, Universidad Nacional de San Agustin de Arequipa, Arequipa, Peru, 2017-pres.
14. Member, World Society of Sustainable Energy Technologies, 2018-pres.
15. Senior Member (inaugural), International Engineering and Technology Institute, 2015-pres.
16. Member, Best Paper Awards Selection Committee, *Entropy*, 2013.
17. Past President, Engineering Institute of Canada, 2010-12.
18. President, Engineering Institute of Canada, 2008-10.
19. Member, Board of Directors, Oshawa Power and Utilities Corporation, 2010-21.
20. Member, Advisory Board, SAYGI Turkish Canadian Academics Association, 2010-pres.
21. Member, Selection Committee, Canada's James Ham Safe Design Awards Contest, Minerva Canada Safety Management Education Inc., 2010-17.
22. Chair, Travel Award Selection Committee, *Sustainability*, 2019.

23. Member, Vision Task Force, Engineers Canada, Ottawa, 2009.
24. Member, Best Paper Selection Committee, Global Conference on Global Warming (GCGW), 6-10 July 2008, Istanbul, Turkey.
25. Judge, FIRST Robotics Competition, Greater Toronto Regional, 27-29 March 2008.
26. Member, Board of Directors, AlphaChill Corporation, Toronto, 2008-pres.
27. Vice-Chair, Council of Ontario Deans of Engineering (CODE), 2007-08.
28. Member, Board of Directors, Minerva Canada Safety Management Education Inc., 2007-pres.
29. Member, Review Committee, "Exergy Efficient Community Supply Systems," Subtask B within Int. Energy Agency Annex 49: Low Exergy Systems for High-Performance in Buildings and Communities, 2007-10.
30. Member, Advisory Group, Stronach Centre for Innovation, Magna International Inc., Aurora, Ontario, 2006-09.
31. Member, Advisory Group on Environmental Sustainability, Ontario Power Authority, 2006-16.
32. Evaluator, Oral Presentations, Canadian Society for Mechanical Engineering Student Paper Competition, 2006.
33. Chair, Judging Committee, Canadian Consulting Engineering Awards, 2006.
34. Corresponding Member, Technical Group 1: Exergy Analysis for Sustainable Buildings, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), 2006-pres.
35. President-elect, Engineering Institute of Canada, 2006-08.
36. Vice Chair, Can. Engineering Accreditation Board (CEAB) Visit Team for all engineering programs at University of Guelph, 2005.
37. Member, Judging Committee, Canadian Consulting Engineering Awards, 2005.
38. Member, Advisory Committee for Sustainable Energy Solutions, OCE-Earth and Environmental Technologies, Ontario Centres of Excellence, 2005-16.
39. Past President, Canadian Society for Mechanical Engineering (CSME), 2004-06.
40. Chair, Nominations Committee, Canadian Society for Mechanical Engineering, 2004-06.
41. Chair, Honours and Awards Committee, Canadian Society for Mechanical Engineering, 2004-06.
42. Member, Technological Education Committee, Council for Automotive Human Resources, 2004-07.
43. Member, Honours, Awards and Fellowships Committee, Engineering Institute of Canada, 2004-06.

44. Chair, Energy Policy and Planning Subdivision, Advanced Energy Systems Technical Division, Canadian Society for Mechanical Engineering, 2004-pres.
45. Member, Executive, Advanced Energy Systems Technical Division, Canadian Society for Mechanical Engineering, 2004-pres.
46. Member, International Thermonuclear Experimental Reactor (ITER) Review Committee for Canadian and Ontario Governments, 2003.
47. Member, Ad Hoc Committee on Advocacy, National Council of Engineering Institute of Canada, 2003-06.
48. President, Canadian Society for Mechanical Engineering (CSME), 2002-04.
49. Senior Vice President and Chair of Finance Committee, Canadian Society for Mechanical Engineering (CSME), 2001-02.
50. Advisor and Reviewer, Low Exergy Systems for Heating and Cooling in Buildings, project within Int. Energy Agency Annex 37: Energy Conservation in Buildings and Community Systems, 2000-03.
51. Program Visitor (Mechanical Engineering) for Can. Engineering Accreditation Board (CEAB)/Canadian Council of Professional Engineers (CCPE) substantial-equivalency assessment of Technical University of Graz, Austria, 2000.
52. Advisory Member, Mechanical Engineering Steering Committee for 2000-2002 NSERC Reallocation Exercise, 2000-02.
53. Member, Advisory Committee for Mechanical Engineering, CAD/CAM and Tool and Die Programs, Centennial College, Toronto, 2001-pres.
54. Program Visitor (Mechanical Engineering) for Can. Engineering Accreditation Board (CEAB) visit to Memorial Univ., 1999.
55. Director and Technical Advisor, Pelleja Power Systems, Markham, Feb. 1998-2008.
56. Project Advisor, Pavement Laboratory, Quebec Ministry of Transportation, for project "A Method for Evaluating the Environmental Impact of Road Materials using Exergy Analysis" (R 295.1), 1997-98.
57. Member, Systems Analysis Technical Committee, Advanced Energy Systems Div., ASME, 1997-pres.
58. Faculty Advisor at Ryerson, Engineering Society for Advancing Mobility (SAE), 1996-97.
59. Canadian Representative, International Energy Agency (IEA) Experts Group on Cogeneration/District Cooling, 1993-96.
60. Program Visitor (Aerospace Engineering) for Can. Engineering Accreditation Board (CEAB) visit to Carleton Univ., 1994.
61. Expert Witness, for South Bruce Economic Development Corp., in Ont. Hydro Environmental Assessment Hearings, 1991-93.
62. Member, Advisory Committee, Dynawatt Energy Research Corp., Toronto, 1988-94.

63. Member, Patent Committee, Ryerson, 1990-95.

Teaching/Research Administration

1. Member, Teaching Faculty Promotion Review Committee (PRC), Ontario Technology University, 2024-pres.
2. Chair, Outstanding Reviewers Awards Committee, *Sustainability*, 2018-pres.
3. Member, 6th Annual President's Futures Forum Planning Committee, Ontario Technology University, 2020-pres.
4. Chair, Sustainability Travel Awards Committee, *Sustainability*, 2020-pres.
5. Member, Tenure Appeals Committee, Univ. of Ontario Institute of Technology, 2012-13.
6. Member, Scientific Committee, Smart Net-zero Energy Buildings Strategic Research Network (SNEBRN), 2011-pres.
7. Member, Program Committee for Mechanical, Manufacturing and Automotive Engineering, Faculty of Engineering and Applied Science, Univ. of Ontario Institute of Technology, 2009-10.
8. Member, Program Council for Mechanical, Manufacturing and Automotive Engineering, Faculty of Engineering and Applied Science, Univ. of Ontario Institute of Technology, 2010-pres.
9. Member, Student Awards Committee, Department of Automotive, Manufacturing and Mechanical Engineering, Univ. of Ontario Institute of Technology, 2012-pres.
10. Member, Student Awards Committee, Faculty of Engineering and Applied Science, Univ. of Ontario Institute of Technology, 2009-11.
11. Chair, Workplace Covenant Committee, Faculty of Engineering and Applied Science, Univ. of Ontario Institute of Technology, 2009.
12. Chair, Research Award Selection Committee, Faculty of Engineering and Applied Science, Univ. of Ontario Institute of Technology, 2009.
13. Member, Promotion Appeals Committee, Univ. of Ontario Institute of Technology, 2008-12.
14. Member, Internal Adjudication Committee Meeting for NSERC Postdoctoral Fellow Program, Univ. of Ontario Institute of Technology, 2007.
15. Judge, NSERC-GMCL Chair in Innovative Design Engineering Student Design Thesis Competition, Faculty of Engineering and Applied Science, Univ. of Ontario Institute of Technology, 2007.
16. Judge, NSERC-GMCL Chair in Innovative Design Engineering Student Capstone Design Competition, Faculty of Engineering and Applied Science, Univ. of Ontario Institute of Technology, 2006.
17. Chair, Steering Committee, NSERC-General Motors of Canada Limited Chair in Innovative Design Engineering, Univ. of Ontario Institute of Technology, 2005-08.

18. Member, Information Technology Strategy Board, Univ. of Ontario Institute of Technology, 2004-07.
19. Chair, Tenure Appeal Committee, Univ. of Ontario Institute of Technology, 2005-07.
20. Member, Three Year Review Appeal Committee, Univ. of Ontario Institute of Technology, 2005-07.
21. Member, Research Board, Univ. of Ontario Institute of Technology, 2003-07.
22. Canadian Society for Mechanical Engineering Faculty Advisor, Univ. of Ontario Institute of Technology, 2002-05.
23. Member, Associate Provost-Research and Graduate Studies Search Committee, Univ. of Ontario Institute of Technology, 2003-04.
24. Member, International Steering Committee, Int. Network for Engineering Education and Research (iNEER), 2003-pres.
25. Member, Int. Building Performance Simulation Association - Canada, 2002-pres.
26. Member, Research Ethics Board, Ryerson, 2001-02.
27. Member, Int. Network for Engineering Education and Research (iNEER), 2001-pres.
28. Member, Graduate Program Committee, Dept. of Mechanical, Aerospace and Industrial Engineering, Ryerson, 2000-02.
29. Member, Graduate Program Committee, Environmental Applied Science and Management Graduate Program, Ryerson, 2000-02.
30. Member, Program Council for Environmental Applied Science and Management Graduate Program, Ryerson, 1999-02.
31. Member, School of Graduate Studies, Ryerson, 1999 (date of inception)-pres.
32. Member, Great Lakes Research Consortium, 1999-pres.
33. Assoc. Member, Centre for Research in Environment and Space Technology (CRESTech), 1997-pres.
34. Member, Chairs Advisory Committee, Chairs/Directors Orientation and Renewal Workshops, Ryerson, 1999-2000.
35. Member, Selection Committee, Summer Academic Research Assistant Program, Ryerson, 1998.
36. Member, Proposal/Award Selection Committee, Link Energy Foundation, Florida, 1996-98.
37. Department Contact at Ryerson Univ., North American Design Institute (NADI), 1997-2002.
38. Member, Review Board for Track 2 and 3 Funding Proposals, Ryerson, 1996-98.
39. Supervisor of Co-operative Education Students, Co-operative Education Programs, North York Board of Education, 1996-1997.

40. Member, Interim Graduate Council, Ryerson, 1995-97 (Member, Student Services and Admissions and Studies Subcommittees, 1995-97; Chair, Admissions and Studies Subcommittee, 1997).
41. Member, Development Committee for Environmental Applied Science and Management Graduate Program, Ryerson, 1995-99.
42. Member, Advisory Committee for Engineering/Management Graduate Program, Ryerson, 1995-97.
43. Member, Vice President-Academic Search Committee, Ryerson, 1993-94.
44. Member, Dean of Business Search Committee, Ryerson, 1995-96.
45. Member, Faculty Promotion Committee, Faculty of Engineering and Applied Science, Ryerson, 1993-99. Chair of Faculty Promotion Subcommittees for 2 applications in 1997-98, and 2 applications in 1998-99.
46. Chair, Research and Graduate Studies Committee, Dept. of Mech. Eng., Ryerson, 1992-97; Committee Member, 1997-2002.
47. Director, Laboratory Activities, Dept. of Mechanical Eng., Ryerson, 1992-94.
48. Chair, Department Grading Practices Committee, Dept. of Mech. Eng., Ryerson, 1992-96.
49. Member, Aerospace and Mechanical Engineering Curriculum/Program Committees, Dept. of Mech. Eng., Ryerson, 1989-2002.
50. Member, Energy Services Company (ESCO) Project Evaluation Committee, Ryerson, 1991-97.
51. Member, Joint Committee on Future Status of Advanced Degrees in Education, Ryerson, 1990-92.
52. Member, NSERC Research Committee, Ryerson, 1991-93.
53. Supervisor, Visiting Scholar (Prof. Ti Guan, East China University of Chemical Technology), 1990-92.
54. Member, Department Appointments Committee, Dept. of Mech. Eng., Ryerson, 1990-99.
55. Member, Thermodynamics Laboratory Committee, Dept. of Mech. Eng., Ryerson, 1989-91.
56. Member, Thesis Standards Committee, Dept. of Mech. Eng., Ryerson, 1989-91.
57. Coordinator, Annual Seminar Series, Dept. of Mech. Eng., Ryerson, 1989-94.
58. Coordinator, Thermal Sciences Curriculum Committee, Dept. of Mech. Eng., Ryerson, 1989.
59. Member, Computer Applications Committee, Dept. of Mech. Eng., Ryerson, 1989.
60. Member, Joint Research Team, Faculty of Technology/Centre for Advanced Technology Education/Office of Research and Innovation, Ryerson, 1987-90.
61. Member, Computer Overview Group, Faculty of Technology, Ryerson, 1986-91.

Conference Administration

1. Co-coordinator, Round Table on Sustainability and Sustainable Development: Bridging Engineering and Applied Psychology. 31st International Congress of Applied Psychology (ICAP 2026), 21-25 Jul. 2026, Florence, Italy (invited).
2. Technical Program Committee Chair, 5th International Conference on New Energy and Power Engineering (ICNEPE 2025), 14-16 Nov. 2025, Guangzhou, China.
3. Chair, Program Committee, 2025 IEEE International Power and Sustainable Energy Technologies Conference (PSETC 2025), 22-24 Aug. 2025, Singapore.
4. Member, Scientific Committee, 4th International Conference on Global Entrepreneurship Summit 2025, 19-20 Aug. 2025, Toronto, Canada.
5. Conference General Chair, 2025 4th International Conference on Advanced Manufacturing Technology and Manufacturing System (ICAMTMS 2025), 8-10 Aug. 2025, Wuhu, Anhui, China.
6. Technical Program Committee Chair, 2025 4th International Symposium on Aerospace Engineering and Systems (ISAES 2025), 25-27 July 2025, Nanjing, China.
7. Chair, 7th International Conference on Energy Systems and Electrical Power (ICESEP 2025), 20-22 Jun. 2025, Wuhan, China.
8. Honourary Chair, 5th International Congress on Energy Chemistry and Engineering 2025 (ICECE-2025), 19-21 Sep. 2025, Chengdu, China.
9. Member, Advisory Committee, 2025 4th International Symposium on Materials, Physics and Computers (MPC), 9-11 Aug. 2025, Hong Kong, China.
10. Member, Advisory Committee, 2025 4th IETI Materials and Engineering Forum (MEF), 9-11 Aug. 2025, Hong Kong, China.
11. Conference General Chair, 9th International Conference on Clean Energy and Power Generation Technology (CEPGT 2024), 27-29 Dec. 2024, Zhenjiang, China.
12. Member, International Scientific Committee, 4th International Conference on Geoenergetics and Ground-Geothermal Heat Pumps, 16-18 Oct. 2024, Laboratory of Geoenergetics, Drilling and Geoengineering Dept., Drilling, Oil and Gas Faculty, AGH University of Science and Technology, Krakow and Polhale, Poland.
13. Co-chair, 4th International Conference on New Energy and Power Engineering (ICNEPE 2024), 8-10 Nov. 2024, Guangzhou, China.
14. Chair, 2024 2nd Asia Conference on Environmental Science, Green Energy and Applications (ESGEA 2024), 25-27 Oct. 2024, Beijing, China.
15. Chair, Steering Committee, 2024 Asia Conference on Electrical and Power Engineering (ACEPE 2024), 13-15 Dec. 2024, Suzhou, China.
16. Member, International Scientific Committee, 4th International Conference on Energy, Environment, and Energy Storage, 5-7 September 2024, Cappadocia, Turkey.
17. Member, Scientific Committee, 3rd International Conference on Global Entrepreneurship Summit 2024, 19-20 Aug. 2024, Toronto, Canada.

18. Publication Chair. 9th International Conference on New Energy and Future Energy System (NEFES 2024), 29 Jul.-1 Aug. 2024, Győr, Hungary.
19. Co-chair, North American Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 16-20 Jun. 2024, Toronto, Canada (cancelled prior to event).
20. Chair, 6th International Conference on Energy Systems and Electrical Power (ICESEP 2024), 21-23 Jun. 2024, Wuhan, China.
21. Member, International Advisory Board, 7th Symposium on Circular Economy and Urban Mining (SUM 2024), 15-17 May 2024, Capri, Italy.
22. Co-chair, International Conference on Social Sciences and Sustainable Development (ICSSSD2024), 26-28 Apr. 2024, Changsha, China.
23. Member, Advisory Committee, 14th International Conference on Power, Energy and Electrical Engineering (CPEEE 2024), 24-26 February 2024, Tokyo, Japan.
24. Co-Chair, 8th International Conference on Clean Energy and Power Generation Technology (CEPGT 2023), 15-17 Dec. 2023, Zhuhai, China.
25. Member, International Scientific Committee, 3rd National Seminar on Geoenergetics and Geothermal Heat Pumps, 20-22 Sept. 2023, Laboratory of Geoenergetics, Drilling and Geoengineering Dept., Drilling, Oil and Gas Faculty, AGH University of Science and Technology, Krakow and Polhale, Poland.
26. Member, Technical Program Committee, Int. Conf. on Smart Energy Grid Engineering (SEGE 2023), 13-15 Aug. 2023, Oshawa, Ontario, Canada.
27. Honourary Chair, 3rd International Congress on Energy Chemistry and Engineering 2023 (ICECE-2023), 21-23 July 2023, Chengdu, China.
28. Member, Scientific Committee, 6th International Scientific and Technical Conference on Modern Power Systems and Units (MPSU), 24-26 May 2023, Cracow, Poland.
29. Co-chair, Session 2A, 6th International Scientific and Technical Conference on Modern Power Systems and Units (MPSU), 24-26 May 2023, Cracow, Poland.
30. Member, Advisory Committee, International Conference on Energy Science and Environmental Engineering (CESEE 2023), 14-16 Apr. 2023, Sanya, China.
31. Chair, International Advisory Board, 7th International Conference on Clean Energy and Power Generation Technology (CEPGT 2022), 9-11 Dec. 2022, Zhenjiang, China.
32. Member, Technical Program Committee, Int. Conf. on Smart Energy Grid Engineering (SEGE 2022), 10-12 Aug. 2022, Oshawa, Ontario, Canada.
33. Member, International Advisory Committee, 14th International Green Energy Conference (IGEC-XIV), 4-8 July 2022, online.
34. Chairperson, Energy Engineering and Power Technology World Forum (Power-Energy-2022), 13-15 Jun. 2022, Rome, Italy.

35. Chair, International Meet on Civil, Structural and Environmental Engineering (CIVILMEET2022), 23-25 May 2022, Munich, Germany.
36. Member, Scientific Committee, 3rd International Conference on Geological and Environmental Sustainability (Geoscience Congress 2022), 21-22 Apr. 2022, online.
37. Member, Scientific Committee, 2nd International Conference on Geological and Environmental Sustainability, 16-17 May 2022, Dubai, United Arab Emirates.
38. Member, Scientific Committee, 2nd International E-Conference on Plant Science and Biology, 18-19 Apr. 2022, Dubai, online.
39. Member, Scientific and Organizing Committees, International Conference on Renewable and Sustainable Energy (RENEWABLEMEET 2022), 21-23 March 2022, Dubai, United Arab Emirates.
40. Chair, International Meet on Biotechnology and Bioengineering (BIOTECHMEET2021), 16-18 Sept. 2021, Porto, Portugal.
41. Member, Technical Program Committee, Int. Conf. on Smart Energy Grid Engineering (SEGE 2021), 11-13 Aug. 2021, Oshawa, Ontario, Canada.
42. Member, International Advisory Board, TUBA World Conference on Energy Science and Technology (TUBA WCEST-2021), 8-12 Aug. 2021, webinar.
43. Honorary Chair, International Congress on Energy Chemistry and Engineering 2021 (ICECE-2021), 18-21 June 2021, Chengdu, China.
44. Member, International Advisory Committee, International Green Energy Conference (IGEC-XIII), 15-18 June 2021, Tianjin, China.
45. Member, Advisory Committee, 2020 Materials Engineering Forum (MEF), 29-31 December 2020, Hong Kong.
46. Member, International Advisory Committee, First Virtual International Conference on Advances in Renewable and Sustainable Energy Systems (ICARES-2020). 3-5 Dec. 2020, Kattankulathur, Chennai, India.
47. Member, International Scientific Committee, International Conference on Energy, Environment and Storage of Energy (ICEESEN 2020), 19-21 Nov. 2020, Kayseri, Turkey.
48. Member, Scientific Advisory Board, 5th Conf. on Renewable Energy Sources – Research and Business (RESRB-2020), 7-8 Sept. 2020, Brussels, Belgium.
49. Member, Technical Program Committee, Int. Conf. on Smart Energy Grid Engineering (SEGE 2020), 12-14 Aug. 2020, Oshawa, Ontario, Canada.
50. Member, Organizing Committee, 8th Global Summit and Expo on Pollution Control, 24-25 August 2020, webinar.
51. Chair (overall), 8th International Congress & Expo on Biotechnology and Bio-engineering (Biotechnology 2020), 22-23 June 2020, Toronto, Canada (held as webinar 24-25 July 2020).

52. Member, Organizing Committee, Frontiers in Green and Sustainable Energy, 21-22 Oct. 2019, Toronto, Canada.
53. Member, Organizing Committee, Advances in Biofuels and Bioenergy, 21-22 Oct. 2019, Toronto, Canada.
54. Member, Technical Program Committee, Int. Conf. on Smart Energy Grid Engineering (SEGE 2019), 12-14 Aug. 2019, Oshawa, Ontario, Canada.
55. Member, International Advisory Committee, 10th International Conference on Hydrogen Production (ICH2P-2019), 15-17 May 2019, Cluj-Napoca, Romania.
56. Member, Advisory Committee, 2nd International Conference on Energy and Power (ICEP2018), 13-15 Dec. 2018, Sydney, Australia.
57. Member, Scientific Advisory Board, 13th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 30 Sept.-4 Oct., 2018, Palermo, Italy.
58. Member, Organizing Committee, 2nd Global Summit on Renewable Energy & Emerging Technologies, 5-6 Oct. 2018, Barcelona, Spain.
59. Member, Technical Program Committee, International Conference on Smart Energy Systems and Technologies, 10-12 Sep. 2018, Seville, Spain.
60. Member, Organizing Committee, 6th International Conference on Green Energy and Expo, 29-31 Aug. 2018, Toronto, Canada.
61. Member, Technical Program Committee, Int. Conf. on Smart Energy Grid Engineering (SEGE 2018), 12-15 Aug. 2018, Oshawa, Ontario, Canada.
62. Member, Scientific Committee, 3rd International Conference on Heat Transfer Devices (ICHTD'17), 12-14 Apr. 2018, Budapest, Hungary.
63. Co-chair, 6th World Sustainability Forum, 27-28 Jan. 2017, Cape Town, South Africa.
64. Member, Scientific Committee, 2nd International Conference on Heat Transfer Devices (ICHTD'17), 7-8 Apr. 2017, Barcelona, Spain.
65. Member, International Advisory Committee, 3rd International Conference on Bioenergy, Environment and Sustainable Technologies (BEST 2017), 22-25 Jan. 2017, Tiruvannamalai, Tamil Nadu, India.
66. Member, Technical Program Committee, 9th Asia-Pacific Power and Energy Engineering Conference (APPEEC 2017), 15-17 Apr. 2017, Chengdu, China.
67. Member, International Advisory Committee, International Conference on Biofuels and Applications (ICBFA 2016), 22-24 Dec. 2016, Bhubaneswar, Odisha, India.
68. Member, Scientific Committee, 10th Clean Energy Symposium (CES), 24-26 Oct. 2016, Istanbul.
69. Chair, Scientific Advisory Committee, 5th World Sustainability Forum, 7-9 Sep. 2015, Basel, Switzerland.

70. Member, Technical Program Committee, Int. Conf. on Smart Energy Grid Engineering (SEGE 2017), 14-17 Aug. 2017, Oshawa, Ontario, Canada.
71. Member, Technical Program Committee, Int. Conf. on Smart Energy Grid Engineering (SEGE 2016), 21-24 Aug. 2016, Oshawa, Ontario, Canada.
72. Member, Technical Program Committee, 8th Asia-Pacific Power and Energy Engineering Conference (APPEEC 2016), 15-17 Apr. 2016, Suzhou, China.
73. Member, Technical Program Committee, 2016 Spring World Congress on Engineering and Technology (SCET 2016), 17-19 Apr. 2016, Suzhou, China.
74. Member, Scientific Committee, International Conference on Heat Transfer Devices (ICHTD'16), 4-5 Apr. 2016, Prague, Czech Republic.
75. Member, International Advisory Committee, International Conference on Viable Energy Trends (InVEnT-2015), 1-4 Nov. 2015, Sharjah, United Arab Emirates.
76. Member, Scientific Advisory Board, 10th Conf. on Sustainable Development of Energy, Water and Environment Systems (SDEWES2015), 27 Sept.-3 Oct. 2015, Dubrovnik, Croatia.
77. Member, Technical Program Committee, Int. Conf. on Smart Energy Grid Engineering (SEGE 2015), 17-19 Aug. 2015, Oshawa, Ontario, Canada.
78. Member, International Scientific Advisory Committee, The Energy and Materials Research Conference, 25-27 Feb. 2015, Madrid, Spain.
79. Member, Executive Organizing Committee, 6th Int. Conf. on Hydrogen Production, 3-6 May 2015, Oshawa, Ontario, Canada.
80. Member, Technical Program Committee, 7th Asia-Pacific Power and Energy Engineering Conference (APPEEC 2015), 12-14 Apr. 2015, Beijing, China.
81. Member, Technical Program Committee, 2015 Spring World Congress on Engineering and Technology (SCET 2015), 14-16 Apr. 2015, Beijing, China.
82. Chair, 4th World Sustainability Forum, 1-30 Nov. 2014, Sciforum Electronic Conferences Series.
83. Coordinator, Workshop: New Journal for 100% Renewable Energy, 4th IRENEC Int. 100% Renewable Energy Conference, 26-28 June 2014, Istanbul.
84. Member, Organization Committee, 2nd Int. Conf. on Energy and Sustainability, 19-21 Sep. 2014, Zhengzhou, China.
85. Member, Technical Program Committee, 2014 IEEE Int. Conf. on Smart Energy Grid Engineering (SEGE'14), 11-13 Aug. 2014, Oshawa, Ontario, Canada.
86. Member, Scientific Advisory Board, 9th Conf. on Sustainable Development of Energy, Water and Environment Systems, 20-27 Sept. 2014, Venice-Istanbul.
87. Member, Scientific Committee, 8th Biennial Building Simulation Conf. of IBPSA-Canada (eSim 2014), 7-10 May 2014, Ottawa, Ontario, Canada.

88. Member, Scientific Committee, Int. Conf. on Environment, Energy, Ecosystems and Development, 28-30 Sept. 2013, Venice, Italy.

89. Member, Scientific Committee, 12th Joint European Thermodynamics Conf., 1-5 July 2013, Brescia, Italy.

90. Chair, Session on District Heating, Joint Nuclear Energy Agency/International Atomic Energy Agency Expert Workshop on Technical and Economic Assessment of Non-Electric Applications of Nuclear Energy, 4-5 Apr. 2013, Paris.

91. Co-moderator, Panel Session on Integrating Health and Safety into the Engineering Curriculum, Minerva Canada Learning Forum, 15 May 2013, Toronto, Ontario, Canada.

92. Chair, 3rd World Sustainability Forum, 1-30 Nov. 2013, Sciforum Electronic Conferences Series.

93. Local Chair, 2013 IEEE Int. Conf. on Smart Energy Grid Engineering (SEGE'13), 28-30 Aug. 2013, Oshawa, Ontario, Canada.

94. Member, Organization Committee, International Conference on Energy and Sustainability, 18-20 Oct. 2013, Beijing, China.

95. Member, Scientific Committee, Building Simulation 2013: 13th Int. Conf. of the International Building Performance Simulation Assoc., 25-30 Aug. 2013, Chambéry, France.

96. Member, International Scientific and Advisory Committee, 6th Int. Exergy, Energy and Environment Symp., 1-4 July 2013, Rize, Turkey.

97. Member, International Scientific Advisory Body, Int. Conf. on Energy Resources & Technologies for Sustainable Development, 7-9 Feb. 2013, Shibpur, India.

98. Chair, 2nd World Sustainability Forum, 1-30 Nov. 2012, Sciforum Electronic Conferences Series.

99. Organizer and Chair, Specialized Session on Energy Sustainability, 11th Int. Conf. on Sustainable Energy Technologies, 2-5 Sept. 2012, Vancouver, B.C., Canada.

100. Chair, 1st World Sustainability Forum, 1-30 Nov. 2011, Sciforum Electronic Conferences Series.

101. Member, Technical Program Committee, IEEE Int. Conf. on Smart Grid Engineering (SGE 2012), 27-29 Aug. 2012, Oshawa, Ontario, Canada.

102. Member, International Scientific Advisory Committee, The Energy and Materials Research Conference, 20-22 June 2012, Torremolinos, Malaga, Spain.

103. Member, International Scientific and Advisory Committee, 7th Int. Green Energy Conf. and 1st DNL Conf. on Clean Energy, 28-30 May 2012, Dalian, China.

104. Member, Scientific Committee, 7th Biennial Building Simulation Conf. of IBPSA-Canada (eSim 2012), 2-3 May 2012, Halifax, Nova Scotia, Canada.

105. Member, Technical Program Committee, 2nd Int. Conf. on Energy, Environment and Sustainable Development, 27-29 Feb. 2012, Jamshoro, Pakistan.

106. Co-chair, Session on Rational End Use, 4th World Engineering Convention, 4-9 Sept. 2011, Geneva, Switzerland.
107. Member, Scientific Committee, Int. Conf. on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 26-29 June 2012, Perugia, Italy.
108. Member, Scientific Committee, 6th International Ege Energy Symposium and Exhibition (IEESE), 28-30 June 2012, Izmir, Turkey.
109. Member, Scientific Advisory Committee, 1st World Sustainability Forum, 1-30 Nov. 2011, Sciforum Electronic Conferences Series.
110. Member, Scientific Advisory Committee, 2nd World Sustainability Forum, 1-30 Nov. 2012, Sciforum Electronic Conferences Series
111. Organizer and Chair, Specialized Session on Climate Change and Sustainable Energy: Actions and Transition to a Lower Carbon Economy, Global Conference on Global Warming, 11-14 July 2011, Lisbon, Portugal.
112. Chair, Keynote Session on Impacts of Climate Change on Biodiversity, and the Implications for Conservation, Global Conference on Global Warming, 11-14 July 2011, Lisbon, Portugal.
113. Member, Scientific Committee, 12th Building Performance Simulation Association Int. Conf., 14-16 November 2011, Sydney, Australia.
114. Member, International Scientific and Advisory Committee, Fifth Int. Exergy, Energy and Environment Symp., 12-15 Dec. 2011, Luxor, Egypt.
115. Member, International Advisory Board, Global Conference on Global Warming (GCGW) 2011, 11-14 July 2011, Lisbon, Portugal.
116. Member, International Scientific and Advisory Committee, 6th International Green Energy Conference (IGEC-6), 5-9 June 2011, Eskisehir, Turkey.
117. Member, International Scientific Committee, World Sustainable Building Conf., 1-4 March 2011, London.
118. Chair, Session on Coal Power Plants, 23rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2010), 14-17 June 2010, Lausanne, Switzerland.
119. Chair, Keynote Lecture Session, International Green Energy Conference, 12-16 June 2010, Waterloo, Ontario.
120. Member, International Scientific and Advisory Committee, 5th International Green Energy Conference (IGEC-5), 1-3 June 2010, Waterloo, Ont.
121. Co-Chair, 5th IASME/WSEAS Int. Conf. on Energy and Environment, 23-25 Feb. 2010, Cambridge, UK.
122. Co-Chair, 5th IASME/WSEAS Int. Conf. on Water Resources, Hydraulics and Hydrology, 23-25 Feb. 2010, Cambridge, UK.

123. Co-Chair, 4th IASME/WSEAS Int. Conf. on Geology and Seismology, 23-25 Feb. 2010, Cambridge, UK.
124. Member, Advisory Board, 5th International Ege Energy Symposium and Exhibition (IEESE), 27-30 June 2010, Denizli, Turkey.
125. Member, Technical Program Committee, 2010 WASE International Workshop on Mechanical Engineering, Automation and Transportation Engineering (IWMAT 2010), 24 July 2010, Beidaihe, China.
126. Member, Technical Program Committee, 2010 WASE International Workshop on Energy, Electronic and Communication Engineering (IWEEC 2010), 24 July 2010, Beidaihe, China.
127. Member, Technical Program Committee, 2d WASE International Conference on Ubiquitous Computing, MANET and Information Dissemination Services (UMI'09), 11-12 Sept. 2009, Taiyuan, China.
128. Member, Technical Program Committee, 2d WASE International Conference on Advanced Intelligence, Software Engineering and Knowledge Management (ASK'09), 12-13 Sept. 2009, Taiyuan, China.
129. Member, Technical Program Committee, 2009 WASE International Conference on Information, Automation Engineering (IAE'09), 20-21 Nov. 2009, Dalian, China.
130. Member, Advisory Panel, Canada Hong Kong Engineering Business Conference, 5 November 2009, Hong Kong.
131. Moderator, Panel Discussion on The Future of Engineering, Canada Hong Kong Engineering Business Conference, 5 November 2009, Hong Kong.
132. Member, Technical Program Committee, 2009 WASE Global Congress on Science Engineering, 25-27 Dec. 2009, Taiyuan, China.
133. Chair, Session on Applied Mechanics – Simulation, 2nd WSEAS Int. Conf. on Engineering Mechanics, Structures and Engineering Geology, 22-24 July 2009, Rhodes, Greece.
134. Chair, Session on Neural Networks, Fuzzy Systems, Electronics, 13th WSEAS International Conference on Circuits, 22-24 July 2009, Rhodes, Greece.
135. Chair, Specialized Session on Sustainable Energy and Global Warming, Global Conference on Global Warming (GCGW) 2009, 5-9 July 2009, Istanbul, Turkey.
136. Member, Scientific Committee, Building Simulation 2009: 11th International Building Performance Simulation Association Conference and Exhibition, 27-30 July 2009, Glasgow, Scotland.
137. Member, International Advisory Board, Global Conference on Global Warming (GCGW) 2009, 5-9 July 2009, Istanbul, Turkey.
138. Member, International Scientific and Advisory Committee, Fourth Int. Energy, Exergy and Environment Symp., 19-23 Apr. 2009, Sharjah, United Arab Emirates.
139. Co-Chair, 4th IASME/WSEAS Int. Conf. on Energy and Environment, 24-26 Feb. 2009, Cambridge, UK.

140. Co-Chair, 4th IASME/WSEAS Int. Conf. on Water Resources, Hydraulics and Hydrology, 24-26 Feb. 2009, Cambridge, UK.

141. Member, International Advisory and Scientific Committee, Fourth International Green Energy Conference (IGEC-4), 20-22 Oct. 2008, Beijing.

142. Chair, Session on "Resources of Primary Energy, Hydrogen Production and Nuclear Energy," 21st Int. Conf. on Efficiency, Cost, Optimization, Simulation and Environmental Aspects of Energy Systems (ECOS), 24-27 June 2008, Krakow, Poland

143. Chair, Session on "Renewable Resources," Canadian Society for Mechanical Engineering Forum 2008, 5-8 June 2008, Ottawa.

144. Co-chair, Session on "Hydrogen," 29th Annual Canadian Nuclear Society Conference: Sustainable Development through Nuclear Technology, 1-4 June 2008, Toronto.

145. Facilitator, Workshop on "Safety, Health and Environment Teaching Practices," Minerva Engineering Summer Institute, 25-28 May 2008, Mississauga, Ontario.

146. General Co-Chair, Opening Plenary Session, 3rd IASME/WSEAS Int. Conf. on Energy and Environment (EE'08), 23-25 Feb. 2008, Cambridge, UK.

147. Member, Organizing/Steering Committee, International Conference on Hydrogen Production (ICH2P), 3-6 May 2009, Oshawa, Ontario.

148. Chair, Session 8-B: Hydrogen Production and Alternative Vehicles, International Conference on Hydrogen Production (ICH2P), 3-6 May 2009, Oshawa, Ontario.

149. Member, International Advisory Board, Global Conference on Global Warming (GCGW), 6-10 July 2008, Istanbul, Turkey.

150. Member, Program Committee, Mobilizing Minds for a Better Ontario: Energy, Council of Ontario Universities conference, 18 Sept. 2007, Toronto.

151. Co-chair, Mini-Symposium on Energy and Thermal-Fluid Systems, 21st Canadian Congress of Applied Mechanics, 3-7 June 2007, Toronto.

152. Chair, Session HTCV2: Heat Transfer - Convection 2, 21st Canadian Congress of Applied Mechanics, 3-7 June 2007, Toronto.

153. Co-Organizer, Session AES-3A on "Energy Systems - Exergy Analysis," Symp. on Thermodynamics and the Design, Analysis, and Improvement of Energy Systems, ASME Int. Mechanical Engineering Congr. and Expo., 5-10 Nov. 2006, Chicago.

154. Chair, Session WA2: Mechanical Engineering Applications 3, Canadian Society for Mechanical Engineering Forum 2006, 21-23 May 2006, Kananaskis, Alberta.

155. Chair, Track 8, Session 1: GHG Emissions from Large Point Sources, Engineering Institute of Canada Climate Change Conf., 10-12 May 2006, Ottawa.

156. Chair, Track 3B, Paper Session I-B: Renewables I, Engineering Institute of Canada Climate Change Conf., 10-12 May 2006, Ottawa.

157. Moderator, Panel Session on Energy Research and Development: Ontario's Perspective, Second International Green Energy Conference (IGEC-2), 25-29 June 2006, Oshawa, Ontario.
158. Reporter, Session on Energy Technology, Canadian Energy Challenge Workshop: An Engineering Perspective, 5 May 2006, Oshawa, Ontario.
159. Member, International Scientific and Advisory Committee, Third Int. Energy, Exergy and Environment Symp., 1-5 July 2007, Evora, Portugal.
160. Member, International Advisory Committee, Organizing Committee and Local Advisory Committee, Second International Green Energy Conference (IGEC-2), 25-29 June 2006, Oshawa, Ontario.
161. Chair, Empowering the Learner: Conf. on Teaching and Learning in Engineering Education, 13 May 2005, Oshawa, Ontario.
162. Co-chair, Session on "Education and Communication," 26th Annual Canadian Nuclear Society Conference, 12-15 June 2005, Toronto.
163. Member, International Scientific and Advisory Committee, Second Int. Exergy, Energy and Environment Symp., 3-7 July 2005, Kos, Greece.
164. Co-chair, Session on "Renewable Energy – Biothermal and Engineering Applications," Second Int. Exergy, Energy and Environment Symp., 3-7 July 2005, Kos, Greece.
165. Chair, Organizing Committee, International Green Energy Conference (IGEC-1), 12-15 June 2005, Waterloo, Ont.
166. Member, International Scientific and Advisory Committee, International Green Energy Conference (IGEC-1), 12-15 June 2005, Waterloo, Ont.
167. Member, Scientific Committee, Int. Conferences on Applied Thermodynamics, 4-6 July 2001, 18-20 May 2005, Istanbul, Turkey.
168. Chair, Session on "Education I," CSME Mechanical Engineering Forum, 1-4 June 2004, London, Ont.
169. Member, Scientific Committee, Third Int. Symp. on Heat Transfer Enhancement and Energy Conservation (ISHTEEC 2004), 12-15 Jan. 2004, Guangzhou, China.
170. Member, International Steering Committee, International Conference on Engineering Education, Int. Network for Engineering Education and Research (iNEER), 2003-pres.
171. Member, Int. Organizing Committee, Int. Conf. on Thermal Engineering Theory and Applications, 31 May-4 June 2004, Beirut, Lebanon.
172. Member, Scientific Committee, Canadian Conf. on Building Energy Simulation (eSim), 9-11 June 2004, Vancouver; 11-13 Sept. 2002, Montreal.
173. Co-Chair, Session on "Energy Systems and Design," Symp. on Thermodynamics and the Design, Analysis, and Improvement of Energy Systems, ASME Int. Mechanical Engineering Congr. and Expo., 16-21 Nov. 2003, Washington, D.C.

174. Member, International Scientific and Advisory Committee, First Int. Exergy, Energy and Environment Symp., 13-17 July 2003, Izmir, Turkey.

175. Member, Canadian Conf. Advisory Board, Int. Conf. on the Future of Engineering Education, 16-18 May 2003, Montreal.

176. Co-organizer, CSME Forum on Mechanical Engineering Design and Analysis: Advances and New Trends in Practice, Research and Education, 18 Oct. 2002, Toronto.

177. Co-chair, Session on "Thermal Systems," CSME Mechanical Engineering Forum, 21-24 May 2002, Kingston, Ont.

178. Member, Technical Committee, Int. Conf. for Undergraduate Engineers, 7-9 May 2002, Toronto.

179. Chair, Session on "Energy Systems and Design," Symp. on Thermodynamics and the Design, Analysis, and Improvement of Energy Systems, ASME Int. Mechanical Engineering Congr. and Expo., 17-22 Nov. 2002, New Orleans.

180. Co-chair, Session on "Energy System Analysis and Design," Symp. on Thermodynamics and the Design, Analysis, and Improvement of Energy Systems, ASME Int. Mechanical Engineering Congr. and Expo., 11-16 Nov. 2001, New York.

181. Chair, Session on "Project Design and Management," Can. Conf. on Engineering Education, 22-25 Aug. 2001, Victoria, B.C.

182. Chair, Session on "Applied Heat Transfer II," 18th Can. Congr. of Applied Mechanics, 3-7 June 2001, St. John's, Newfoundland.

183. Member, Scientific Committees for Eurotherm Seminars No. 65 "Gasification of Coal, Biomass and Oil" and No. 66 "Process Integration in Industry," 5-7 July 2000, Enschede, The Netherlands.

184. Member, International Advisory Committee, Int. Symposium on Transport Phenomena, Istanbul, Turkey, 16-20 July 2000; Victoria, B.C., 14-18 July 2002.

185. Member, Scientific Committees, Int. Conf. on Efficiency, Cost, Optimization, Simulation and Environmental Aspects of Energy Systems (ECOS), 8-10 June 1999, Tokyo, Japan; 5-7 July 2000, Twente, The Netherlands; 4-6 July 2001, Istanbul, Turkey; 3-5 July 2002, Berlin, Germany; 30 June-2 July 2003, Copenhagen, Denmark; 25-28 June 2007, Padova, Italy; 24-27 June 2008, Cracow, Poland; Foz do Iguassu, Brazil, 31 Aug.-3 Sept. 2009; Lausanne, Switzerland, 14-17 June 2010.

186. Chair, Session on "Exergy and the Environment," Symp. on Thermodynamics and the Design, Analysis, and Improvement of Energy Systems, ASME Int. Mechanical Engineering Congr. and Expo., 14-19 Nov. 1999, Nashville, Tenn.

187. Member, Program Committee, Life Cycle Seminar, Int. Institution for Production Engineering Research, 21-22 June 1999, Kingston, Ontario.

188. Chair and Organizer, Session on "Second-Law Analysis," Int. Conf. on Renewable and Advanced Energy Systems for the 21st Century, 11-14 April 1999, Lahaina, Maui, Hawaii.

189. Co-organizer, Mechanical Engineering Internship, PEY and Co-op Programs. 5th CSME University/Industry Communications Exchange, 26 March 1999, Toronto.
190. Chair, Session on "Thermodynamics Optimization," Symp. on Thermodynamics and the Design, Analysis, and Improvement of Energy Systems, ASME Int. Mechanical Engineering Congr. and Expo., 15-20 Nov. 1998, Anaheim, Calif.
191. Member, International Advisory Committees, Trabzon Int. Energy and Environment Symposium (TIEES), Trabzon, Turkey, 29-31 July 1996; 27-29 July 1998.
192. Chair, CSME Mechanical Engineering Forum, 19-22 May 1998, Toronto, Ont. Also, Opening Speaker and Banquet Master of Ceremonies.
193. Co-Chair, Session on "Innovative Thermo-Processes," Symp. on Thermodynamics and the Design, Analysis, and Improvement of Energy Systems, ASME Int. Mechanical Engineering Congr. and Expo., 16-21 Nov. 1997, Dallas.
194. Chair, Session on "Manufacturing," 16th Can. Congr. of Applied Mechanics, 1-5 June 1997, Quebec City, Quebec.
195. Member, Scientific Committee, Florence World Energy Research Symp. (FLOWERS), 30 July-1 Aug. 1997, Florence, Italy.
196. Member, Scientific Committee, Int. Conf. on Thermodynamic Analysis and Improvement of Energy Systems (TAIES), 10-13 June 1997, Beijing, China.
197. Co-chair, Sessions on "Novel and Improved Energy Conversion Systems" and "Analysis and Design of Energy Systems," Symp. on Thermodynamics and the Design, Analysis and Improvement of Energy Systems, ASME Int. Mechanical Engineering Congr. and Expo., 17-23 Nov. 1996, Atlanta.
198. Member, Program Committee, Int. World Energy System Conf., 19-21 June 1996, Toronto.
199. Co-chair and Organizer, Symp. on Thermal and Fluids Engineering, CSME Mechanical Engineering Forum, 7-9 May 1996, Hamilton, Ont.
200. Chair, Afternoon Session, Conf. on Simulation of Power Generation and Metallurgical Processes by Computer Models, 18 Oct. 1994, CANMET, Ottawa.
201. Chairman, Session on "Environmental and Waste Management," Can. Nuclear Assoc./Can. Nuclear Soc. Student Conf., 18-19 March, 1994, Toronto.
202. Chair and Organizer of Symp. on Mechanical Engineering Education, Chair of 5 Sessions, and Member of Local Organizing Committee, CSME Mechanical Engineering Forum 1990, Toronto.
203. Co-chairman, Session on "Exergy Analysis," Int. Symp. on Thermodynamic Analysis and Improvement of Energy Systems, 1989, Beijing.

Technical Editing and Reviewing

1. Editor-in-Chief, *Thermal Science and Applications*, 2025-pres.
2. Member, External Review Panel, OVIN Regional Future Workforce – Critical Minerals Pilot Program, Ontario Vehicle Innovation Network, Ontario Centre of Innovation, 2024.

3. Honorary Editor-in-Chief, *International Journal of Environmental Science and Development*, 2024-pres.
4. Member, Editorial Advisory Board, *Energy Conversion and Management*, 2023-pres.
5. Member, Editorial Advisory Board, *Energy Conversion and Management: X*, 2023-pres.
6. Senior Editor, *e-Prime, Advances in Electrical Engineering, Electronics and Energy*, 2021-25.
7. Honorary Editor, *Energy, Environment and Storage*, 2021-pres.
8. Honorary Editor-in-Chief, *Geomatics and Environmental Engineering*, 2021-pres.
9. Member, Editorial Board, *International Journal of Electrical Engineering and Technology*, 2021-pres.
10. Member, Advisory Board (Honorary), *Entropy*, 2020-pres.
11. Honorary Editor, *International Journal of Energy and Environmental Engineering*, 2020-pres.
12. Member, Asian Council of Science Editors, 2018-pres.
13. Editor, *Energy Conversion and Management: X*, 2019-23.
14. Editor, *Energy Conversion and Management*, 2013-23.
15. Editor-in-Chief, *European Journal of Sustainable Development Research*, 2016-pres.
16. Editor-in-Chief, *Biofuels*, 2014-pres.
17. Editor-in-Chief, *Research Journal of Environmental Sciences*, 2013-2021.
18. Editor-in-Chief, *Sustainability*, 2009-pres.
19. Editor-in-Chief, *International Journal of Energy and Environmental Engineering*, 2012-20.
20. Editor, *Energy, Ecology & Environment*, 2015-pres.
21. Member, Editorial Board, *Journal of Sustainable Energy*, 2012-pres.
22. Member, Editorial Board, *Environments*, 2012-pres.
23. Member, Editorial Board, *International Journal of Energy and Environmental Engineering*, 2011-13.
24. Member, Advisory Editorial Board, "Sustainable Energy Developments" book series, CRC Press, 2010-pres.
25. Member, Editorial Board, *Energy and Power Engineering*, 2010-11.
26. Member, Editorial Board, *Challenges*, 2010-pres.
27. Member, Editorial Board, *Natural Resources*, 2010-pres.
28. Associate Editor (founding), *International Journal of Exergy*, 2003-pres.
29. Regional Editor, *The Open Renewable Energy Journal*, 2010-12.

30. Member, Editorial Advisory Board, *International Journal of Energy and Environment* (IEEF), 2009-pres.
31. Member, Editorial Board, *Entropy*, 2008-pres.
32. Member, Editorial Board, *Sustainability*, 2008-pres.
33. Member, Editorial Board, *The Open Renewable Energy Journal*, 2009-pres.
34. Member, Editorial Board, *The Open Fuels & Energy Science Journal*, 2008-2017.
35. Member, Editorial Board, *Journal of Thermodynamics*, 2008-2017.
36. Member, Advisory Board, *Energy Research News*, Boston, 2008-pres.
37. Member, Editorial Board, *International Journal of Energy and Environment* (NAUN), 2009-pres.
38. Member, Editorial Board, *International Journal of Systems Applications, Engineering and Development*, 2007-pres.
39. Member, Editorial Board, *The Open Fuel Cells Journal*, 2008-14.
40. Member, Editorial Board, *International Journal of Energy Research*, 2004-07.
41. Member (founding), Editorial Board, *International Journal of Green Energy*, 2003-pres.
42. Associate Editor (founding), *Exergy, An International Journal*, 1999-2003.
43. Associate Editor, *Energy-The International Journal*, 1993-98.
44. Associate Editor, *CSME Transactions*, 1997-pres. (previously Member, Editorial Board).
45. Guest Co-Editor, Special Issue on Modelling and Analysis of Thermal Systems, *CSME Transactions* Vol. 23, No. 1B, 1999.
46. Editor, *MechNews*, Newsletter of the Department of Mechanical Engineering, Ryerson, 1994-98.
47. Co-editor, *Proc. CSME Forum 1998*, Toronto, 1998.
48. Co-editor, Thermodynamics and the Design, Analysis, and Improvement of Energy Systems, Section 2 of *Proc. ASME Advanced Energy Systems Div*., AES-Vol. 37, ASME, N.Y., 1997, pp. 75-284.
49. Reviewer of journal and conference papers for several agencies:
    - American Society of Mechanical Engineers (*Trans. ASME J. Solar Energy Engineering, J. Eng. Gas Turbines and Power, J. Energy Resources Technology*, papers for annual Int. Mechanical Engineering Congr. & Expositions)
    - Canadian Society for Mechanical Engineering (Journals and Forums)
    - International Association for Hydrogen Energy (*Int. J. Hydrogen Energy*)
    - International Solar Energy Society (*Solar Energy*)
    - *Energy Studies Review*
    - *Canadian J. Chemical Engineering*
    - *Arabian J. for Science and Engineering*

- Optical Soc. of America (*Applied Optics*)
- Int. Assoc. of Science and Technology for Development (IASTED) (*Int. J. Modelling and Simulation*)
- IEEE (*Trans. on Systems, Man, and Cybernetics*)
- The Exergy Group, Univ. of London, Great Britain

50. Reviewer of research and project proposals for several agencies:
    - Joint Technology Initiatives, Fuel Cells and Hydrogen Joint Undertaking, Cooperation Programme of the 7th Research Framework Programme, European Commission, Brussels, Belgium
    - Natural Sciences and Engineering Research Council, Canada
    - Canada Foundation for Innovation
    - Industrial Research Assistance Program, Canada
    - Univ. of California Energy Inst.
    - King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia
    - Professional Engineers Ontario
    - Office of Research Services, Ryerson Polytechnic Univ.

SUMMARIZED LIST OF RESEARCH GRANTS/CONTRACTS FOR M.A. ROSEN

DIRECT FUNDING

1. "UNISA Visiting Professors Program 2025." 2025. Principal Investigator. $6,300. University of Salerno, Italy.
2. "Enhancing Polygeneration Energy Systems through Intelligent Integration." 2025-27. Principal Investigator. $44,000. NSERC.
3. "Next-Gen Electric Vehicle Battery Systems: Lightweight, Thermally Performant and Fire Safe for all Climates." 2024-28. Co-Investigator. $5,995,500 ($1,998,500, Industry and other sources-$2,004,000 cash, Industry and other sources-$1,993,000 in kind).
4. "UNISA Visiting Professors Program 2024." 2024. Principal Investigator. $4,500. University of Salerno, Italy.
5. "Thermal Management of Electrification Technologies (TherMET)." 2022-28. Co-Investigator. $5,003,960. (NSERC Collaborative Research and Training Experience (CREATE)-$1,650,000, Industry and other sources-$2,273,960, Industry and other sources-$1,080,000 in kind).
6. "Research Advances in Electric Cars and Batteries." 2024. Principal Investigator. $4,200. Asiantech, China (for Jiangsu Auto Electronic Control System Technology Co., Ltd.).
7. "Design and Development of a Non-Parasitic DC Fast Charging Station for E-Transportation." 2021-25. Co-Investigator. $2,310,000. (Mitacs Accelerate-$1,155,000 cash, $1,155,000-Worksport cash).
8. "Advancement of a Novel Phase Change Material-Based Thermal Caisson System for Geothermal Heating and Cooling." 2021-23. Principal Investigator. $396,130. (Mitacs-Voucher for Innovation and Productivity-$146,800 cash, McClymont and Rak Engineers Inc.-$249,330 cash and in-kind).
9. "Analysis and Optimization of a Novel Thermal Storage System for Ground-Source Heat Pumps (Part 2)." 2020-21. Principal Investigator. $69,000. (Mitacs-Accelerate Graduate Research Internship Program-$22,500 cash, McClymont and Rak Engineers Inc.-$46,500 cash).
10. "UNISA Visiting Professors Program 2020." 2020-23. Principal Investigator. $4,300. University of Salerno, Italy.
11. "Analysis and Optimization of a Novel Thermal Storage System for Ground-Source Heat Pumps." 2019-20. Principal Investigator. $69,000. (Mitacs-Accelerate Graduate Research Internship Program-$26,250 cash, McClymont and Rak Engineers Inc.-$42,750 cash).
12. "Enhancing Polygeneration Energy Systems and their Applications." 2019-25. Principal Investigator. $283,360. NSERC.
13. "UNISA Visiting Professors Program 2019." 2019. Principal Investigator. $13,000. University of Salerno, Italy.

14. "Trigeneration and District Energy: Modelling, Optimization and Advanced Applications." 2018-19. Principal Investigator. $27,000. NSERC.
15. "Integration of Trigeneration and District Energy: Modelling, Optimization and Applications to Buildings and Communities." 2016-18. Principal Investigator. $20,000. NSERC.
16. "Bridging The Gap – Health and Safety Engineering Student Teaching Modules – Stage II." 2014-15. Co-Investigator. $106,667. (Mitacs-Accelerate Graduate Research Internship Program-$58,667 cash, Minerva Canada Safety Management Education Inc.-$48,000 cash).
17. "Bridging The Gap – Health and Safety Engineering Student Teaching Modules." 2013-14. Co-Investigator. $120,000. (Mitacs-Accelerate Internship Program-$66,000 cash, Minerva Canada Safety Management Education Inc.-$54,000 cash).
18. "Truck-Driver-Road Interaction Simulator." 2013. Co-Investigator. $232,214. (Leaders Opportunity Fund, Canada Foundation for Innovation-$92,886 cash, Ontario Research Fund – Research Infrastructure, Ministry of Research and Innovation-$92,886 cash, Virage Simulation Inc., Montreal-$43,680 in-kind, University of Ontario Institute of Technology-$2,763 cash).
19. "Final Report Consultant." 2013. Joint Nuclear Energy Agency/International Atomic Energy Agency Expert Workshop on Technical and Economic Assessment of Non-Electric Applications of Nuclear Energy. Principal investigator. $2,900. OECD Nuclear Energy Agency, Paris.
20. "NSERC Smart Net-zero Energy Buildings Strategic Research Network." 2011-16. Co-Investigator. $10,679,000. (Strategic Networks grant, NSERC-$5,175,000, Industry sources-$530,000, Other sources-$1,100,000, Industry and other sources-$3,874,000 in kind).
21. "NSERC Smart Net-zero Energy Buildings Strategic Research Network." 2011. Co-Investigator. $25,000. Grant to Defray Costs of Preparing a Full Strategic Network Proposal, NSERC.
22. "Clean Hydrogen Production with Water Splitting Technologies." 2012-16. Co-Investigator. $10,243,659 (Ontario Research Fund-$2,542,523, Atomic Energy of Canada-$1,642,800 cash, $1,379,998 in-kind, University of Ontario Institute of Technology-$4,678,338).
23. "Integrated Systems for Trigeneration and District Energy: Modelling, Optimization and Improvement." 2011-16. Principal Investigator. $160,000. NSERC.
24. "Thermal Sustainability and Environmental Impacts of Low-temperature Geothermal Energy Systems on Groundwater and Surface Water Resources in Ontario." 2009-12. Co-principal investigator. $139,750. Best in Science Program, Ontario Ministry of the Environment.
25. "Rapporteur of Proposals for Joint Technology Initiatives." 2010. Principal investigator. $12,000. Fuel Cells and Hydrogen Joint Undertaking, Cooperation Programme of the 7th Research Framework Programme, European Commission, Brussels, Belgium.
26. "The Capacity to Reduce Greenhouse Gas Emissions through Policy that Encourages Integrated Urban Energy Systems: Phase I." 2008-10. Co-Investigator. $490,935 ($445,585 for part I and $45,350 for part 2). Quality Urban Energy Systems of Tomorrow (QUEST).

27. "Enhancing Regional Energy Analysis Modelling with Exergy. 2009-10. Principal Investigator. $16,537.50. Adaptation and Impacts Research Division, Centre for Environment, Environment Canada (at University of Toronto).
28. "Fundamental Studies into Causes of Colour Mismatch." 2009-13. Co-Investigator. $667,514. (SABIC Innovative Plastics, Cobourg, ON-$156,000 cash, $156,000 in-kind, NSERC Collaborative Research and Development grant-$311,514, UOIT-$44,000 in-kind).
29. "Conversion of a Regional Energy Analysis Model to an Exergy Model. 2008. Principal Investigator. $5000. Environment Canada and CETC-Ottawa, Natural Resources Canada.
30. "End-Use Efficiency: Industrial." 2008-10. Lead Analyst. $1612.35. Global Energy Assessment, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria.
31. Student Travel Award (for Ivan Nikolaev to present paper at eSim 2008 conference, Quebec City). 2008. Student Supervisor. $1000. Int. Building Performance Simulation Association – Canada.
32. "Low-Temperature Geothermal Technology: Support of the Development of a Research Network." 2008. Principal Investigator. $4000. CANMET Energy Technology Centre – Varennes, Natural Resources Canada.
33. "Thermal Energy Storage: Brief Literature Overview." 2008. Principal Investigator. $3150. Canadian GeoExchange Coalition, Montreal.
34. "Development of an Enhanced Ceiling Fan: An Engineering Design Case Study Highlighting Health, Safety and the Environment." 2008-09. Principal Investigator. $6,825. Minerva Canada.
35. Conference grants for various keynote plenary presentations. 2007-08. Principal Investigator. $7983. (Quality Urban Energy Systems of Tomorrow [QUEST]-$530 registration fee; Institute of Electrical and Electronics Engineers [IEEE] Power Conf., Montreal-$545 hotel and second paper fee; World Scientific and Engineering Academy and Society [WSEAS]-$4671 registration fee, extra paper fees and extra page charges; Annual Conf. of Can. Nuclear Society [CNS]-$693 registration fee; Global Conf. on Global Warming, Istanbul-$1345 registration fee and hotel; OSPE Int. Symp. on Engineering in a Climate of Change-$199 registration fee).
36. "Thermochemical Equipment Design for a Lab-scale Demonstration of Hydrogen Production with a Copper-Chlorine Cycle." 2008-11. Co-Investigator. $1,088,000 (Atomic Energy of Canada-$650,000, NSERC Collaborative Research and Development Grant-$438,000).
37. "High-Pressure Prototype of Marnoch Thermal Power Apparatus." 2007-09. Co-Investigator. $270,000 (Ontario Centres of Excellence, Toronto-$90,000, Marnoch Thermal Power Inc., Port Severn, Ontario-$35,000 cash, $55,000 in-kind, Ontario Power Authority, Toronto-$90,000).
38. "Application of Heat Pipe Technologies to Supplement Air-Cooled Condensers in Self-Contained Refrigeration." 2007. Principal Investigator. $10,494. AlphaChill Corporation, Toronto.

39. "General Motors: Achieving and Maintaining World-Class Leadership in Safety in the Automotive Industry." 2007-08. Principal Investigator. $6,273.75. Minerva Canada.
40. "Analysis of Environmental Impact of Electricity Generation Options in Ontario." 2007. Principal Investigator. $7400. Ontario Power Authority, Toronto.
41. "Sustainability of Options in Integrated Power Supply Plan for Ontario." 2006-07. Principal Investigator. $4910.20. Ontario Power Authority, Toronto.
42. "VAWT Power Curve and Generator Construction Input Data." 2007. Co-Investigator. $8,120. Trintec Industries, Ajax, Ontario.
43. "Predicting Wind Turbine Performance in Varying Weather Conditions with an Eulerian Multiphase Flow Formulation." 2007-11. Co-Investigator. $292,000 (Zephyr Alternative Power Inc.-$160,000, NSERC Collaborative Research and Development Grant-$132,000).
44. "Thermo-mechanical Design of Nuclear Based Hydrogen Production." 2007-11. Co-principal Investigator. $5,518,831 (Ontario Research Fund-$1,781,800, Atomic Energy of Canada-$1,450,000, University of Ontario Institute of Technology-$2,287,031).
45. "Integrated Systems for Trigeneration and District Energy: Modelling, Optimization and Improvement." 2006-11. Principal Investigator. $125,000. NSERC.
46. "Thermal Analysis and Experimental Apparatus for a Thermal Energy Conversion Device." 2006. Co-Investigator. $180,000 ($30,000 cash, $150,000 in-kind). Marnoch Thermal Power Inc.
47. "Development and Comparison of Measures for Allocating Emissions from Energy Systems." 2002-03. Principal Investigator. $16,050. Oil, Gas and Energy Branch, Environment Canada.
48. "Development of an Engineering-Oriented Health and Safety Module and Case Study." 2003-04. Principal Investigator. $6,420. Minerva Canada.
49. "Modelling, Optimization and Improvement of Cogeneration and District Energy Systems." 2001-05. Principal Investigator. $100,000. NSERC.
50. "Risk Assessment for Vehicle and Home Refueling Appliances." 2001-02. Co-Principal Investigator. $67,500. FuelMaker Corporation.
51. "Advances in Experimental and Analytical Methods in Aeronautical Research and Development." 2001. Co-Investigator. $47,460. International Opportunities Fund, NSERC.
52. "Modelling and Simulation of Fuel Cell Systems for Building Applications." 2001-2004. Principal Investigator. $21,500. Assistance for Academic Research, CANMET Energy Technology Centre, NRCan.
53. "Development of Methods for Assessing Environmental Impact Based on Exergy and the Second Law of Thermodynamics." Position Funding for Summer Academic Research Assistant Program, 2001. Principal Investigator. $6,550. Ryerson University.
54. "Manuscript Preparation Costs Grant for *Thermal Energy Storage and Applications.*" 2000. Co-Editor and Author. $1000. Ryerson Polytechnic University.

55. "Development of a Case Study on Engineering Safety for Cogeneration Systems." 1999-2001. Principal Investigator. $5,350. Minerva Canada.
56. "Development of a Standard Evaluation and Comparison Methodology for Thermal Energy Storage Systems." Position Funding for Summer Academic Research Assistant Program, 1999. Principal Investigator. $7,500. Ryerson Polytechnic University.
57. "Development and Implementation of a Joint SENAI/University Distance Education Course in Pollution Prevention." 1999-2000. Professional Consultant to Environmental Training in Brazillian Industry Project. $20,212 (including $3712 travel grant). Canadian International Development Agency, through the Brazillian Industrial Apprenticeship Program and Ryerson International.
58. "Improving the Heat Rate of Existing Ontario Hydro Generating Stations using Exergy Analysis." 1998-99. Principal Investigator. $30,000. Ontario Hydro.
59. "Conference Proceedings Publication Grant for CSME Forum 1998." 1998. Editor. $1500. Ryerson Polytechnic University.
60. "A Model for Cerebral Perfusion." 1998-99. Research Coordinator. $162,732. Defence and Civil Institute of Environmental Medicine, Toronto.
61. "Business Transformation Project (BTP) Metrics Review." 1998. Co-principal Investigator. $24,310. Ont. Ministry of Community and Social Services, Business and Technology Integration Branch.
62. "Energy Engineering Research." 1998. Co-principal Investigator. $9148. General Electric Canada Inc.
63. "The Development of Exergy-Based Methodologies for Assessing Environmental Impact." Position Funding for Summer Academic Research Assistant Program, 1998. Principal Investigator. $7,500. Ryerson Polytechnic University.
64. "Modelling, Analysis and Optimization of Integrated Cogeneration/District Energy Systems." 1997-2001. Principal Investigator. $83,790. NSERC.
65. "The Feasibility of Using the Tritec Power in Various Applications." 1997. Research Co-supervisor of two summer students. $16,000. Tritec Power Systems Ltd., Markham, Ont.
66. "Assessment of the Risks and Liabilities for a Fuel Processing Operation." 1996. Co-principal Investigator. $26,314. Beak Consultants Ltd., Brampton, Ont.
67. "Investigation of the Potential Benefits in Ontario of Cogeneration and Related Energy Technologies." 1994-95. Principal Investigator. $2500. Ontario Natural Gas Association.
68. "Environmental Training in Brazillian Industry Project." 1995-96. Professional Consultant. $800. Canadian International Development Agency, through the Brazillian Industrial Apprenticeship Program and Ryerson International.
69. "Development of Integrated Energy and Environment Courses." 1995. Co-principal Investigator. $49,810. Ont. Ministry of Environment and Energy.
70. "Modelling and Optimization of District Energy Systems with District Cooling." 1993-97. Principal Investigator. $72,000. NSERC.

71. "Cogeneration-Based District Energy Systems: Modeling, Analysis and Optimization Using Second-Law Analysis." 1994-96. Principal Investigator. $119,902. CANMET, NRCan.
72. "Development of an Integrated Energy Design Course." 1994. Co-principal Investigator. $49,810. Ont. Ministry of Environment and Energy.
73. "Investigation of Energy-Efficient Options for Bell Canada Buildings." 1992-93. Principal Investigator. $35,000. Bell Canada.
74. "Cogeneration and Hydrogen Options for Electrical Generating Stations." 1991-93. Principal Investigator. $160,000. Conestoga-Rovers & Associates and South Bruce Economic Development Corp.
75. "Second-Law Analysis and Environmental Impact of Energy Systems." 1992-93. Principal Investigator. $23,980 (NSERC-$18,654, Ryerson-$5326).
76. "Cogeneration and District Heating/Cooling in Ontario." 1992-94. Principal Investigator. $3146. NSERC General Research Grants (2), Ryerson.
77. "Electricity Generation from Low-Temperature Heat Sources." 1988-91. Principal Investigator. $90,000 (Dynawatt Energy Research Corp.-$39,000, URIF-$45,000, Ryerson-$6000).
78. "Assessment of Clean Coal Technologies." 1991-93. Principal Investigator. $53,000 (Ont. Ministry of Energy-$50,000, Ryerson-$3000).
79. "Use and Support of Aspen Plus Computer Code." 1988-2002. Principal Investigator. $4000. Aspen Technology Inc., Cambridge, Mass.
80. "The Comparison and Assessment of Storage Systems for Thermal Energy and Cooling Capacity." 1990-93. Principal Investigator. $39,000 (EMR-$26,000, NSERC-$13,000).
81. "Small-Scale Liquefaction of Air and Other Gases." 1989-90. Principal Investigator. $33,665 (Apotex Inc.-$10,000; MDI Technologies Inc.-$6000; URIF-$15,165; Ryerson-$2500).
82. "Integrated Methodologies Based on Second-Law Analysis for the Design and Analysis of Energy Systems." 1989-92. Principal Investigator. $55,962. NSERC.
83. "Steam Process Heating at the Bruce Energy Centre." 1988. Project Leader. $3000. Ontario Hydro (New Business Ventures Div.), via Evenstar Inc., Toronto.
84. "Ontario's Economic Opportunities at the Bruce Energy Centre." 1988. Asst. Investigator. South Bruce Economic Development Corp., via Evenstar Inc., Toronto.
85. "Exergy Analysis and Integrated Energy-Intensive Process Industries." 1988. Asst. Investigator. $12,000. NSERC.
86. "Research Travel Grants." 1987-pres. Principal Investigator. $12,350 (Link Foundation, U.S.-$350, Tokyo Inst. of Technology, Japan-$5000, Ryerson-$7000).
87. "Energy and Exergy Analyses of Canadian Energy Utilization." 1987-90. Principal Investigator. $24,000. Imperial Oil Ltd., Toronto.
88. "Evaluation of the Performance of Thermal Storages." 1987-89. Asst. Investigator. $47,500. EMR.

89. "Development of an Advanced Design Aid for Process Analysis." 1985. Principal Investigator. $28,500. Link Foundation, Florida.
90. "Monitoring and Analysis of Diffuse Sky Radiance at Toronto." 1982-84. Asst. Investigator. Atmospheric Environment Service.

INDIRECT FUNDING

1. "NSERC-GMCL Chair in Innovative Design Engineering." 2005-10. Applicant (Candidate: R. Pop-Iliev), NSERC Chairs in Design Engineering Phase 5 Competition. $2.1 million (NSERC-$1 million, General Motors of Canada-$1.1 million).
2. "NSERC University Faculty Award." 2006-11. Applicant (Candidate: J. Ren), University Faculty Award. $200,000. NSERC.

Notes:
CANMET: Canada Centre for Mineral and Energy Technology
EMR: Energy, Mines and Resources Canada
NRCan: Natural Resources Canada
NSERC: Natural Sciences and Engineering Research Council of Canada
URIF: University Research Incentive Fund, Ont. Min. Colleges and Universities

DETAILED LIST OF SCHOLARLY ADDRESSES AND CONFERENCE PRESENTATIONS FOR MARC A. ROSEN

KEYNOTE ADDRESSES AND OTHER INVITED LECTURES

1. Sustainability Issues and Applied Psychology. 31st International Congress of Applied Psychology (ICAP 2026), 21-25 Jul. 2026, Florence, Italy (closing plenary keynote, invited).
2. Engineering Sustainability as a Pathway to Sustainable Development. International Meet on Mechanical & Aerospace Engineering (IMMAE 2026), 16-18 Mar. 2026, Edinburgh, Scotland (plenary keynote, invited).
3. Engineering Sustainability as a Pathway to Sustainable Development. International Meet on Civil, Architectural, and Environmental Engineering (IMCAEE 2026), 16-18 Mar. 2026, Edinburgh, Scotland (plenary keynote, invited).
4. Contributions of Hydrogen Energy to Sustainable Development. 5th International Conference on New Energy and Power Engineering (ICNEPE 2025), 14-16 Nov. 2025, Guangzhou, China (plenary keynote, invited).
5. Exergy Methods for Enhancing Energy Systems: Efficiency, Economics and Environmental Impact. 5th International Congress on Energy Chemistry and Engineering 2025 (ICECE-2025), 19-21 Sep. 2025, Chengdu, China (plenary keynote, invited).
6. Expanding the Prospects for Sustainable Development through Energy Sustainability. 4th International Conference on Global Entrepreneurship Summit, 19-20 Aug. 2025, Toronto, Canada (plenary keynote, invited).
7. Sustainability, Energy and Environmental Impact. 2025 International Conference on Energy Technology and Electrical Engineering (ETEE 2025), 15-17 Aug. 2025, Shenyang, China (plenary keynote, invited).
8. Sustainability, Engineering and Manufacturing, and Environmental Impact. 2025 4th International Conference on Advanced Manufacturing Technology and Manufacturing System (ICAMTMS 2025), 8-10 Aug. 2025, Wuhu, Anhui, China.
9. Sustainability, Energy and Environmental Impact. 2025 International Symposium on Electrical, Electronic, and Control Engineering (SEECE 2025), 25-26 Jul. 2025, Shanghai, China (plenary keynote, invited).
10. Sustainability: An Essential Frontier for Humanity. 3rd Transatlantic Symposium on Sustainable Development in Higher Education, 26-27 Jun. 2025, Toronto, Canada (plenary keynote, invited).
11. Sustainability Science and Psychology of Sustainability and Sustainable Development. International Conference on Psychology of Sustainability and Sustainable Development: Preparing the Ground Beyond the Agenda 2030 for a Sustainable Sustainability, 3 Jun. 2025, Florence, Italy (plenary keynote, invited).

12. Hydrogen Energy for Enhanced Energy Sustainability. International Congress on Battery Materials and Devices 2025 (ICBMD-2025), 12-13 Apr. 2025, Suzhou, China (plenary keynote, invited).
13. Hydrogen Energy and its Role in Supporting Sustainability and Combating Environmental Impact. International Symposium on Energy Science and Engineering (IS-ESE), 21-23 Mar. 2025, Maoming, China (plenary keynote, invited).
14. Sustainability, Energy and Environmental Impact. International Conference on Clean Water, Air & Soil (CleanWAS) 2025, 16-18 Aug. 2025, Kuala Lumpur, Malaysia (plenary keynote, invited).
15. Engineering Sustainability: General Considerations and the Case of Electric Transportation. 2nd International Conference on Innovation, Sustainability, and Applied Sciences (ICISAS 2025), 22-23 Feb. 2025, Dubai
16. Engineering for Sustainable Development: The Centrality of Energy. 4th International Conference on New Energy and Power Engineering (ICNEPE 2024), 8-10 Nov. 2024, Guangzhou, China (plenary keynote, invited).
17. Energy. 2024 2nd Asia Conference on Environmental Science, Green Energy and Applications (ESGEA 2024), 25-27 Oct. 2024, Beijing, China (plenary keynote, invited).
18. Energy Sustainability: A Focus of Sustainable Development. 2024 Asia Conference on Electrical and Power Engineering (ACEPE 2024), 13-15 Dec. 2024, Suzhou, China (plenary keynote, invited).
19. Hydrogen Energy as a Route to Energy Sustainability. Global Conference on Renewable Energy and Sustainable Development (RenewableConf-2024), 17-19 Oct. 2024, Paris, France (plenary keynote, invited).
20. Engineering Sustainability: The Case of Electric Cars. 9th International Conference on Advances in Energy and Environment Research (ICAEER 2024), 20-22 Sept. 2024, Shanghai, China (plenary keynote, invited).
21. Sustainable Energy, Sustainability, and Environmental Impact. 4th International Conference on Energy, Environment, and Energy Storage, 5-7 September 2024, Cappadocia, Turkey (plenary keynote, invited).
22. Broadening the Prospects for Renewable Energy through Hydrogen Energy Technologies and Systems. 3rd International Conference on Global Entrepreneurship Summit, 19-20 Aug. 2024, Toronto, Canada (plenary keynote, invited).
23. Energy Sustainability: A Central Means to Sustainable Development. 2nd International Conference on Smart Electrical Grid and Renewable Energy (SEGRE 2024), 9-12 Aug. 2024, Suzhou, China (plenary keynote, invited).
24. Exergy Analysis for Efficiency Improvement and Environmental Impact Mitigation. 2024 International Forum on Clean Energy Science and Technology (IFCEST), 26-28 Jul. 2024, Beijing, China (plenary keynote, invited).

25. Expanding Sustainable Energy by Way of Hydrogen Energy Systems. 7th International Conference on Green Energy and Environment Engineering (CGEEE 2024), 4-6 Jul. 2024, Seoul, South Korea (plenary keynote, invited).
26. Sustainability and Electric Vehicles. 6th International Conference on Energy Systems and Electrical Power (ICESEP 2024), 21-23 Jun. 2024, Wuhan, China (plenary keynote, invited).
27. Sustainability Science and Psychology of Sustainability and Sustainable Development: Contributions and Future Perspectives. Int. Conf. on Psychology of Sustainability and Sustainable Development: Research Advancements and Future Perspectives for Decent Work, Decent Lives and Healthy Lives, 6 Jun. 2024, Florence, Italy (plenary keynote, invited).
28. Facilitating Sustainable Development through Engineering Sustainability. International Conference on Social Sciences and Sustainable Development (ICSSSD2024), 26-28 Apr. 2024, Changsha, China (plenary keynote, invited).
29. Hydrogen Energy Systems: A Pathway to a Sustainable Energy Future. Energies 1.0: Energizing Futures - Bridging Traditional Practices with Modern Innovations, 25 Apr. 2024, virtual (keynote, invited).
30. Broadening the Prospects for Renewable Energy through Hydrogen Energy Technologies and Systems. 12th World Congress and Expo on Green Energy, 7-8 March, 2024, Toronto, Canada (plenary keynote, invited).
31. Engineering Sustainability for Sustainable Development: With a Focus on Energy. 14th International Conference on Power, Energy and Electrical Engineering (CPEEE 2024), 24-26 February 2024, Tokyo, Japan (plenary keynote, invited).
32. Energy Sustainability: A Stepping Stone to Sustainable Development. 8th International Conference on Clean Energy and Power Generation Technology (CEPGT 2023), 15-17 Dec. 2023, Zhuhai, China (plenary keynote, invited).
33. Energy Sustainability: Paving the Road to Sustainable Development. 8th International Conference on New Energy and Future Energy System (NEFES 2023), 21-24 Nov. 2023, Matsue, Japan (plenary keynote, invited).
34. Climate Change and Energy Sustainability. Climate Forum 2023, 16-18 Aug. 2023, Canadian Centre for Climate Change and Adaptation, University of Prince Edward Island, St. Peter's Bay, Prince Edward Island, Canada (keynote, invited).
35. Hydrogen Energy Systems for Sustainable Development. Global Experts Conference on Renewable and Sustainable Energy (GECRSE-23), 27-29 July 2023, Osaka, Japan (plenary keynote, invited).
36. Environmental Stewardship through Exergy Methods. 3rd International Congress on Energy Chemistry and Engineering 2023 (ICECE-2023), 21-23 July 2023, Chengdu, China (plenary keynote, invited).

37. Sustainable Development through Hydrogen Energy Systems. 6th International Scientific and Technical Conference on Modern Power Systems and Units (MPSU), 24-26 May 2023, Cracow, Poland (plenary keynote, invited).
38. Energy. International Conference on Energy Science and Environmental Engineering (CESEE 2023), 14-16 Apr. 2023, Sanya, China (plenary keynote, invited).
39. Hydrogen Energy Systems: A Pathway to Sustainable Energy and Sustainable Development. 7th International Conference on Clean Energy and Power Generation Technology (CEPGT 2022), 9-11 Dec. 2022, Zhenjiang, China (plenary keynote, invited).
40. Sustainability and Sustainable Development Science: From Roots to Current Perspectives. Int. Conf. on Psychology of Sustainability and Sustainable Development: A Current Research Area, 6 Dec. 2022, Florence, Italy (plenary keynote, invited).
41. Hydrogen Energy Systems: Supporting Sustainable Energy and Sustainable Development. 7th International Conference on New Energy and Future Energy System (NEFES 2022), 25-28 October 2022, Nanjing, China (plenary keynote, invited).
42. Exergy Methods to Enhance Ecological and Environmental Understanding for Aquatic Domains. International Conference on Marine Science and Aquaculture (ICMSA), Italy 5-6 Oct 2022, Turin, Italy (keynote, invited).
43. Sustainability: The Ultimate Shared Quest for Humanity. South American Business Forum (SABF 2022), 29-31 July 2022, Buenos Aires, Argentina (plenary keynote, invited).
44. Advances in Hydrogen Production by Thermochemical Water Decomposition. VIII Symposium on Hydrogen, Fuel Cells and Advanced Batteries (HYCELTEC 2022), 10-13 July 2022, Buenos Aires, Argentina (plenary keynote, invited).
45. Hydrogen Energy: Route to Sustainable Energy. International Conference on Innovative Applied Energy: Third Edition (IAPE'22), 23-24 Jun. 2022, Cambridge, United Kingdom (plenary keynote, invited).
46. Energy Sustainability: A Pathway to Sustainable Development. International Meet on Power and Energy Engineering (ENERGYMEET2022), 20-22 June 2022, Copenhagen, Denmark (plenary keynote, invited).
47. Hydrogen Energy Systems: A Pathway to Sustainable Energy and Sustainable Development. International Congress on Energy Chemistry and Engineering 2022 (ICECE-2022), 17-19 June 2022, Xi'an, China (plenary keynote, invited).
48. Net-Zero Energy Buildings and Communities: Advances and Potential, Energy Engineering and Power Technology World Forum (Power-Energy-2022), 13-15 Jun. 2022, Rome, Italy (plenary keynote, invited).
49. Environmental Stewardship through Exergy Methods. International Meet on Civil, Structural and Environmental Engineering (CIVILMEET2022), 23-25 May 2022, Munich, Germany (plenary keynote, invited).
50. Exergy Methods for Energy Management and Sustainability. International Symposium on Energy Management and Sustainability (ISEMAS-22), 6-8 Apr. 2022, Istanbul, Turkey (keynote, invited).

51. Exergy Methods and Environmental Stewardship. Global Summit on Power and Energy Engineering (GSPEE2022), 23-25 March, 2022, Dubai, United Arab Emirates (plenary keynote, invited).
52. Engineering Sustainability for Sustainable Development. International Conference on Contests for Realization of Global Sustainability (CRGS 2022), 22-23 March 2022, Vancouver, British Columbia, Canada (plenary keynote, invited).
53. Driving Sustainable Development through Energy Sustainability. International Conference on Renewable and Sustainable Energy (RENEWABLEMEET 2022), 21-23 March 2022, Dubai, United Arab Emirates (plenary keynote, invited).
54. Directions in Energy Transitions, Decarbonisation and Sustainability. International Conference on Research Contributions in Mechanical Engineering (ICRCME-2022), 25-26 Feb. 2022, Andhra Pradesh, India (keynote, invited).
55. Hydrogen Energy as a Pathway to Sustainable Energy. Sixth International Conference on Fossil and Renewable Energy (F&R Energy-2022), 15-17 Feb. 2022, Houston (plenary keynote, invited).
56. Hydrogen Energy: Route to Sustainable Energy. International Conference on Innovative Applied Energy: Third Edition (IAPE'21), 29-30 Nov. 2021, Cambridge, United Kingdom (plenary keynote, invited).
57. Energy Sustainability and Geothermal Energy. 2nd International Conference on Geological and Environmental Sustainability, 18-19 Nov. 2021, Dubai (plenary keynote, invited).
58. Exergy Techniques for Addressing Energy and Environmental Management. Sixth International Conference on Energy Engineering and Environmental Protection (EEEP2021), 16-18 Nov. 2021, Sanya, China (plenary keynote, invited).
59. Engineering Sustainability: A Pillar of Sustainable Development. 2nd International Conference on Infrastructure and Construction (InfrastructureConstruction-2021), 1-3 Nov. 2021, Osaka, Japan (plenary keynote, invited).
60. Prospects for Biofuels through Hydrogen Energy Systems. International Meet on Biotechnology and Bioengineering (BIOTECHMEET2021), 16-18 Sept. 2021, Porto, Portugal (plenary keynote, invited).
61. Energy Sustainability for Sustainable Development. TUBA World Conference on Energy Science and Technology (TUBA WCEST-2021), 8-12 Aug. 2021, Turkey (online) (keynote, invited).
62. Exergy Methods for Addressing Climate Change and Other Environmental Impacts. International Conference on Innovations in Energy Engineering & Cleaner Production (IEECP'21), 29-30 July 2021, Silicon Valley, California (plenary keynote, invited).
63. Energy. International Conference on Innovations in Energy Engineering & Cleaner Production (IEE CP'21), 29-30 July 2021, Silicon Valley, California (plenary keynote, invited).

64. Exergy Methods for Addressing Environmental Impacts. Global Congress and Expo on Power and Energy Engineering (Energy Engineering-2021), 12-14 July 2021, Barcelona, Spain (plenary keynote, invited).
65. Energy Sustainability: A Key to the Sustainable Development. Symp. on Advanced Energy Systems at Canadian Society for Mechanical Engineering International Congress, 27-30 Jun. 2021, Charlottetown, Prince Edward Island, Canada (keynote, invited).
66. Hydrogen as a Path to Enhancing the Prospects for Renewable Energy. International Congress on Energy Chemistry and Engineering 2021 (ICECE-2021), 18-21 June 2021, Chengdu, China (plenary keynote, invited).
67. Energy Sustainability: A Key to Environmentally Benign Systems and Processes. 3rd Euro-Mediterranean Conference for Environmental Integration (EMCEI-2021), 10–13 June 2021, Sousse, Tunisia (plenary keynote, invited).
68. Hydrogen Energy as a Vector for Enhancing the Prospects for Renewable Energy. DZENERGY International Conference on Innovative Applied Energy, 26-27 March 2021, Hassi Messaoud, Ouargla. Algeria (plenary keynote, invited).
69. Engineering Sustainability. Global Solutions for a Sustainable Future, 5-6 March 2021, Webinar (plenary keynote, invited).
70. Exergy Methods and the Environment. Fifth International Conference on Fossil and Renewable Energy (F&R Energy-2021), 1-3 March 2021, Houston (plenary keynote, invited).
71. Energy Sustainability and the Importance of Advanced Energy Materials. 2020 Materials Engineering Forum (MEF), 29-31 December 2020, Hong Kong (keynote, invited).
72. Sustainable Engineering: A Central Driver for Sustainability. International E-Conference on Geological and Environmental Sustainability, 14-15 Dec. 2020, London, UK (plenary keynote, invited).
73. Energy Sustainability: A Key Driver for Sustainable Development. Impactful Endeavour Towards Sustainability Outreach (IETSO 2020), 4-5 Dec. 2020, Gdynia, Poland (plenary keynote, invited).
74. Enhancing Renewable Energy Prospects via Hydrogen Energy Systems. First Virtual International Conference on Advances in Renewable and Sustainable Energy Systems (ICARES-2020). 3-5 Dec. 2020, Kattankulathur, Chennai, India and webinar (plenary keynote, invited).
75. Nuclear Energy: Non-Electric Applications to Help Reduce Environmental Impacts. International Conference on Energy, Environment and Storage of Energy (ICEESEN 2020), 19-21 November 2020, Kayseri, Turkey, webinar (keynote, invited).
76. Sustainable Development via Hydrogen Energy. Webinar on Green Energy and Material Science 2020, 27 Oct. 2020, webinar (keynote, invited).
77. Hydrogen Energy: Route to Sustainable Energy. World Congress on Energy/International Webinar on Energy, 24-26 Sept. 2020, webinar (plenary keynote, invited).

78. Energy Sustainability: A Key to the Sustainable Development. Webinar on Green Energy and Material Science 2020, 24 Sept. 2020, Berlin, Germany (keynote, invited).
79. Sustainability, Renewable Energy and the Prominence of Advanced Materials. Materials Science, Engineering and Technology, 17-20 Sept. 2020, Vebleo webinar (keynote, invited).
80. Using Exergy to Address Climate Change. 5th Conf. on Renewable Energy Sources – Research and Business (RESRB-2020), 7-8 Sept. 2020, Brussels, Belgium (keynote, invited).
81. Nuclear Energy: Non-Electric Applications to Help Reduce Environmental Impacts. 8th Global Summit and Expo on Pollution Control, 24-25 August 2020, webinar (keynote, invited).
82. Biofuels and Energy Sustainability. 8th International Congress & Expo on Biotechnology and Bio-engineering (Biotechnology 2020), 24-25 July 2020, Webinar (plenary keynote, invited).
83. Ramping up Renewable Energy for Sustainable Economic Growth. Time for Nature: A Virtual Symposium, 5 June 2020.
84. Thermodynamic Exergy and Plasticity and Elasticity. International Conference on Plasticity, Damage, and Fracture 2020, 3-9 Jan. 2020, Rivera Maya, Mexico (keynote, invited).
85. Enhancing the Prospects for Biofuels and Other Forms of Renewable Energy through the Utilization of Hydrogen Energy Systems. Advances in Biofuels and Bioenergy and Frontiers in Green and Sustainable Energy, 21-22 Oct. 2019, Toronto, Canada (plenary keynote, invited).
86. Sustainable Energy through Hydrogen Energy. ISER International Conference on Heat Transfer and Fluid Flow, 28-29 April 2019, Toronto, Canada (plenary keynote, invited).
87. The Role of Hydrogen Energy Systems in Enhancing the Prospects for Renewable Energy. 2nd International Conference on Energy and Power (ICEP2018), 13-15 Dec. 2018, Sydney, Australia (keynote, invited).
88. Potential of Net-Zero Energy Buildings and Communities. International Conference on Mechanical and Aerospace Engineering (ICMAE), 5-6 Dec. 2018, Auckland, New Zealand (plenary keynote, invited).
89. Sustainability through Energy Sustainability. International Conference on Recent Advances in Engineering and Technology (ICRAET), 19-20 Nov. 2018, Florence, Italy (plenary keynote, invited).
90. Sustainability Science and Sustainable Development: Future Prospects and Challenges. Int. Conf. on Strengthening Sustainability Science and its Transdisciplinary Nature: The New Area of the Psychology of Sustainability and Sustainable Development, 12 Nov. 2018, Florence, Italy (plenary keynote, invited).

91. Sustainable Energy: A Key to the Sustainability of Environmental Systems. 13th Conference on Sustainable Development of Energy, Water and Environment Systems, 30 Sep.-4 Oct. 2018, Palermo, Italy (plenary keynote, invited).
92. Hydrogen Energy: A Key Enabler of Renewable Energy for a Sustainable World. 18th International Conference on Pure and Applied Chemistry, 31 Aug.-1 Sept. 2018, Toronto, Canada (plenary keynote, invited).
93. Hydrogen as a Facilitator of Sustainable Energy on a Global Basis. 6th International Conference on Green Energy and Expo, 29-31 Aug. 2018, Toronto, Canada (plenary keynote, invited).
94. Using Hydrogen Energy Systems to Enhance Future Prospects for Sustainable Energy. Symp. on Advanced Energy Systems at Canadian Society for Mechanical Engineering International Congress, 28-30 May 2018, Toronto (keynote, invited).
95. Thermodynamics of Plasticity and Elasticity: Exergy Approaches. 24th International Symposium on Plasticity, Damage and Fracture, 3-9 Jan. 2018, San Juan, Puerto Rico (keynote, invited).
96. Energy Sustainability: Concepts, Needs and Transitions. 2017 International Conference on Renewable Energy and Environment (ICREE 2017), 1-3 Nov. 2017, Toronto, Canada (keynote, invited).
97. Bioenergy and Energy Sustainability. 7th International Conference on Biofuels and Bioenergy, 2-4 Oct. 2017, Toronto, Canada (keynote, invited).
98. Energy Sustainability: Concepts, Needs and Transitions. 2017 IEEE 7th International Conference on Power and Energy Systems, 1-3 Nov. 2017, Toronto, Canada (keynote, invited).
99. Enhancing Renewable Energy Prospects via Hydrogen Energy Systems. International Conference on Renewable Energy and Resources, 24-25 Jul. 2017, Vancouver, Canada (keynote, invited).
100. Energy Sustainability and the Role of Biomass. International Conference on Energy from Biomass and Organic Waste, 21-23 June 2017, Arequipa, Peru (keynote, invited).
101. Effective Public-Private Engagement for Sustainability. 6th World Sustainability Forum, 27-28 Jan. 2017, Cape Town, South Africa (keynote, invited).
102. Understanding the Thermodynamics of Plasticity and Elasticity using Exergy Methods. 23rd International Symposium on Plasticity, Damage and Fracture, 3-9 Jan. 2017, Puerto Vallarta, Mexico (keynote, invited).
103. Utilization of Non-Fossil Fuel Energy Options to Mitigate Climate Change and Environmental Impact, 2016 International Conference on New Energy and Future Energy System (NEFES 2016), 19-22 Aug. 2016, Beijing, China (keynote, invited).
104. Potential Contributions to Sustainability of Net-zero Energy Buildings and Communities, 5th World Sustainability Forum, 7-9 Sep. 2015, Basel, Switzerland (keynote, invited).

105. Energy Sustainability: A Key to Addressing Environmental, Economic and Societal Challenges. 3rd Symposium on Corporate Responsibility and Sustainable Development, 7-11 June 2015, Toronto (plenary keynote, invited).
106. Enhancing the Prospects for Renewable Energy through Hydrogen Energy Systems. 2015 Spring World Congress on Engineering and Technology (SCET 2015), 14-16 Apr. 2015, Beijing, China (keynote, invited).
107. Net-zero Energy Buildings and Communities: Potential and the Role of Energy Storage. 7th Asia-Pacific Power and Energy Engineering Conference (APPEEC 2015), 12-14 Apr. 2015, Beijing, China (keynote, invited).
108. Extended Linkages between Exergy and Plasticity and Elasticity. 21st International Symposium on Plasticity and its Current Applications, 3-8 Jan. 2015, Montego Bay, Jamaica (keynote, invited).
109. Energy Sustainability: Needs and Challenges. 4th World Sustainability Forum, 1-30 Nov. 2014, Sciforum Electronic Conferences Series (keynote, invited).
110. A Big Turnaround. American Society of Safety Engineers' (ASSE) Symposium: Stepping Up the Power of Safety Management, 23-24 Oct. 2014, Denver, CO (keynote, invited).
111. Net-zero Energy Buildings and Communities: Potential and the Role of Energy Storage. 4th IRENEC Int. 100% Renewable Energy Conference, 26-28 June 2014, Istanbul (keynote, invited).
112. The Prospects for Renewable Energy through Hydrogen Energy Systems. 4th IRENEC Int. 100% Renewable Energy Conference, 26-28 June 2014, Istanbul (keynote, invited).
113. Linkages between Exergy and Plasticity and Elasticity. 20th International Symposium on Plasticity and its Current Applications, 3-8 Jan. 2014, Freeport, Bahamas (keynote, invited).
114. Energy Research for Sustainability: Trends, Needs and Future Directions. 3rd World Sustainability Forum, 1-30 Nov. 2013, Sciforum Electronic Conferences Series (keynote, invited).
115. Sustainable Smart Energy Grids for Communities. IEEE Int. Conf. on Smart Energy Grid Engineering, 28-30 Aug. 2013, Oshawa, Ontario, Canada (keynote, invited).
116. Rosen, M.A. Correlating Thermodynamics and Economic Investments to Improve the Rationale for Energy Research. 12th Joint European Thermodynamics Conf., 1-5 July 2013, Brescia, Italy (invited).
117. Application of Exergy-Based Methods for Technical, Economic and Environmental Assessments of Nuclear Cogeneration. Joint Nuclear Energy Agency/International Atomic Energy Agency Expert Workshop on Technical and Economic Assessment of Non-Electric Applications of Nuclear Energy, 4-5 Apr. 2013, Paris (keynote, invited).
118. Energy Sustainability and Climate Change. 3rd Engineering Institute of Canada Climate Change Technology Conf., 27-29 May 2013, Montreal, Quebec (keynote, invited).

119. Energy Sustainability. 2nd World Sustainability Forum, 1-30 Nov. 2012, Sciforum Electronic Conferences Series (keynote, invited).

120. Mitigating Climate Change through Non-Fossil Fuel Energy Options. 1st Science One International Conference on Environmental Sciences, 12-14 Oct. 2012, Toronto (keynote, invited).

121. The Search for Energy Sustainability. 11th Int. Conf. on Sustainable Energy Technologies, 2-5 Sept. 2012, Vancouver, B.C., Canada (keynote, invited, in Specialized Session on Energy Sustainability).

122. Energy Sustainability and Smart Grids. IEEE Int. Conf. on Smart Grid Engineering, 27-29 Aug. 2012, Oshawa, Ontario, Canada (keynote, invited).

123. Status and Needs for the Optimisation of Seasonal Storage for Community-level Energy Systems. 12th Int. Conf. on Energy Storage, 16-18 May 2012, Lleida, Spain (opening plenary keynote address, invited).

124. Energy Sustainability in Buildings and Communities. 1st World Sustainability Forum, 1-30 Nov. 2011, Sciforum Electronic Conferences Series (keynote, invited).

125. What is Rational End Use of Energy? Round Table with Keynotes on Rational End Use, 4th World Engineering Convention, 4-9 Sept. 2011, Geneva, Switzerland (keynote).

126. Rosen, M.A. Efficiency Analysis of the Global Industrial Sector using Energy and Exergy. Session on Growth, Innovation, Decoupling, Efficiency and Sufficiency, 4th World Engineering Convention, 4-9 Sept. 2011, Geneva, Switzerland (invited, introductory lecture).

127. Climate Change and Sustainable Energy: Actions and Transition to a Lower Carbon Economy. Specialized Session on Climate Change and Sustainable Energy: Actions and Transition to a Lower Carbon Economy. Global Conference on Global Warming, 11-14 July 2011, Lisbon, Portugal (invited, lead special talk for specialized session).

128. Energy Research: Trends, Needs and Future Directions. 3rd International Conference on Applied Energy, 16-18 May 2011, Perugia, Italy (keynote, invited).

129. Energy Sustainability: A Key to Addressing Environmental, Economic and Societal Challenges. 5th International Green Energy Conf., 1-3 June 2010, Waterloo, Ontario (keynote, invited).

130. Sustainable Energy: Approaches and Applications Seminar. Professional Development Seminar, Association of Professional Engineers and Geoscientists of British Columbia, 26 March 2010, Vancouver (invited).

131. The Iron Ring: Engineering and Professionalism. 1st Canada Hong Kong Engineering Business Conference, 5 November 2009, Hong Kong (Iron Ring keynote address, invited).

132. Innovation in Safety Engineering. IEEE Symposium on Product Compliance Engineering (IEEE Product Safety Engineering Society), 26-28 Oct. 2009, Toronto (plenary, invited).

133. Rosen, M.A. Ground Source Heating and Cooling: Types of Systems. Ground Source Heating and Cooling Symposium: Powering Ontario's Future, 20-21 Oct. 2009, Vaughan, Ontario (invited opening talk).

134. Sustainability: The Ultimate Quest for Science, Technology and Humanity. 2009 IEEE Toronto International Conference on Science and Technology for Humanity, 26-27 Sept. 2009, Toronto (keynote plenary, invited).

135. A Size-Based Hierarchy for Applications of Exergy Analysis: Methodology, 16th Int. Conf. on Thermal Engineering and Thermogrammetry, 1-3 July 2009, Budapest, Hungary (keynote plenary, invited).

136. Thermodynamic Analysis Based on the Second Law Using Exergy: Illustrative Applications of a Size-Based Assessment Hierarchy. 2nd Int. Conf. on Engineering Mechanics, Structures, Engineering Geology (EMESEG '09), 22-24 July 2009, Rhodes, Greece (plenary, invited).

137. Engineering Education: Future Trends and Advances. 6th Int. Conf. on Engineering Education (Education '09), 22-24 July 2009, Rhodes, Greece (plenary, invited).

138. Energy Sustainability, Specialized Session on Sustainable Energy and Global Warming, Global Conf. on Global Warming (GCGW) 2009, 5-9 July 2009, Istanbul, Turkey (special address, invited).

139. Climate Change and Sustainable Energy: Actions and Transition to a Lower Carbon Economy. 2nd Engineering Institute of Canada Climate Change Technology Conf., 12-15 May 2009, Hamilton, Ontario (plenary, invited).

140. Using Exergy to Enhance Ecological and Environmental Understanding and Stewardship. 4th IASME/WSEAS Int. Conf. on Water Resources, Hydraulics and Hydrology (WHH 2009), 24-26 Feb. 2009, Cambridge, UK (plenary, invited).

141. Utilization of Non-Fossil Fuel Energy Options to Mitigate Climate Change and Environmental Impact. 4th IASME/WSEAS Int. Conf. on Energy and Environment (EE 2009), 24-26 Feb. 2009, Cambridge, UK (plenary, invited).

142. Geothermal Heat Pumps and Ground Energy Systems: The Canadian Research Network. 3rd National GeoExchange Business & Policy Forum, Toronto, 17-18 Nov. 2008 (opening plenary presentation, invited).

143. Towards Energy Sustainability: A Quest of Global Proportions. Oxford Round Table on Sustainability: The Ultimate Quest, Oxford University, Oxford, England, 10-15 Aug. 2008 (invited).

144. Overview - Manufacturing in Canada: The Productivity Challenge and How Automation Can Help. Productivity and Automation in Manufacturing, Canadian Manufacturers & Exporters 20/20 SMART Session, Oshawa, 4 June 2008 (lead-off talk, invited).

145. Combating Climate Change via Non-Fossil Fuel Energy Options. Global Conf. on Global Warming, 6-10 July 2008, Istanbul, Turkey (keynote, invited).

146. GM/UOIT Case Study and the Importance of Leadership in Advancing Safety Performance Improvements. Minerva Engineering Summer Institute in Occupational Health and Safety, 26-28 May 2008, Toronto (closing keynote address, invited).

147. Advances in Hydrogen Production by Thermochemical Water Decomposition. 21st Int. Conf. on Efficiency, Cost, Optimization, Simulation and Environmental Aspects of Energy Systems (ECOS), 24-27 June 2008, Krakow, Poland (keynote, invited).

148. Hydrogen Energy and Sustainability: Overview and the Role for Nuclear Energy. 29th Annual CNS and 32nd CNS/CNA Student Conferences, 1-4 June 2008, Toronto (plenary, invited).

149. Exergy as a Tool for Sustainability. 3rd IASME/WSEAS Int. Conf. on Energy and Environment (EE'08), 23-25 Feb. 2008, Cambridge, UK (plenary, invited).

150. Exergy as a Tool for Sustainability. 3rd IASME/WSEAS Int. Conf. on Water Resources, Hydraulics and Hydrology (WHH'08), 23-25 Feb. 2008, Cambridge, UK (plenary, invited).

151. Exergy Concept and its Application. IEEE Electrical Power Conf.: Renewable and Alternative Energy Resources, 25-26 October 2007, Montreal (plenary, invited).

152. Health and Safety in Postsecondary Education: Teaching Practices and Barriers. Minerva Business and Engineering Summer Institute in Occupational Health and Safety, 28-30 May 2007, Toronto (keynote, invited).

153. Future Trends in Engineering Education. Annual General Meeting, Lake Ontario Chapter, Professional Engineers Ontario, 27 Jan. 2007, Oshawa (invited).

154. Nuclear-Based Hydrogen Production with a Thermochemical Copper-Chlorine Cycle and Supercritical Water Reactor. Canadian Hydrogen Association Workshop: Building Canadian Strength with Hydrogen Systems, 19-20 Oct. 2006, Montreal (lead-off talk for session on Hydrogen Production).

155. Institutionalizing Health and Safety in an Academic Environment: Can it be Done? Minerva Business Faculty Summer Institute in Occupational Health and Safety, 28-31 May 2006, Hamilton, Ontario (luncheon keynote, invited).

156. Perspectives on the Future of Mechanical Engineering. Canadian Society for Mechanical Engineering Forum 2006, 21-23 May 2006, Kananaskis, Alberta (keynote, invited).

157. Featured Speaker. Engineering Institute of Canada Climate Change Conf. (Climate Change Technology: Engineering Challenges and Solutions in the 21st Century), 10-12 May 2006, Ottawa.

158. Geothermal Energy Storage Systems: Design, Operation, Analysis and Improvement. Symp. on Emerging Energy Issues, 55th Can. Chemical Eng. Conf., 16-19 Oct. 2005, Toronto (keynote, invited).

159. Green Exergy: Integrating Green Energy and Exergy, 2nd Int. Exergy, Energy and Environment Symp., 3-7 July 2005, Kos, Greece (plenary keynote, invited).

160. The Role of Exergy in Increasing Utilization of Green Energy and Technologies**.** International Green Energy Conference, 12-16 June 2005, Waterloo, Ontario (keynote, invited).

161. Reasonable Pathways from Technology to Engineering. Engineering and Technology Forum 2003: The Evolving Character of the Engineering Team, 7 Nov. 2003, Toronto (invited paper for session on College and University Initiatives).

162. Allocating Carbon Dioxide Emissions from Cogeneration Systems: Descriptions of Selected Output-Based Methods. 6th Conf. on Process Integration Modelling and Optimisation of Energy Saving and Pollution Reduction (PRES'03), 26-29 Oct. 2003, Hamilton, Ontario (keynote, invited, for session on Synthesis of New Thermal Processes).

163. Evaluating Energy and Greenhouse Gas Technologies with the Principles of Thermodynamics. Climate Change 2: Can. Technology Development Conf., 3-5 Oct. 2001, Toronto (lead paper, invited, for session Societal Issues and Technology Development).

164. Exergy Analysis of Thermal Energy Storage Systems. 12th Int. Symposium on Transport Phenomena (ISTP-12), 16-20 July 2000, Istanbul, Turkey (keynote, invited).

165. Energy, Environment and Sustainable Development. 7th Int. Energy Conf. and Exhibition (Energex 98), 19-21 Nov. 1998, Manama, Bahrain (keynote).

166. Advances in Second Law Analysis. 2nd Trabzon Int. Energy and Environment Symp., 27-29 July 1998, Trabzon, Turkey (keynote, invited).

167. Thermal Storage and Exergy Analysis: The Impact of Stratification. Symp. on Thermal and Fluids Engineering at CSME Forum 1998, 19-22 May 1998, Toronto (keynote, invited).

168. Second-Law Analysis of Thermal Energy Storage Systems. First Trabzon Int. Energy and Environment Symp., 29-31 July 1996, Trabzon, Turkey (keynote, invited).

169. Computer Simulation of Energy Processes: Fundamental and Applications. Conf. on Simulation of Power Generation and Metallurgical Processes by Computer Models, 18 Oct. 1994, CANMET, Ottawa (keynote, invited).

170. Energy Utilization Efficiency in a Macrosystem (Ontario): Evaluation and Improvement through Cogneration. Int. Symp. CO_2 Fixation and Efficient Utilization of Energy, 29 Nov.-1 Dec. 1993, Tokyo (keynote, invited).

SCHOLARLY ADDRESSES

1. Energy Sustainability: A Means to Sustainable Development. Department of Mechanical and Mechatronics Engineering Memorial University of Newfoundland, Newfoundland and Labrador, Canada, Jul. 2024.

2. Hydrogen Energy Systems and Technologies. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 21 May 2024.

3. Sustainability through Net-zero Energy Buildings and Communities. Faculty of Geodesy and Cartography, Warsaw University of Technology, Warsaw, Poland, 29 May 2023.

4. Challenges and Opportunities for Net-zero Energy Buildings and Communities. Research Excellence Center, Cracow University of Technology, Cracow, Poland, 22 May 2023.
5. Using Exergy to Allocate Rationally Carbon Dioxide Emissions from Cogeneration. Dept. of Industrial Engineering, University of Florence, Florence, Italy, 29 Nov. 2022.
6. Using Exergy to Make Government Spending on Energy Research More Beneficial. Dept. of Industrial Engineering, University of Florence, Florence, Italy, 29 Nov. 2022.
7. Hydrogen Energy Systems. Dept. of Industrial Engineering, University of Florence, Florence, Italy, 29 Nov. 2022.
8. Engineering Sustainability. Dept. of Industrial Engineering, University of Florence, Florence, Italy, 22 Nov. 2022.
9. Sustainable Energy Conversion/Storage Technologies and Systems. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 2 Nov. 2022.
10. Sustainable Energy Harvesting Technologies and Systems: Wind, Bioenergy and Water. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 26 Oct. 2022.
11. Sustainable Energy Harvesting Technologies and Systems: Solar and Geothermal. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 19 Oct. 2022.
12. Sustainable Energy and Environmental Impact of Energy Systems. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 12 Oct. 2022.
13. Energy Sustainability: A Pathway to Sustainable Development. Department of Energy, Politecnico di Torino, Torino, Italy, 7 Oct. 2022.
14. Research into Energy Technology, Systems and Sustainability. Department of Energy, Politecnico di Torino, Torino, Italy, 6 Oct. 2022.
15. Energy Transitions, Decarbonisation and Sustainability: Illustrations and Directions. Environment Park, Politecnico di Torino, Torino, Italy, 4 Oct. 2022.
16. Hydrogen Energy Systems. Department of Energy, Politecnico di Torino, Torino, Italy, 30 Sept. 2022.
17. Hydrogen Production by Thermochemical Water Splitting: Developments and Advances. 11 Aug. 2022, Institute of Physical Chemistry of Materials, Environment and Energy (Instituto de Química Física de los Materiales, Medio Ambiente y Energía (INQUIMAE)), University of Buenos Aires, Buenos Aires, Argentina.
18. Hydrogen Production by Thermochemical Water Splitting. 11 Aug. 2022, National Atomic Energy Commission (Comisión Nacional de Energía Atómica (CNEA)), Buenos Aires, Argentina.
19. Hydrogen Energy: Prospects for Enhanced Energy Systems, Environmental Protection and Sustainability. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 24 May 2022.
20. Energy Sustainability: A Critical Quest. Pi Day Speaker Series. Ontario Tech University, Oshawa, Ontario, Canada, 25 Mar. 2022, virtual.

21. Selected International Trends in Energy Transitions and Decarbonisation. Master Reasmus Mundus: Decentralized Smart Energy Systems (DENSYS) Summer School on Energy Transition and De-carbonization, Torino, Italy, 28 June-2 July 2021.
22. International Trends of Energy Transition. Online Seminar on Energy Transition and Decarbonisation of Processes: International Trends and Scenario Analysis in Valle d'Aosta, Fondazione Courmayeur Mont Blanc, Valle d'Aosta, Italy, 25 May 2021, virtual.
23. The Engineering Design Process. Future City Competition Closing Ceremony, Coordinated by Engineers Canada and Engineers of Tomorrow, 5 May 2021, virtual.
24. Sustainability and Sustainable Development. Inst. for Integrated Energy Systems and Department of Mechanical Engineering, University of Victoria, 14 Aug. 2019.
25. Using Exergy to enhance Ecological and Environment Understanding and Stewardship. Inst. for Integrated Energy Systems and Department of Mechanical Engineering, University of Victoria, 31 Jul. 2019.
26. Engineering Sustainability and Pollution Prevention. PhD Short Course, University of Salerno, Salerno, Italy, 21-22 May 2019.
27. Sustainable Development and Sustainability: Concepts, Prospects and Challenges. School of Psychology, University of Florence, Florence, Italy, 20 May 2019.
28. Hydrogen Energy Systems and their Role in Enhancing the Prospects for Renewable Energy. Department of Energy, Systems, Territory and Construction Engineering, University of Pisa University of Pisa, Pisa, Italy, 20 May 2019.
29. Sustainability Science and Sustainable Development: Future Prospects and Challenges. Dept. of Education, Languages, Interculture, Literature and Psychology, University of Florence, Florence, Italy, 17 May 2019.
30. Hydrogen Energy Systems: Production, Storage, Distribution and Use. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 10 May 2019.
31. Exergy Methods Applied to Multigeneration Energy Systems. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 3 Apr. 2019.
32. Exergy Methods. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 3 Apr. 2019.
33. Energy Sustainability and Sustainable Energy Technologies. PhD Short Course, University of Salerno, Salerno, Italy, 1-2 Apr. 2019.
34. Energy Sustainability for Buildings and Communities. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 25 Mar. 2019.
35. Sustainable Energy. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 25 Mar. 2019.
36. Energy Research at University of Ontario Institute of Technology. Department of Industrial Engineering, University of Salerno, Salerno, Italy, 25 Mar. 2019.

37. Sustainable Energy: Approaches, Methods and Examples. The Energy Centre, University of Auckland, Auckland, New Zealand, 4 Dec. 2018.
38. Sustainability and Sustainable Development. Department of Industrial Engineering, University of Florence, Florence, Italy, 6 Nov. 2018.
39. Allocating Carbon Dioxide Emissions from Cogeneration Systems: Descriptions of Selected Output-Base. Department of Industrial Engineering, University of Florence, Florence, Italy, 6 Nov. 2018.
40. Using Exergy to Enhance Ecological and Environmental Understanding and Stewardship. Department of Industrial Engineering, University of Florence, Florence, Italy, 30 Oct. 2018.
41. Hydrogen Energy: A Key to Sustainable Energy. Department of Energy, Politecnico di Torino, Torino, Italy, 23 Oct. 2018.
42. Sustainable Energy: A Key to Sustainable Development. Energy Center Lab, Politecnico di Torino, Torino, Italy, 16 Oct. 2018.
43. Sustainable Energy. Department of Energy, Politecnico di Torino, Torino, Italy, 12 Oct. 2018.
44. Sustainable Energy: A Key to the Sustainability of Environmental Systems. Inst. for Integrated Energy Systems and Department of Mechanical Engineering, University of Victoria, 1 Aug. 2018.
45. Hydrogen Production via Thermochemical Water Decomposition Driven by High-Temperature Heat. Inst. for Integrated Energy Systems and Department of Mechanical Engineering, University of Victoria, 21 July 2017.
46. Energy Sustainability: Concepts and Transitions. Inst. for Integrated Energy Systems and Department of Mechanical Engineering, University of Victoria, 26 July 2016.
47. Hydrogen Production via Thermochemical Water Decomposition Driven by SCWR. Joint UOIT-IAEA Course on Science and Technology of Supercritical Water-Cooled Reactors (SCWRs), Oshawa, Ontario, 4-8 July 2016 (invited).
48. The Future of Sustainable Energy, China National Inst. of Standardization, Beijing, 29 June 2016.
49. Cogeneration and Environmental Impact, School of Environment, Beijing Normal University, Beijing, 30 June 2016.
50. Using Exergy to Enhance Ecological and Environmental Understanding and Stewardship, School of Environment, Beijing Normal University, Beijing, 29 June 2016.
51. Energy Sustainability for Buildings and Communities, School of Environment, Beijing Normal University, Beijing, 28 June 2016.
52. Sustainability and Sustainable Development, School of Environment, Beijing Normal University, Beijing, 27 June 2016.
53. Environmental Impact of Energy Systems, School of Environment, Beijing Normal University, Beijing, 27 June 2016.

54. Energy Sustainability: Concepts and Transitions, University of Iceland, Reykjavík, Iceland, 10 June 2016.

55. Net-zero Energy Buildings and Communities: Potential and the Role of Energy Storage. Meet the Energy Industry Seminar Series, Iceland School of Energy, Reykjavik University, Reykjavík, Iceland, 6 June 2016.

56. Future of Clean Energy in the Global Perspective, China Energy Research Society, Beijing, 31 May 2015.

57. Allocating Carbon Dioxide Emissions from Cogeneration Systems: Descriptions of Selected Output-Based Methods, School of Environment, Beijing Normal University, Beijing, 29 May 2015.

58. Using Exergy to Enhance Ecological and Environmental Understanding and Stewardship, School of Environment, Beijing Normal University, Beijing, 29 May 2015.

59. Energy Sustainability for Buildings and Communities, School of Environment, Beijing Normal University, Beijing, 28 May 2015.

60. Sustainable Engineering: A Complex and Crucial Quest, School of Systems and Enterprises, Stevens Institute of Technology, Hoboken, NJ, 18 Feb. 2015 (Distinguished Lecture Series of Center for Complex Systems and Enterprises).

61. Enhancing the Prospects for Renewable Energy and Environmental Stewardship through Hydrogen Energy Systems, Center for Environmental Systems, Dept. of Civil, Environmental and Ocean Engineering, Stevens Institute of Technology, Hoboken, NJ, 18 Feb. 2015.

62. Correlating Thermodynamics and Economic Investments to Improve the Rationale for Energy Research, School of Environment, Beijing Normal University, Beijing, 28 May 2015.

63. Energy Sustainability: Concepts and Examples, Amazon.com, Inc., Seattle, WA, 17 Aug. 2015.

64. Energy Sustainability: A Key to Addressing Environmental, Economic and Societal Challenges, Lassonde School of Engineering, York University, Toronto, 11 Aug. 2015.

65. Net-zero Energy Buildings and Communities: Potential and the Role of Energy Storage, Inst. for Integrated Energy Systems, University of Victoria, 12 Aug. 2014.

66. Energy Sustainability: Research and Advances, School of Naval Architecture and Marine Engineering, National Technical University of Athens, Athens, Greece, 1 July 2014.

67. Correlating Thermodynamics and Economic Investments to Improve the Rationale for Energy Research, Inst. for Integrated Energy Systems, University of Victoria, 30 Jul. 2013.

68. The Sustainable Provision of Energy Services for Buildings and Communities, Canadian Society for Senior Engineers Luncheon, Victoria, 1 Aug. 2013.

69. Energy Sustainability and the Roles of Bioenergy. EPSCoR Energy Policy Seminar Series, Energy Policy Platform, Iowa State University, Ames, Iowa, 6 Dec. 2012.

70. Energy Sustainability for Buildings and Communities. Inst. for Integrated Energy Systems, University of Victoria, 30 Jul. 2012.

71. Exergy Analysis of District Energy Systems. Summer Course on Exergy and Its Applications for Better Environment and Sustainability, Oshawa, Ontario, 30 Apr.-4 May 2012 (invited).

72. Exergy Analysis of Thermal Energy Storage Systems. Summer Course on Exergy and Its Applications for Better Environment and Sustainability, Oshawa, Ontario, 30 Apr.-4 May 2012 (invited).

73. Exergy Analysis of Aircraft Engines. Summer Course on Exergy and Its Applications for Better Environment and Sustainability, Oshawa, Ontario, 30 Apr.-4 May 2012 (invited).

74. Energy Sustainability for Buildings and Communities. Dept. of Energy Systems and Environmental Engineering, Ecole des Mines de Nantes, Nantes, France, 9 Nov. 2011 (invited).

75. Exergy: Concepts and Applications. Dept. of Energy Systems and Environmental Engineering, Ecole des Mines de Nantes, Nantes, France, 4 Nov. 2011 (invited).

76. Exergy as a Tool for Understanding and Improving Efficiency, Economics and Environmental Impact. Faculty of Architecture, Universita degli Studi di Sassari, Alghero, Italy, 3 Oct. 2011 (invited).

77. Ground Source Heating and Cooling. Faculty of Architecture, Universita degli Studi di Sassari, Alghero, Italy, 28 Sept. 2011 (invited).

78. Energy Sustainability for Buildings and Communities. Faculty of Architecture, Universita degli Studi di Sassari, Alghero, Italy, 23 Sept. 2011 (invited).

79. Energy Sustainability: A Critical Quest. Department of Mechanical and Aeronautical Engineering, University of Rome, Rome, Italy, 25 May 2011 (invited).

80. Energy Sustainability: A Critical Quest. Department of Energy, Polytechnic Institute of Milan, Milan, Italy, 11 May 2011 (invited).

81. Publishing Sustainability Research. National Science Foundation (NSF) Workshop on Mapping the Structure and Evolution of Sustainability Science, Washington, DC, 1 Dec. 2010 (invited)

82. Energy Sustainability: A Critical Quest. University of Ontario Institute of Technology Research Excellence Public Lecture, Oshawa, Ontario, 17 Feb. 2011 (invited).

83. Cu-Cl Cycle Modeling and Simulation. ORF Workshop: Thermo-Mechanical Design of Nuclear-Based Hydrogen Production, Oshawa, Ontario, 23 Feb. 2011.

84. End Use Efficiency – Industrial. United Nations Industrial Development Organization (UNIDO), Vienna, 23 March 2010 (with Banerjee, R., Cong, Y., Van Es, D., Gielen, D., Jannuzzi, G., Marechal, F., McKane, A.T., Nilsson, H., Rosen, M.A. and Worrell, E.).

85. End Use Efficiency – Industrial. Workshop on Industrial Energy Efficiency for the 21st Century, IIT Bombay, India, 22 Feb. 2010 (with Banerjee, R., Cong, Y., Van Es, D.,

Gielen, D., Jannuzzi, G., Marechal, F., McKane, A.T., Nilsson, H., Rosen, M.A. and Worrell, E.).

86. Advances in Sustainable Energy Technology: Hydrogen, Wind, Solar and Geothermal. Session on Sustainable Energy and Manufacturing, Campus Connections 2009, University of Ontario Institute of Technology and Durham College, Oshawa, 30 April 2009.

87. Non-fossil-based Methods for Hydrogen Production. Energy Futures Lab, Imperial College, London, England, 19 Feb. 2009.

88. Efficiency Improvement of Energy Systems Using Exergy: Principles and Applications to Cogeneration, Thermal Storage, Hydrogen Production and Integrated Energy Systems. CanmetENERGY, Natural Resources Canada, Varennes, Québec, 16 Dec. 2008.

89. Hydrogen Energy. 4th Annual Green Home Show, Kortright Centre for Conservation, Vaughan, Ontario, 27-28 Sept. 2008.

90. Hydrogen Production by Thermochemical Water Decomposition: Advances and Potential Energy Sources. Inst. for Integrated Energy Systems and Department of Mechanical Engineering, University of Victoria, 7 Aug. 2008.

91. Hydrogen Production by Thermochemical Water Decomposition: Advances and Links to Nuclear Energy. National Atomic Energy Agency of Poland and Institute of Chemistry and Nuclear Techniques, Warsaw, 4 July 2008.

92. Design of Improved Ceiling Fans: A Case Study in Engineering Design. School of Engineering, York Univ., Toronto, 4 Mar. 2008 (seminar and guest lecture in ENG 1000: Engineering Design I).

93. Teaching and Learning with a Laptop: Experiences at UOIT. Best Engineering and Science Teaching Seminar, Faculty of Science and Engineering, York Univ., Toronto, 12 Feb. 2008.

94. Thermodynamic Analysis of Aerospace Engines: Using the Second Law to Improve Understanding and Designs. Physics and Astronomy Departmental Colloquium and Graduate Seminar Series, School of Engineering, York Univ., Toronto, 30 Jan. 2008 (seminar and guest lecture in ENG 3310: Space Mission Design).

95. Nuclear-Based Hydrogen Production: An Integrated Approach Involving Thermochemical Water Decomposition and a Supercritical Water Cooled Nuclear Reactor. Dept. of Mechanical Engineering, McMaster Univ., Hamilton, Ontario, 13 Feb. 2008 (seminar and guest lecture).

96. Thermal Energy Storage. University of Ontario Institute of Technology, Oshawa, 26 Nov. 2007.

97. Non-fossil-based Methods for Hydrogen Production: Energy Source Selection and Efficiency Improvement. Inst. for Integrated Energy Systems and Department of Mechanical Engineering, University of Victoria, 20 Aug. 2007.

98. Using Exergy for Understanding Efficiencies of Energy Systems and Environmental Impact, Institute for Energy Systems, School of Engineering and Electronics, University of Edinburgh, Scotland, 17 July 2007.

99. Using Exergy to Understand and Improve Efficiencies of Hydrogen Production, School of Engineering and the Built Environment, Napier University, Scotland, 17 July 2007.

100. Exergy: The Key to Understanding and Improving the Efficiency of Energy Systems, Environmental Change Institute, Centre for the Environment, Oxford University, England, 9 July 2007.

101. Hydrogen from Non-Fossil Fuel Sources: Using Exergy to Understand and Improve Efficiencies, Energy Engineering Seminar Series, Department of Engineering, Queen Mary University of London, England, 6 July 2007.

102. UOIT, Engineering, Manufacturing and Energy. Tecstar, Whitby, Ontario, 27 April 2006.

103. Educating the New Manufacturing Workforce: Manufacturing Engineering at University of Ontario Institute of Technology. The New Workforce: Attracting, Developing and Retaining Skilled and Talented People, Canadian Manufacturers & Exporters 20/20 SMART Session, Toronto, 12 April 2006 (invited).

104. Benefits of Using Exergy for the Allocation of Carbon Dioxide Emissions from Cogeneration Systems, Department of Mechanical Engineering, University of Padova, Italy, 20 March 2006.

105. Allocating Carbon Dioxide Emissions from Cogeneration: Advantages of an Exergy-Based Approach, Sergio Stecco Department of Energy, University of Florence, 16 March 2006.

106. Utility-Based Cogeneration: Reductions in Energy Use and Environmental Emissions Achievable for a Region, Sergio Stecco Department of Energy, University of Florence, 16 March 2006.

107. Advantages of an Exergy Approach for Allocating Carbon Dioxide Emissions from Cogeneration, Energy Systems Section, Department of Mechanical and Aeronautical Engineering, University of Rome, 10 March 2006.

108. Mechanical Systems BASc: A Technology-to-Engineering/University Pathway, Meeting of Heads of Technology for Colleges in the Central Ontario Region, 23 Sept. 2005.

109. Trends in Engineering Education, Dept. of Mechanical Engineering, University of Victoria, Victoria, B.C., 16 Aug. 2005.

110. Green Exergy: Improving Understanding and Application of Green Energy, Inst. for Integrated Energy Systems, University of Victoria, Victoria, B.C., 10 Aug. 2005.

111. Engineering and University of Ontario Institute of Technology: Developing a New Faculty and New University. Dept. of Mechanical and Industrial Engineering, Ryerson University, Toronto, 28 March 2005.

112. BASc in Mechanical Systems: A Reasonable Pathway from Technology to Engineering/University. School of Engineering Technology and Applied Science, Centennial College, Toronto, 16 Feb. 2005.

113. Perspectives from Canada on the Future of Engineering Education and the Engineering Profession, Wrocław University of Technology, Poland, 28 Dec. 2004.

114. University of Ontario Institute of Technology and its Programs in Engineering, Wrocław University of Technology, Poland, 28 Dec. 2004.
115. The Future of Engineering Education and the Engineering Profession: Perspectives from Canada, Warsaw University of Technology, Poland, 16 Dec. 2004.
116. The New University of Ontario Institute of Technology and its Engineering Programs, Warsaw University of Technology, Poland, 16 Dec. 2004.
117. Engineering and the New University of Ontario Institute of Technology, Inst. of Fundamental Technological Research, Div. of Technical Sciences, Polish Academy of Sciences, Poland, 14 Dec. 2004.
118. Aerospace Applications of Exergy Analysis: Accounting for a Varying Reference Environment and Assessment of a Turbojet, Dept. of Mechanical Engineering, University of Victoria, Victoria, B.C., 11 Aug. 2004.
119. Allocating Carbon Dioxide Emissions from Cogeneration Systems, Inst. for Integrated Energy Systems, University of Victoria, Victoria, B.C., 28 July 2004.
120. BASc in Mechanical Systems: A Reasonable Pathway from Technology to Engineering/University. Schools of Technology and Applied Science, Durham College, Oshawa, Ontario, 12 Apr. 2004.
121. BASc in Mechanical Systems: A Reasonable Pathway from Technology to Engineering/University. General Motors of Canada Limited, Oshawa, Ontario, 4 Mar. 2004 (invited).
122. Roles of Mechanical Engineers and Canadian Society for Mechanical Engineering. CSME Student Night, Ryerson Univ., Toronto, 22 Mar. 2004.
123. The New University of Ontario Institute of Technology: Energy, Engineering and Excitement. Inst. for Integrated Energy Systems, University of Victoria, Victoria, B.C., 30 July 2003.
124. Manufacturing Engineering. Ontario Guidance Leadership Association Conf., Oshawa, 15 May 2003.
125. Presentations to Ventura Park Public School Students on “Engineering,” Grades 7 and 8, 4 April 2003.
126. Use of Exergy Methods on Hydrogen Production Systems and Fuel Cells. Hydrogen and Electrochemical Studies Seminar Series, Univ. of Toronto, 14 Nov. 2002 (invited).
127. Reducing Energy Use and Environmental Impact Cost-Effectively: Case Study for a University. Environmental Science Program, State University of New York at Brockport, 8 April 2002 (invited).
128. Design-Oriented Research in Thermal and Energy Engineering. Faculty of Pure and Applied Science, York Univ., Toronto, 18 Apr. 2001 (invited).
129. Exergy (Energy Quality) Analysis of a CANDU Nuclear Power Plant. Atomic Energy of Canada Ltd., 11 Apr. 2001 (public seminar, invited by Can. Nuclear Soc. and Ontario Chap. of CSME).

130. Modelling, Analysis, Design and Improvement of Energy Systems: An Overview of Selected Research. College of Engineering, University of Saskatchewan, Saskatoon, 9 Feb. 2001 (invited).
131. Challenges and Opportunities Facing the College of Engineering. University of Saskatchewan, Saskatoon, 8 Feb. 2001 (invited).
132. Renewable Energy for a Niche Application. Dept. of Mechanical Engineering, Univ. of Victoria, 1 Aug. 2000 (invited guest lecture in "Sustainable Energy Systems Design," a combined graduate/undergraduate course (MECH580/MECH499)).
133. Research Projects with Industry and Students. Dept. of Mechanical Engineering, Hong Kong Technical College, Tsing Yi, 11 July 2000 (invited).
134. The Education System in Canada. Dept. of Mechanical Engineering, Hong Kong Technical College, Tsing Yi, 10 July 2000 (invited).
135. Cogeneration: Thermodynamic Considerations and Utility-Based Applications in a Region. Laboratory for Industrial Energy Systems, Swiss Federal Inst. of Technology - Lausanne, Switzerland, 21 June 2000 (invited).
136. Energy and Exergy Analyses of Energy Utilization in Canada. Laboratory for Industrial Energy Systems, Swiss Federal Inst. of Technology - Lausanne, Switzerland, 15 June 2000 (invited).
137. Exergy and its Application in Improving Thermal Electricity Generation. Ontario Power Generation, Toronto, 30 Nov. 1999 (invited).
138. Energy, Exergy, Environment, Economics and Ecstasy. Research Seminar, Ryerson Polytechnic Univ., 7 Oct. 1999.
139. Environment and Energy Systems. Centre for Environment and Development, University of West Indies, Mona, Kingston, Jamaica, 19 March 1999 (invited).
140. Selected Implications and Applications of Exergy Analysis. Inst. for Integrated Energy Systems, Univ. of Victoria, 21 Aug. 1997 (invited).
141. Exergy. Dept. of Mechanical Engineering, McMaster Univ., 8 Oct. 1997 (invited guest lecture).
142. Presentation to Wilshire Elementary School Students on "Science, Technology and Engineering," Grades 1 and 5, 29 April 1999; Kindergarten, 5 Dec. 1997; Grades 6-8, June 1996.
143. Environmental Impact of Industrial Processes. Dept. of Mechanical Engineering, Univ. of Victoria, 20 Aug. 1996 (invited).
144. Exergy Analysis and Fuel Cells. Laboratory for Next Generation Fuel Cell for Transportation Applications, Dept. of Mechanical Engineering, Univ. of Victoria, 8 Aug. 1996 (invited).
145. Second-Law Analysis of Energy Systems. Inst. for Integrated Energy Systems, Dept. of Mechanical Engineering, Univ. of Victoria, 18 Aug. 1995 (invited).

146. Exergy Analysis: Concepts and Applications. Dept. of Mechanical Engineering, Univ. of Toronto, 16 May 1994 (invited guest lecture in "Environmental Engineering").
147. Thesis Projects in Aerospace and Mechanical Engineering. Dept. of Mechanical Engineering, Ryerson Polytechnic Univ., 19 Mar. 1993 and 17 Mar. 1994.
148. Second-Law Analysis: Concepts and Applications. Dept. of Mechanical Engineering, Ryerson Polytechnical Inst., 31 Oct. 1991.
149. Reducing Harmful Emissions in the Transportation Sector. Can. Fed. Univ. Women-Scarborough, 9 Oct. 1991 (invited).
150. Second-Law Analysis: Concepts and Applications. Dept. of Mechanical Engineering, Univ. of Victoria, 28 May 1990 (invited).
151. Teaching, Research and Other Experiences in China during the Summer of 1989. Dept. of Mechanical Engineering, Ryerson Polytechnical Inst., Toronto, 4 Oct. 1989.
152. Analyzing Energy Utilization: Objectives, Approach and Methodology Used and Results of an Analysis of Canada. Ontario Ministry of Energy, Toronto, 31 Aug. 1989.
153. Thermodynamic Analysis of the Effectiveness of Energy Utilization for a Country. Energy Committee, Ministry of Economic Affairs, Taipei, Taiwan, 21 June 1989 (invited).
154. Some Recent Advances in Energy Research in Canada. Energy Committee, Ministry of Economic Affairs, Taipei, Taiwan, 21 June 1989 (invited).
155. Some Recent Advances in Canadian Research in Thermal Energy Storage. Dept. of Mechanical and Marine Engineering, Hong Kong Polytechnic, 13 June 1989.
156. Second-Law Analysis of Nuclear Systems. Dept. of Mechanical Engineering, Univ. of Toronto, 25 April 1989 (invited).
157. Exergy Analysis. Dept. of Mechanical Engineering, Univ. of Toronto, 8 Nov. 1988 (invited guest lecture in "Energy Systems Analysis").
158. Concepts in Exergy Analysis. Dept. of Mechanical Engineering, Univ. of Toronto, 9 Oct. 1987 (invited guest lecture in "Energy Systems Analysis").
159. Applications of Exergy Analysis. Dept. of Mechanical Engineering, Univ. of Toronto, 23 Oct. 1987 (invited guest lecture in "Energy Systems Analysis").
160. Review of the Exergy Analysis-Enhanced Version of Aspen Plus. Aspen Technology Inc., Cambridge, Mass., 16 Dec. 1987.
161. The Enhancement of a Process Simulator for Second Law Analysis. Dept. of Mechanical Engineering, Queen's Univ., Kingston, Ont., June 1986 (invited).
162. The Enhancement of a Process Simulator for Second Law Analysis. Astronautics Corp. of America, Technical Research Center, Madison, Wisconsin, 18 Feb. 1986 (invited).
163. The Enhancement of a Process Simulator for Second Law Analysis. Energy and Environmental Systems Div., Argonne National Lab., Illinois, 17 Feb. 1986 (invited).
164. The Enhancement of Aspen Plus for Exergy Analysis. Inst. for Hydrogen Systems, Mississauga, Ont., 12 Dec. 1985.

165. Flowsheet Analysis using the Aspen Plus Process-Simulation Computer Code. Ontario Ministry of Energy, Toronto, Aug. 1985.

166. Flowsheet Analysis using the Aspen Plus Process-Simulation Computer Code. Inst. for Hydrogen Systems, Toronto, Sept. 1984.

167. Exergy Analysis. Inst. for Hydrogen Systems, Mississauga, Ont., April 1984.

OTHER ADDRESSES

1. Final Conclusions. Int. Conf. on Psychology of Sustainability and Sustainable Development: Research Advancements and Future Perspectives for Decent Work, Decent Lives and Healthy Lives, 6 Jun. 2024, Florence, Italy (with A. Di Fabio).

2. Final Reflection and Conclusion. Int. Conf. on Psychology of Sustainability and Sustainable Development: A Current Research Area, 6 Dec. 2022, Florence, Italy (with A. Di Fabio and J.M. Peiró).

3. Welcome Remarks of Chief Guest. First Virtual International Conference on Advances in Renewable and Sustainable Energy Systems (ICARES-2020). 3-5 Dec. 2020, Kattankulathur, Chennai, India and webinar (invited).

4. Engineering Institute of Canada: Advancing Engineering in Canada. 2019 IEEE Pacific Rim Conference on Communications, Computers and Signal Processing, 21-23 August 2019, Victoria, B.C., Canada (conference banquet invited speaker).

5. Conclusions and New Opportunities: From Research to Application. Int. Conf. on Strengthening Sustainability Science and its Transdisciplinary Nature: The New Area of the Psychology of Sustainability and Sustainable Development, 12 Nov. 2018, Florence, Italy (with A. Di Fabio).

6. Exploring the Advancements in the Field of Biofuels & Bioenergy. 7th International Conference on Biofuels and Bioenergy, 2-4 Oct. 2017, Toronto, Canada (opening ceremony invited talk as honorable guest).

7. Welcome Remarks. Opening Session, 1st Canada Hong Kong Engineering Business Conference, 5 November 2009, Hong Kong.

8. Introductory Address, 2nd Engineering Institute of Canada Climate Change Technology Conf., 12-15 May 2009, Hamilton, Ontario.

9. Official Opening: Welcome and Introductory Remarks. 4th IASME/WSEAS Int. Conf. on Energy and Environment (EE 2009), 24-26 Feb. 2009, Cambridge, UK.

10. Opening Address. ORF Workshop on Thermo-mechanical Design of Nuclear-Based Hydrogen Production, 28 May 2007, Oshawa, Ontario.

11. University Opportunities in R&D, Greater Toronto Marketing Alliance (GTMA)/Durham Region/ UOIT Sweden Industrial Delegation Visit, 26 Oct. 2006, Oshawa, Ontario.

12. The Faculty of Engineering and Applied Science's Strategic Direction at UOIT and the Role of the Automotive Centre of Excellence. General Motors of Canada Limited Suppliers Council Meeting, 29 Sept. 2005, Oshawa, Ontario.

13. Opening Address**.** International Green Energy Conference, 12-16 June 2005, Waterloo, Ontario.
14. Opening and Closing Remarks. Empowering the Learner: Conf. on Teaching and Learning in Engineering Education, 13 May 2005, Oshawa, Ontario.
15. Closing Remarks. AUTO21 Highly Qualified Personnel (HQP) Conf. 10-12 May 2005, Oshawa, Ontario.
16. Welcome and Opening Address. Durham Region Community Meeting on Manufacturing 20/20 Initiative, Canadian Manufacturers and Exporters. 26 Nov. 2004, Oshawa, Ontario.
17. Opening Address. Canadian Society for Mechanical Engineering Forum 2004. 1-4 June 2004, London, Ontario.
18. Opening Address. International Conf. on the Future of Engineering Education, 16-18 Feb. 2003, Montreal.
19. Welcome Address. Mechanical Engineering Internship, PEY and Co-op Programs. 5th CSME University/Industry Communications Exchange, 26 March 1999, Toronto.
20. Closing Speaker, Department of Mechanical Engineering Awards Nights, Ryerson Univ., Toronto, 1995-99.
21. Welcoming Address. First Int. World Energy System Conf., 19-21 June 1996, Toronto.

PANEL DISCUSSIONS

1. Round Table on Sustainability and Sustainable Development: Bridging Engineering and Applied Psychology. 31st International Congress of Applied Psychology (ICAP 2026), 21-25 Jul. 2026, Florence, Italy (invited and co-coordinator).
2. Symposium on Sustainability Science and the Contribution of the Psychology of Sustainability and Sustainable Development. 31st International Congress of Applied Psychology (ICAP 2026), 21-25 Jul. 2026, Florence, Italy (invited and co-chair).
3. Panel on Sustainable Energy Systems: Nuclear, Renewables, and Hydrogen. Faculty of Engineering and Applied Science at Ontario Tech University Research Day 2025, 20 Feb. 2025, Oshawa, Ontario, Canada (invited).
4. Panel Discussion on Climate Change Mitigation and Adaptation & Challenges and Future Directions for Climate Research. Climate Forum 2023, 16-18 Aug. 2023, Canadian Centre for Climate Change and Adaptation, University of Prince Edward Island, St. Peter's Bay, Prince Edward Island, Canada.
5. Electric vehicles: Which sort of waste do they produce? How can they be recycled? (Panel on Focus Session IV). Sixth Symposium on Circular Economy and Urban Mining (SUM 2022), 18-20 May 2022, Capri, Italy.
6. Panel on Research, Challenges, Opportunities and Future Directions in Hydrogen Energy and Fuel Cells. Canada-Turkey Hydrogen Workshop, 25 Oct. 2021, virtual.

7. Panel Discussion Session on Energy and Education. TUBA World Conference on Energy Science and Technology (TUBA WCEST-2021), 8-12 Aug. 2021, Turkey (online) (invited).
8. Moderator, Future City Panel Discussion at Kick-Off Event, Coordinated by Engineers Canada and Engineers of Tomorrow, 17 Mar. 2021, virtual.
9. Panel Discussion. Workshop on Hydrogen Energy Technologies: Challenges and Opportunities, 13 Jan. 2021, Toronto.
10. Panel on Future Collaboration in Research and Research Grant Applications. 2nd International Conference on Energy and Power (ICEP2018), 13-15 Dec. 2018, Sydney, Australia.
11. Panel on Production and Handling of Hydrogen as a Fuel Storage of Energy. International Conference on Energy from Biomass and Organic Waste, 21-23 June 2017, Arequipa, Peru.
12. Panel on The Hydrogen Role in the Integration of the Biogas Production and Gasification Process. International Conference on Energy from Biomass and Organic Waste, 21-23 June 2017, Arequipa, Peru.
13. Teaching about Safety – Best Practices and Examples. Minerva–Lassonde Learning Forum for Safety, 23 Apr. 2015, Toronto.
14. Round Table with Keynotes on Rational End Use, 4th World Engineering Convention, 4-9 September 2011, Geneva, Switzerland
15. Round Table "Thermodynamics and Society, 23rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2010), 14-17 June 2010, Lausanne, Switzerland.
16. Panel on the Future of Engineering. 1st Canada Hong Kong Engineering Business Conference, 5 November 2009, Hong Kong.
17. Panel on Ground Source Heating and Cooling: Considerations, Constraints, and Benefits, Ground Source Heating and Cooling Symposium: Powering Ontario's Future, Vaughan, Ontario, 20-21 Oct. 2009 (invited).
18. Panel on the Future of Engineering Education, Professional Engineers Ontario Future of Engineering Education and Licensure Conf., Toronto, 21 June 2007 (invited).
19. Seasonal Thermal Energy Storage for Sustainable Development, Panel session on The Role of Seasonal Storage Systems in Sustainable Development, Int. 2nd Green Energy Conference, Oshawa, Ontario, 25-29 June 2006 (invited).
20. Expert Panel: The New Workforce: Attracting, Developing and Retaining Skilled and Talented People, Canadian Manufacturers & Exporters 20/20 SMART Session, Toronto, 12 April 2006 (invited).
21. Deans Panel: The Future of Engineering Education. Empowering the Learner: Conf. on Teaching and Learning in Engineering Education, Oshawa, Ontario, 13 May 2005.
22. Interdisciplinary Engineering Programs. Int. Conf. on the Future of Engineering Education, Montreal, 16-18 Feb. 2003 (invited).

23. Faculty Working with Academic Assistants. GREET Teaching Seminar, Ryerson Univ., Toronto, 10 Jan. 2001.
24. Mechanical Engineering Internship, PEY and Coop Programs. 5th CSME University/Industry Communications Exchange, Toronto, 26 March 1999 (invited).
25. Research that Society Wants, Needs and Understands. 2nd SRC Forum, Ryerson Polytechnic Univ., Toronto, 28 Apr. 1994.
26. Computer-Aided Design - Industry Challenges and Implementation in Academic Curriculum: Actual and Future Trends. 20th Ont. Universities Computing Conf., Waterloo, Ontario, 15-17 May 1989.

CONFERENCE PRESENTATIONS

Presentations with Accompanying Publications

Over 600, as provided in Publications listings under "Papers in Refereed Conference Proceedings" and "Papers in Non-Refereed Conference Proceedings."

Presentations without Accompanying Publications

1. Shirazi, P., Rosen, M.A. and Alavy, M. A Three-Dimensional Numerical Model to Investigate the Performance of a PCM-Based Foundation-Based Ground Source Heat Pump System. Canadian Society for Mechanical Engineering International Congress/31st Annual Conference of the Computational Fluid Dynamics Society of Canada (CSME/CFD2024), 26-29 May 2024, Toronto, Canada (presentation 411).
2. Califano, M., Califano, F., Sorrentino, M., Rosen, M.A. and Pianese, C. SOC-Based Microgrid: Development of Medium Level Controls in a Multilevel Algorithm Framework. European Hydrogen Energy Conference 2022 (EHEC 2022), 18-20 May 2022, Madrid, Spain.
3. Rosen, M.A., Engineering Sustainability and Electric Cars. Panel on Focus Session IV: Electric vehicles: Which sort of waste do they produce? How can they be recycled? Sixth Symposium on Circular Economy and Urban Mining (SUM 2022), 18-20 May 2022, Capri, Italy.
4. Sorrentino, M., Rosen, M., Rispoli, N., Vitale, F., Califano, F. and Califano, M. Energy Grand Challenges for International Cooperation. The International Cooperation Expo (EXCO2019): Job creation and Innovation for Sustainable Development, 15-17 May 2019, Rome.
5. Self, S.J., Rosen, M.A. and Reddy, B.V. Analysis and Comparison of District and Individual Solar Heating Systems with STES within Communities. 6th Int. Conf. and Exhibition on Clean Energy, 21-23 Aug. 2017, Toronto.
6. Self, S.J., Rosen, M.A. and Reddy, B.V. Subsystem Considerations that Affect Design of Solar Thermal Heating Systems with Seasonal Thermal Energy Storage. 6th Int. Conf. and Exhibition on Clean Energy, 21-23 Aug. 2017, Toronto.

7. Rosen, M.A., Cogeneration with Biofuels. International Conference on Energy from Biomass and Organic Waste, 21-23 June 2017, Arequipa, Peru.
8. Bulucea, C.A., Nicola, D.A., Rosen, M.A., Mastorakis, N.E. and Bulucea, C.A. Operation Analysis of AC Traction Motors in terms of Electromagnetic Torque Capability on Sustainable Railway Vehicles. 20th International Conference on Circuits, Systems, Communications and Computers (CSCC 2016), 14-17 July 2016, Corfu, Greece.
9. Tolmie, R. and Rosen, M.A. Split Exergy Storage Systems. 5th International Symposium on Energy Challenges and Mechanics, 10-14 July 2016, Inverness, Scotland.
10. Mehrpooya, M., Bahramian, P., Pourfayaz, F. and Rosen, M.A. The Design and Optimization of a Molten Carbonate Fuel Cell, Gas Turbine and Organic Rankine Cycle Hybrid System, 5th World Sustainability Forum, 7-9 Sep. 2015, Basel, Switzerland.
11. Rosen, M.A. Energy Sustainability: Examples and Needs. Toronto Global Forum–Globalization at the Cross Roads: International Economic Forum of the Americas, 30-31 Oct. 2013, Toronto, Canada (Session on Leveraging Clean Technologies: Towards Energy Savings).
12. Wang, Z., Naterer, G.F., Rosen, M.A., Dincer, I. and Gabriel, K. Conversion of Off-peak Nuclear Energy to H_2 and Onboard H_2 Supply. 8th International Hydrail Conf., 11-12 June 2013, Toronto, Canada.
13. Ahmadi, P., Dincer, I. and Rosen, M.A. Exergy Analysis and Optimization of an Air-to-Water Heat Pump using a Genetic Algorithm. 11th Int. Conf. on Sustainable Energy Technologies, 2-5 Sept. 2012, Vancouver, B.C., Canada.
14. Ghandehariun, S., Naterer, G.F., Rosen, M.A. and Wang, Z. Quenching Method for Heat Recovery from Molten CuCl Droplets in the Cu-Cl Cycle. Int. Conf. on Hydrogen Production, 24-27 June 2012, Seoul, Korea.
15. Easa, S., Beaumont, R., Rosen, M.A. and White, R. Innovative Method for Assessing CEAB Graduate Attributes in Large Classes. Ryerson's May Faculty Conf., 22 May 2012, Toronto.
16. Rosen, M.A. 2013. Assessing Global Resource Utilization Efficiency in the Industrial Sector. World Resources Forum, 19-21 Sept. 2011, Davos, Switzerland.
17. Rosen, M.A. and Abu Rukah, Y. Energy Sustainability: A Key to Addressing Environmental, Economic and Societal Challenges. 10th Int. Conf. of Jordanian Geologists Association, 3-5 Apr. 2011, Amman, Jordan (accepted).
18. Abu Rukah, Y., Rosen, M.A. and Ghrefat, H. Hydrogeological Data Evaluation and Solid Waste Management in Al-Akeeder Landfill Site, Jordan: Assessing Pollution Risks. 10th Int. Conf. of Jordanian Geologists Association, 3-5 Apr. 2011, Amman, Jordan (accepted).
19. Rosen, M.A. and Abu Rukah, Y. A Pragmatic Approach for Sustainable Development of the Red-Mediterranean-Dead Seas Canal Project: A Case Study. Int. Conf. on Stormwater and Urban Water Systems Modeling, 24-25 Feb. 2011, Toronto.
20. Abu Rukah, Y., Rosen, M.A. and Ghrefat, H. Hydrogeological Data Evaluation and Solid Waste Management in Al-Akeeder Landfill Site, Jordan: Assessing Pollution Risks.

International Conference on Energy, Water and Environment, 12-15 December 2010, Amman, Jordan.

21. Rosen, M.A. and Abu Rukah, Y. A Pragmatic Approach to Sustainable Development: Case Study of the Red-Mediterranean-Dead Seas Canal Project. International Conference on Energy, Water and Environment, 12-15 December 2010, Amman, Jordan.

22. Mehmood, S., Reddy, B.V. and Rosen, M.A. Effect of Biomass and Coal Co-Firing on Greenhouse Gas Emissions. Sustainable Energy Conference, 23-25 Sept. 2010, University of Delaware, Newark (poster presentation).

23. Orhan, M.F., Dincer, I. and Rosen, M.A. A New Approach to Combine Nuclear and Renewable Energy Sources to Produce Hydrogen with a Copper-Chlorine Thermochemical Cycle. Renewable Hydrogen National Symposium, 18-19 Jan. 2010, Winnipeg, Manitoba.

24. Orhan, M.F., Dincer, I. and Rosen, M.A. Enhancing Understanding and Efficiency of Nuclear and Hydrogen Energy Systems Using Exergy. Session on Nuclear: Hydrogen Production, Symposium on Sustainable Energy, 58th Canadian Chemical Engineering Conference, 19-22 October 2008, Ottawa, Ontario.

25. Orhan, M.F., Dincer, I. and Rosen, M.A. Performance Assessment of a Cu-CI Cycle for Nuclear-Based Hydrogen Production. Session on Nuclear: Hydrogen Production, Symposium on Sustainable Energy, 58th Canadian Chemical Engineering Conference, 19-22 October 2008, Ottawa, Ontario.

26. Rosen, M.A. Hydrogen Energy Systems: Facilitating Carbon-Free and Sustainable Energy. Engineering in a Climate of Change International Symposium, 16 Oct. 2008, Toronto.

27. Orhan, M.F., Dincer, I. and Rosen, M.A. Performance Analysis of a Cu-CI Cycle for Nuclear-Based Hydrogen Production. Canadian Hydrogen Association Workshop: Hydrogen Energy Research & Development in Canada: Past, Present and Future, 21-22 May 2008, Quebec City.

28. Naterer, G.F., Gravelsins, R.J., Gabriel, K.S. and Rosen, M.A. Scale-up of a Copper-Chlorine Thermochemical Cycle for Hydrogen Production. Session on Hydrogen Production and Storage, 4th Canadian Symposium on Fuel Cell Systems, 57th Canadian Chemical Engineering Conference, 28-31 October 2007, Edmonton, Alberta.

29. Rosen, M.A. Hydrogen Production from Non-Fossil Fuel Sources: Understanding and Improving Efficiencies. Canadian Hydrogen Association Workshop: Hydrogen Production from Non-Fossil Sources, 30 May 2007, Oshawa, Ontario.

30. Granovskii, M., Dincer, I. and Rosen, M.A. Life Cycle Assessment of Hydrogen Production Techniques and Fuel Cell Vehicles, 1st Annual Colloquium on Fuel Cell and Hydrogen Technologies, 1-2 June 2006, Kingston, Ontario.

31. Sahin, A.D., Dincer, I. and Rosen, M.A. Investigation of a Wind-Solar-Hydrogen Hybrid System, Int. Hydrogen Energy Congress and Exhibition, 13-15 July 2005, Istanbul, Turkey.

32. Bakan, K., Dincer, I. and Rosen, M.A. Exergoeconomic Analysis of Ice Slurry Cold Thermal Energy Storage Systems. 55th Can. Chemical Eng. Conf., 16-19 Oct. 2005, Toronto.

33. Granovskii, M., Dincer, I. and Rosen, M.A. Application of Oxygen Ion-Conductive Membranes for Simultaneous Electricity and Hydrogen Generation. Proc. 55th Can. Chemical Eng. Conf., 16-19 Oct. 2005, Toronto.
34. Pathways from Technology to Engineering. Engineering and Technology FORUM 2003: The Evolving Character of the Engineering Team, Toronto, 7 Nov. 2003
35. Safety in Engineering: A Case Study Approach. 10th Annual Ryerson Faculty Conf., Ryerson University, 16-17 May 2001, Toronto.
36. Exergy Efficiencies of Sensible, Mixed Thermal Energy Storage Systems. ASHRAE Annual Meeting, 24-28 June 2000, Minneapolis, Minnesota (with I. Dincer).
37. Increasing the Exergy Storage Capacity of Thermal Storages Using Stratification. 50th Anniversary GREET/SRC Workshops, Ryerson Polytechnic University, 12-13 May 1998, Toronto (with R. Tang).
38. Quality Programs. Chairs/Directors Orientation and Renewal Workshops, Ryerson, 9 June 1998.
39. The Distribution Across Partly Cloudy Skies of Diffuse Solar Radiation. 3rd Ryerson SRC Celebration, 3 April 1997, Toronto.
40. An Energy and Environment Equilibrium Model for the Assessment and Optimization of Economic and Environmental Impacts in Cogeneration/District Energy Systems. Canadian Operational Research Society Annual Conf. (CORS 97), 26-28 May 1997, Ottawa (with Y.J. Wu).
41. Analysis of a Design for a Cogeneration-Based District Energy System. Ryerson SRC Celebration, 28 March 1996, Toronto (with M. Le and J. Dimitriu).
42. Substituting Natural Gas for Electricity to Increase the Efficiency of Space Heating in Ontario. Environment and Energy Conf. of Ontario, 31 Oct.-2 Nov. 1995, Toronto (with E. Sy and P. Gharghouri).
43. Analysis of a Design for a Cogeneration-Based District Energy System. Environment and Energy Conf. of Ontario, 31 Oct.-2 Nov. 1995, Toronto (with M. Le and J. Dimitriu).
44. Modelling and Assessing the Efficiency of Thermal Energy Storage Systems. Ryerson SRC Celebration, 30 March 1995, Toronto.
45. Aerospace Engineering at Ryerson Polytechnic University. Int. Space Development Conf., 26-30 May 1994, Toronto (invited).
46. Implementation of Design in the Mechanical Engineering Program at Ryerson Polytechnic University. Annual Meeting of St. Lawrence Section of Amer. Soc. for Eng. Education (ASEE), 1-2 Oct. 1993, Rochester, NY (with J. Dimitriu).
47. Advantages of District Heating and District Cooling in Ontario. Int. Conf. on Romania and Romanians in Contemporary Science, 24-27 May 1994, Sinaia, Romania (with J. Dimitriu).
48. Ontario's Energy Challenges. Introductory presentation for "Management of Change: A Program for Baltic Energy Professionals," 10 May 1993, Toronto (invited).

49. Utility-Based Cogeneration for Ontario Hydro: An Opportunity Not To Be Lost Again. To South Bruce Environmental Assessment Team, 12 July 1991, Toronto.

50. Using the Exergy Optic: Applications in Gas Processing. IESVic Gas Strategy Workshop: Civilization, Our Energy System - and Natural Gas: The Next Three Decades (1990-2020), 28-30 May 1990, Victoria, B.C. (invited).

51. Implementing of Computer Aided Design (CAD) in Mechanical Engineering Drafting Labs. American Soc. for Eng. Education Annual Conf., 24-28 June 1990, Toronto (with J. Dimitriu).

DETAILED LIST OF PUBLICATIONS FOR MARC A. ROSEN

REFEREED JOURNAL PUBLICATIONS

Refereed Journal Publications (published or accepted for publication)

1. Arashrad, P., Sharafi laleh, S., Rabet, S., Yari, M., Soltani, S. and Rosen, M.A. 2025. Real-time Modelling of a Solar-driven Power Plant with Green Hydrogen, Electricity, and Freshwater Production: Techno-economics and Optimization. *Sustainability*. Accepted 11 Apr. 2025.

2. Golaki, P.P., Zarnoush, M., Zolfaghari, S.M., Soltani, M. and Rosen, M.A. 2025. Comprehensive Examination of a Green Hybrid Biomass-Integrated Compressed Air Energy Storage System with PEM Hydrogen Production Across Various Operating Modes. *Journal of Energy Storage* 121:116545.

3. Ganji, M.J., Agelin-Chaab, M. and Rosen, M.A. 2025. Experimental Investigation of PCM-based Battery Pack Performance under Elevated Ambient Temperature. *Batteries* 11(2):67.

4. Rosen, M.A. 2025. The Sustainable Development Goals: Past, Present and Future. *European Journal of Sustainable Development Research* 9(2):em0281 (editorial).

5. Nouri, A., Hasanzadeh, A., Chitsaz, A., Rosen, M.A. and Khalilian, M. 2025. Comparison of Various CO_2 Capture Strategies for Five Optimized Fuel-To-Power Systems based on Solid Oxide Fuel Cells: Technical, Economic, and Environmental Analyses. *Energy* 317:134683

6. Ahmadfard, M., Baniasadi, E. and Rosen, M.A. 2025. Utilizing the Finite Line Source Solution for Evaluating Heat Loss and Heat Storage Rates in Borehole Thermal Energy Storage Systems. *Journal of Energy Storage* 110:115337.

7. Rosen, M.A. 2025. Artificial Intelligence and Sustainable Development. *European Journal of Sustainable Development Research* 9(1):em0275 (editorial).

8. Rosen, M.A. 2024. Using Exergy to Address a Circular Economy. *Detritus* 29:15-26.

9. Gharamaleki, F.P., Sharafi Laleh, S., Ghasemzadeh, N., Soltani, S. and Rosen, M.A. 2024. Optimization of a Biomass-based Power and Fresh Water-Generation System by Machine Learning using Thermoeconomic Assessment. *Sustainability* 16(20):8956.

10. Rosen, M.A. and Zhou, Y. 2024. CEST Conversation with Prof. Marc A. Rosen: Evolving Responsibilities and Contributions in Science and Engineering for Global Carbon Neutrality Transitions. *Clean Energy Science and Technology* 2(3):239 (viewpoint article).

11. Kilkis, S., Krajacic, G., Duic, N., Rosen, M.A. and Al-Nimr, M.A. 2024. Sustainable Development of Energy, Water and Environment Systems as a Key Opportunity for Decarbonization. *Energy Conversion and Management* 320:118953 (editorial).

12. Goel, C., Mohan, S., Dinesha, P. and Rosen, M.A. 2024. CO_2 Adsorption by KOH-Activated Hydrochar Derived from Banana Peel Waste. *Chemical Papers* 78:3845-3856.

13. Patel, V., Judal, K.B., Sharma, K., Rosen, M.A., Kumar, A., Mumtaz, M.A., Elgamal, M.H., Farouk, M.I. and Malik, I. 2024. Effect of Channel Depth Ratio and Absorber Plate

Configuration on Performance of a Solar Air Heater. *Case Studies in Thermal Engineering* 61:104789.

14. Rosen, M.A. 2024. Advances in Sustainable Development Research and The Seven Year Itch. *European Journal of Sustainable Development Research* 8(4):em0266 (editorial).

15. Hasanzadeh, A., Chitsaz, A., Khalilian, M., Rosen, M.A. and Mehr, A.S. 2024. Experimental Evaluation of Electrochemically Mediated Amine Regeneration Integrated with Amine Thermal Swing for CO_2 Capture at Optimized Desorption Temperatures. *Journal of CO_2 Utilization* 87:102922.

16. Murugan, C., Subbian, S., Kaliyaperumal, S., Kumar Sadasivuni, K., Siddiqui, M.I.H., Muthusamy, S., Rosen, M.A., Prakash, C. and Chan, C.K. 2024. An event triggered control scheme for enhanced production of Escherichia coli and Biomass Concentration during Fed-Batch Cultivation. *Heliyon* 10(12):e32210.

17. Mehta, B., Subhedar, D., Panchal, H., Said, Z., Sharma, K., Siddiqui, M.I.H., Natrayan L. and Rosen, M.A. 2024. Twisted Tape Inserts in Parabolic Trough Solar Collectors: Assessment of Energy, Exergy, and Environmental Impacts. *Applied Thermal Engineering* 250:123566.

18. Bahrami, H.R. and Rosen, M.A. 2024. Exergoeconomic Evaluation and Multi-Objective Optimization of a Novel Geothermal-Driven Zero-Emission System for Cooling, Electricity, and Hydrogen Production: Capable of Working with Low-Temperature Resources. *Geothermal Energy* 12:12.

19. Mohan, S., Dinesha, P. and Rosen, M.A. 2024. CH_4/Air Combustion in a Microscale Recirculating Heat Exchanger: Sizing Design Using the Heat Transfer Approach. *Heat Transfer* 53(4):1839-1855.

20. Esmaeilion, F., Soltani, M., Nia, F.F., Hatefi, M., Dusseault, M.B. and Rosen, M.A. 2024. Performance Evaluation of a Novel Fuel Cell and Wind-Powered Multigeneration System. *Energy Reports* 11:4657-4675.

21. Sabbaghi, M.A., Soltani, M. and Rosen, M.A. 2024. A Comprehensive 6E Analysis of a Novel Multigeneration System Powered by Solar-Biomass Energies. *Energy* 297:131209.

22. Jabbary, A., Pourmahmoud, N., Asghar Abdollahi, M.A. and Rosen, M.A. 2024. Artificial Intelligence-Assisted Optimization and Multiphase Analysis of Polygon PEM Fuel Cells. *International Journal of Green Energy* 21(7):1550–1566.

23. Chakraborty, O., Roy, S., Debnath, B.K., Negi, S., Rosen, M.A. Safari, S., El Haj Assad, M., Gupta, R. and Das, B. 2024. Energy, Exergy, Environment and Techno-Economic Analysis of Parabolic Trough Collector: A Comprehensive Review. *Energy & Environment* 35(2):1118-1181.

24. Abbasi, P., Alavy, M., Belansky, P. and Rosen, M.A. 2024. Assessment of Environmental Impacts of Thermal Caisson Geothermal Systems. *Resources* 13(3):45 (Special Issue Exploration and Management of Geothermal Resources).

25. Alavy, M., Shirazi, P., and Rosen, M.A. 2024. Effectiveness of Phase Change Materials and Their Properties on the Performance of Geothermal and Foundation-Based Energy Systems: A Review. *Applied Thermal Engineering* 246:122903.

26. Califano, M., Califano, F., Sorrentino, M., Rosen, M.A. and Pianese, C. 2024. Hydrogen-Based Microgrid: Development of Medium Level Controls in a Multilevel Algorithm Framework. *Int. J. Hydrogen Energy* 52(Part A):1173-1189.

27. Kakati, D., Patil, A.R., Ambhore, N., Sharma, K., Rosen, M.A., Dobrotă, D., Chandrakant, S., Panchal, H., Siddiqui, M.I.H. and Banerjee, R. 2024. Investigating the Influence of Varying Split Injection Profiles on Stability of Diesel Engine Operated Under Partially Premixed Mode with Methanol. *Alexandria Engineering Journal* 88:216-229.

28. Sharafi laleh, S., Alavi, S.H.F., Soltani, S., Mahmoudi, S.M.S., and Rosen, M.A. 2024. A novel supercritical carbon dioxide combined cycle fueled by biomass: thermodynamic assessment. *Renewable Energy* 222:119874.

29. Jalili, M., Beyrami, J., Ziyaei, M., Chitsaz, A., and Rosen, M.A. 2024. Innovative Synthetic Natural Gas Production from Biomass and Renewable Hydrogen: Evaluation and Optimization with Sustainability Perspective. *Process Safety and Environmental Protection* 182:139-153.

30. Esmaeilion, F., Soltani, M., Nathwani, J., Al-Haq, A., Dusseault, M.B. and Rosen, M.A. 2024. Exergoeconomic Assessment of a High-Efficiency Compressed Air Energy Storage System. *Renewable and Sustainable Energy Reviews* 191:114143.

31. Patil, A.R., Kakati, D., Singh, B., Rosen, M.A., Patil, R., Javanjal, V., Sonawane, C., Panchal, H., Kumar, A., Siddiqui, M.I.H. and Sadasivuni, K.K. 2024. Experimental Investigation of Multi-Additive Fuel Blend and its Optimisation for CI Engine Performance and Emissions by the Hybrid Taguchi-TOPSIS Technique. *Case Studies in Thermal Engineering* 53:103703.

32. Shirazi, P., Behzadi, A., Ahmadi, P., Rosen, M.A., and Sadrizadeh, S. 2024. Comparison of Control Strategies for Efficient Thermal Energy Storage to Decarbonize Residential Buildings in Cold Climates: A Focus on Solar and Biomass Sources. *Renewable Energy* 220:119681.

33. Salehi, H., Basir, H., Mohammadi Bidhendi, H., Farhani, F. and Rosen, M.A. 2023. Experimental and Simulation Study of an Automobile Cooling System: Performance Improvement Using Passive Flow Control. *International Communications in Heat and Mass Transfer* 149:107168.

34. Kiehbadroudinezhad, M., Hosseinzadeh-Bandbafha, H., Rosen, M.A., Kumar Gupta, V., Peng, W., Tabatabaei, M. and Aghbashlo, M. 2023. The Role of Energy Security and Resilience in the Sustainability of Green Microgrids: Paving the Way to Sustainable and Clean Production. *Sustainable Energy Technologies and Assessments* 60:103485.

35. Panahi, A.H., Gharehghani, A., Ghandehariun, S. and Rosen, M.A. 2023. Techno-economic Analysis and Optimization of Green Hydrogen Production and Liquefaction with Metal Hydride Storage. *Journal of Cleaner Production* 423:138783.

36. Javaherian, A., Ghasemi, S., Seyed Mahmoudi, S.M., Rosen, M.A. and Sadeghi, M. 2023. Two-Objective Optimization of a Cogeneration System Based on a Gas Turbine Integrated with Solar-Assisted Rankine and Absorption Refrigeration Cycles. *Sustainability* 15(21):15624.

37. Barboza, A.V.B., Dinesha, P. and Rosen, M.A. 2023. Effect of Green Fuel and Green Lubricant with Metallic Nanoparticles on Emissions of HC, CO, NOx, and Smoke for a Compression Ignition Engine. *Environmental Science and Pollution Research* 30(39):91344-91354.

38. Basir, H. and Rosen, M.A. 2023. Comparison of Simulation and Experimental Test Results of the Turbocharger Temperature for Two Gasoline Direct Injection Engines. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering* 237(4):1476-1486.

39. Sharafi laleh, S., Zeinali, M., Mahmoudi, S.M.S., Soltani, S. and Rosen, M.A. 2023. Biomass Co-fired Combined Cycle with Hydrogen Production via Proton Exchange Membrane Electrolysis and Waste Heat Recovery: Thermodynamic Assessment. *International Journal of Hydrogen Energy* 48(87):33795-33809.

40. Ghiami Sardroud, R., Javaherian, A., Seyed Mahmoudi, S.M., Akbari Kordlar, M. and Rosen, M.A. 2023. Proposal and Comprehensive Analysis of a Novel Combined Plant with Gas Turbine and Organic Flash Cycles: An Application of Multi-Objective Optimization. *Sustainability* 15(19):14152.

41. Kilkis, S., Krajacic, G., Duic, N., Rosen, M.A. and Al-Nimr, M.A. 2023. Sustainable Development of Energy, Water and Environment Systems in the Critical Decade for Climate Action. *Energy Conversion and Management* 296:117644 (editorial).

42. Alavi, S.H.F., Javaherian, A., Mahmoudi, S.M.S., Soltani, S. and Rosen, M.A. 2023. Coupling a Gas Turbine Bottoming Cycle Using CO_2 as the Working Fluid with a Gas Cycle: Exergy Analysis Considering Combustion Chamber Steam Injection. *Clean Technologies* 5(3):1115-1139.

43. Ghasemzadeh, N., Sharafi Laleh, S., Soltani, S., Yari, M. and Rosen, M.A. 2023. Using Green Energy Sources in Trigeneration Systems to Reduce Environmental Pollutants: Thermodynamic and Environmental Evaluation. *Sustainability* 15(17):13222.

44. Chen, X., Zhou, C., Tian, Z., Mao, H., Luo, Y., Sun, D., Fan, J., Jiang, L., Deng, J. and Rosen, M.A. 2023. Different Photovoltaic Power Potential Variations in East and West China. *Applied Energy* 351:121846.

45. Sharafi laleh, S., Gharamaleki, F.P., Alavi, S.F., Soltani, S., Mahmoudi, S.M.S. and Rosen, M.A. 2023. A Novel Sustainable Biomass-Fueled Cogeneration Cycle Integrated with Carbon Dioxide Capture Utilizing LNG Regasification and Green Hydrogen Production via PEM Electrolysis: Thermodynamic Assessment. *Journal of Cleaner Production* 421:138529.

46. Ahmadi, M.H., Jashnani, H., Chau, K.-W., Kumar, R. and Rosen, M.A. 2023. Carbon Dioxide Emissions Prediction of Five Middle Eastern Countries Using Artificial Neural

Networks. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects* 45(3):9513-9525.

47. Sadeghi, S., Ghandehariun, S. and Rosen, M.A. 2023. Waste Heat Recovery Potential in the Thermochemical Copper–Chlorine Cycle for Hydrogen Production: Development of an Efficient and Cost-Effective Heat Exchanger Network. *Energy* 282:128357.

48. Ehyaei, M.A., Tofighi, A., Rosen, M.A., Afshari, H., Gheisari, S. and Safari, S. 2024. Development a Policy for Production of Bitcoins with Renewable Energy Sources. *Future Energy* 3(2):16-23.

49. Farsi, A. and Rosen, M.A. 2023. Thermal Management of Polymer Electrolyte Membrane Fuel Cells: Comparative Assessment of Cooling Systems. *e-Prime: Advances in Electrical Engineering, Electronics and Energy* 4:100174.

50. Alavy, M., Shirazi, P., and Rosen, M.A. 2023. Long-Term Energy Performance of Thermal Caisson Geothermal Systems. *Energy & Buildings* 292:113152.

51. Cheng, N., Zhou, C., Luo, Y., Shen, J., Tian, Z., Sun, D., Fan, J., Zhang, L., Deng, J. and Rosen, M.A. 2023. Thermal Behavior and Performance of Shallow-Deep-Mixed Borehole Heat Exchanger Array for Sustainable Building Cooling and Heating. *Energy and Buildings* 291:113108.

52. Hasanzadeh, R., Mojaver, P., Azdast, T., Khalilarya, S., Chitsaz, A. and Rosen, M.A. 2023. Decision Analysis for Plastic Waste Gasification Considering Energy, Exergy, and Environmental Criteria Using TOPSIS and Grey Relational Analysis. *Process Safety and Environmental Protection* 174:414-423.

53. Moharamian, A., Adibi, T., Ghahremani, M.A., Soltani, S., Rosen, M.A. and Mahmoudi, S.M.S. 2023. Thermodynamic and Exergoeconomic Analyses of a Novel Solar-Based Externally Fired Biomass Combined Cycle with Hydrogen Production. *International Journal of Ambient Energy* 44(1):668-685.

54. Ehyaei, M.A., Kasaeian, M., Abanades, S., Razmjoo, A., Afshari, H., Rosen, M.A. and Das, B. 2023. Natural Gas-Fueled Multigeneration for Reducing Environmental Effects of Brine and Increasing Product Diversity: Thermodynamic and Economic Analyses. *Energy Science & Engineering* 11(3):1025-1043.

55. Esmaeilion, F., Soltani, M., Dusseault, M.B. and Rosen, M.A. 2023. Performance Investigation of a Novel Polygeneration System Based on Liquid Air Energy Storage. *Energy Conversion and Management* 277:116615.

56. Anvari, S., Szlęk, A., Arteconi, A., Desideri, U. and Rosen, M.A. 2023. Comparative Study of Steam Injection Modes for a Proposed Biomass-Driven Cogeneration Cycle: Performance Improvement and CO_2 Emission Reduction. *Applied Energy* 329:120255.

57. Farsi, A. and Rosen, M.A. 2023. Performance Analysis of a Hybrid Aircraft Propulsion System using Solid Oxide Fuel Cell, Lithium Ion Battery and Gas Turbine. *Applied Energy* 329:120280.

58. Kamari, M.L., Maleki, A., Daneshpour, R., Rosen, M.A., Pourfayaz, F. and Nazari, M.A. 2023. Exergy, Energy and Environmental Evaluation of a Biomass-Assisted Integrated Plant for Multigeneration Fed by Various Biomass Sources. *Energy* 263(Part B):125649.

59. Farsi, A. and Rosen, M.A. 2022. PEM Fuel Cell-Assisted Lithium Ion Battery Electric Vehicle Integrated with an Air-Based Thermal Management System. *International Journal of Hydrogen Energy* 47(84):35810-35824.

60. Hasanzadeh, R., Mojaver, P., Chitsaz, A., Mojaver, M., Jalili, M. and Rosen, M.A. 2022. Biomass and Low-Density Polyethylene Waste Composites Gasification: Orthogonal Array Design of Taguchi Technique for Analysis and Optimization. *International Journal of Hydrogen Energy* 47(67):28819-28832.

61. Afshari, H., Ehyaei, M.A., Esmaeilion, F., Shamoushaki, M., Farhadnia, M. and Rosen, M.A. 2022. Assessment of a Novel Geothermal Powered Polygeneration System with Zero Liquid Discharge. *Energy Science & Engineering* 10(10):3819-3838.

62. D'Adamo, I., Ioppolo, G., Shen, Y. and Rosen, M.A. 2022. Sustainability Survey: Promoting Solutions to Real-World Problems. *Sustainability* 14(19):12244 (editorial).

63. Kilkis, S., Krajacic, G., Duic, N., Rosen, M.A. and Al-Nimr, M.A. 2022. Effective Mitigation of Climate Change with Sustainable Development of Energy, Water and Environment Systems. *Energy Conversion and Management* 269:116146 (editorial).

64. Del-Aguila-Arcentales, S., Alvarez-Risco, A., Carvache-Franco, M., Rosen, M.A. and Yáñez, J.A. 2022. Bibliometric Analysis of Current Status of Circular Economy during 2012–2021: Case of Foods. *Processes* 10(9):1810.

65. Sadeghi, M., Mahmoudi, S.M.S. and Rosen, M.A. 2022. Thermoeconomic Analysis of Two Solid Oxide Fuel Cell Based Cogeneration Plants Integrated with Simple or Modified Supercritical CO_2 Brayton Cycles: A Comparative Study. *Energy* 259:125038.

66. Alvarez-Risco, A., Del-Aguila-Arcentales, S., Rosen, M.A. and Yáñez, J.A. 2022. Social Cognitive Theory to Assess the Intention to Participate in the Facebook Metaverse by Citizens in Peru During the COVID-19 Pandemic. *Journal of Open Innovation: Technology, Market, and Complexity* 8(3):142.

67. Ahmadi, M.M., Keyhani, A., Rosen, M.A., Lam, S.S., Pan, J., Tabatabaei, M. and Aghbashlo, M. 2022. Towards Sustainable Net-Zero Districts Using the Extended Exergy Accounting Concept. *Renewable Energy* 197:747-764.

68. Mahmoudi, S.M.S., Ghiami Sardroud, R., Sadeghi, M. and Rosen, M.A. 2022. Integration of Supercritical CO_2 Recompression Brayton Cycle with Organic Rankine/Flash and Kalina Cycles: Thermoeconomic Comparison. *Sustainability* 14(14):8769.

69. Beyrami, J., Jalili, M., Ziyaei, M., Chitsaz, A., and Rosen, M.A. 2022. A Novel System for Electricity and Synthetic Natural Gas Production from Captured CO_2: Techno-economic Evaluation and Multi-objective Optimization. *Journal of CO_2 Utilization* 63:102116.

70. Li, S., Djilali, N., Rosen, M.A., Crawford, C., and Sui, P.-C. 2022. Transition of Heavy-Duty Trucks from Diesel to Hydrogen Fuel Cells: Opportunities, Challenges and Recommendations. *International Journal of Energy Research* 46(9):11718-11729.

71. Ahmadi, P., Fakhari, I., and Rosen, M.A. 2022. A Comprehensive Approach for Tri-Objective Optimization of a Novel Advanced Energy System with Gas Turbine Prime Mover, Ejector Cooling System and Multi-Effect Desalination. *Energy* 254(Part C):124352.

72. Mahmoudi, S.M.S., Akbari A.D., and Rosen, M.A. 2022. A Novel Combination of Absorption Heat Transformer and Refrigeration for Cogenerating Cooling and Distilled Water: Thermoeconomic Optimization. *Renewable Energy* 194:978-996.

73. Basir, H., Hosseini, S.A., Nasrollahnezhad, S., Jahangiri, A. and Rosen, M.A. 2022. Investigation of Engine's Thermal Management Based on the Characteristics of a Map-Controlled Thermostat. *International Communications in Heat and Mass Transfer* 135:106156.

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