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Rank: Associate Professor - Mechanical Engineering

Personal Information

Nationality:	Canada
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Professional Information

Education:	Qualification: Doctorate Major: Mechanical engineering College/University: University of British Columbia Year: 2013 Qualification: Masters Major: Mechatronics engineering College/University: American University of Sharjah Year: 2006 Qualification: Masters Major: Mechanical engineering College/University: Baghdad University Year: 1997 Qualification: Bachelor Major: Mechanical engineering College/University: Baghdad University Year: 1992/1993
Specialization:	Thermo-fluids Mechatronics Experimental Fluid Mechanics Pulp and Paper Applications

Current Academic Position:	Associate Professor, Mechanical Engineering Department
Current Professional Positions:	NA
Previous Administrative Position Held:	NA
Previous Academic Positions Held:	Post-Doctoral Fellow 11/2013 – 09/2016 Pulp and Paper Centre, University of British Columbia, Canada Research Assistant 09/2007 – 10/2013 Pulp and Paper Centre, University of British Columbia, Canada Teaching Assistant 09/2008 – 05/2012 Department of Mechanical Engineering and Mining Engineering Department, University of British Columbia, Canada Laboratory Instructor 08/2000 – 08/2007 Mechanical Engineering Department, American University of Sharjah, UNITED ARAB EMIRATES External Lecturer 09/1997 – 02/1998 School of Engineering, University of Baghdad, Iraq
Fellowships And Honors:	American Society of Heating, Refrigerating & Air conditioning (ASHRAE) Technical Association of the Pulp and Paper Industry (TAPPI) American Society for Mechanical Engineering (ASME) Iraqi Engineering Society (IES)
Teaching Experience:	Assistant Professor, Australian University Kuwait, August 2017- Lecture, Australian University, Kuwait Jan 2017- August 2017 Teaching Assistant 09/2008 – 05/2012 Department of Mechanical Engineering and Mining Engineering Department, University of British Columbia, Canada Laboratory Instructor 08/2000 – 08/2007 Mechanical Engineering Department, American University of Sharjah, UNITED ARAB EMIRATES External Lecturer 09/1997 – 02/1998 School of Engineering, University of Baghdad, Iraq
Industrial And Technical Experience:	Project Engineer 04/ 1998 – 07/2000 Thorn Lighting Ltd., Middle East Office, Dubai, UNITED ARAB EMIRATES
Research Interest:	Particle Image Velocimetry Experimental Fluid Mechanics Mechatronic Applications Renewable Energy Applications
Research Grants:	Kuwait Foundation for Advancements of Sciences (KFAS) Fund, Development of Novel Treatment for Osteoarthritis with Extended Pharmaceutical Effects and

	Improved Load-Bearing Capacity and Joint Mobility, KWD 4k, in collaboration with the University of British Columbia (UBC) 2025 - 2027 Kuwait Foundation for Advancements of Sciences (KFAS) Fund, Mechanics of Bubbles in a Viscoplastic Fluid: A Study of Gas Kick/Migration from Oil Wells, KWD 6.5K, in collaboration with the University of British Columbia (UBC) 2021 - 2023 Kuwait Foundation for Advancements of Sciences (KFAS) Fund, Development of High-Performance Green Cellulose-Based Nano Lubricant, KWD 19K, in collaboration with the University of British Columbia (UBC) 2022 - 2024 KFAS Fund, Reutilizing Disposable Paper/Plastic Composites to Water Repellent Paper Board and Foam Paper for Packaging, KWD 8.8K, in Collaboration with UBC 2020 - 2021 NSERC Research Funding Canada 2007-2015 Research Assistantship, University of British Columbia Canada 2007-2013 Ministry of Agriculture Research Funding Canada 2015-2017
Research and Publications including Journal and Books:	N. Ghareeb, A. Alanazi, A. Sedaghat, M. H. Farhat, A. Mehdizadeh, H. Salem, et al., "Integrating experimental and theoretical approaches for enhanced machine learning modeling of solar radiation," Engineering Science and Technology, an International Journal, vol. 70, p. 102156, 2025. A. Sedaghat, R. Kalbasi, R. Narayanan, A. Mehdizadeh, S. M. Soleimani, M. A. Malayer, M. I. Al-Khiami, H. Salem, W. K. Hussam, M. Sabati, M. Rasul, and M. M. K. Khan, "Integrating solar PV systems for energy efficiency in portable cabins: A case study in Kuwait," Solar Energy, vol. 277, p. 112715, 2024. A. Sedaghat, S. M. Soleimani, M. I. Al-Khiami, M. Sabati, W. K. Hussam, H. J. Salem, M. Rasul, R. Narayanan, M. M. K. Khan, M. A. Malayer, and A. Mehdizadeh, "Case studies on energy performance of walling materials in various regions," International Journal of Environmental Science and Technology, pp. 1-28, 2024. M. Al Sarheed, A. Sedaghat, M. A. Malayer, H. Salem, S. A. A. Oloomi, W. K. Hussam, and A. A. Al Anazi, "Experimental and computational study on thermal performance of wood-plastic composites in building envelope," Special Topics & Reviews in Porous Media - An International Journal, vol. 15, no. 1, pp. 1-24, 2024. Sedaghat, A.; Mahdizadeh, A.; Narayanan, R.; Salem, H.; Hussam, W.K.; Al-Khiami, M.I.; Malayer, M.A.; Soleimani, S.M.; Sabati, M.; Rasul, M.; et al. Implementing Cool Roof and Bio-PCM in Portable Cabins to Create Low-Energy Buildings Suitable for Different Climates. Sustainability 2023, 15, 14700. https://doi.org/10.3390/su152014700.

Sedaghat, Ahmad, **Hayder Salem**, Wisam K. Hussam, Arash Mahdizadeh, Mohamad Iyad Al-Khiami, Mahdi Ashtian Malayer, Sayed M. Soleimani et al. "Exploring energy-efficient building solutions in hot regions: A study on bio-phase change materials and cool roof coatings." Journal of Building Engineering 76 (2023): 107258.

Salem, H., Mohammedredha, A., Alawadhi, A., High Power Output Augmented Vertical Axis Wind Turbine. Fluids February 2023, 8(70).

Hayder Salem, Khalil Khanafer, Mohammad AlShammari, Ahmad Sedaghat, Salah Mahdi, Cooling Degree Days for Quick Energy Consumption Estimation in the GCC Countries, Sustainability, October 2022

Adel Younis, Zuomin Dong, Mohamed ElBadawy, Abeer AlAnazi, **Hayder Salem**, Abdullah AlAwadhi, Design and Development of Bladeless Vibration-BasedPiezoelectric Energy–Harvesting Wind Turbine, Applied Sciences, August 2022

Wisam K. Hussama, **Hayder J. Salem**, Adel M. Redha Ali M. Khlefat, Fadi Al Khatib, Performance evaluation of a hybrid solar chimney-photovoltaic system for power generation in Kuwait, Renewable Energy, September 6, 2021

Behzad Zakani, **Hayder Salem**, Sohrab Entezami, Ahmad Sedaghat, Dana Grecov, Effect of particle concentration on lubrication performance of cellulose nano-crystalline (CNC) water-based lubricants: mixed lubrication regime, Submitted to Cellulose journal, July 2021

Michael Bilek, **Hayder Salem**, Reza Korehei, James Olson, Investigation into the Energy Requirements and Fibre Quality of Recycled Paper-Plastic Laminate Coffee Cups, submitted to Journal of Waste Management, June 2021

Ahmad Sedaghat, Mohammad Sabati, Fadi Alkhatib, Seyed Amir Abbas Oloomi, Farhad Sabri, **Hayder Salem**, Waqar Jan Zafar, Mahdi Ashtian Malayer, Climate change and thermo-solar patterns of office buildings with/without window films in extreme hot-arid climate of Kuwait, Solar Energy (217), 2021

Behzad Zakani, Sohrab Entezami, Dana Grecov, **Hayder Salem**, Ahmad Sedaghat, Effect of ultrasonic treatment on improving lubrication performance of cellulose nano-crystalline (CNC) suspensions as green nano-lubricants, submitted to Journal of Carbohydrate Polymers, May 2021

A.Sedagaht, S. Oloomi, M. Malayer, F. Alkhatib, F. Sabri, M. Sabati, **H. Salem**, et al. Effects of Window Films in Thermo-Solar Properties of Office Buildings in Hot-Arid Climates, Frontiers in Energy Research, May 2021

Ahmad Sedaghat, Fadi Alkhatib, Seyed Amir Abbas Oloomi, Farhad Sabri, **Hayder Salem**, Mohammad Sabati, Waqar Jan Zafar, Mahdi Ashtian Malayer, Amirhossein Negahi, "Experimental Study on Performance of Solar Window Films in Office Buildings in Kuwait", Journal of Nanoparticle Research, Volume 4 (22), 2020

	Wisam K. Hussam, Khalil Khanafer, Hayder J. Salem, Gregory J. Sheard, "Natural convection heat transfer utilizing nanofluid in a cavity with a periodic side-wall temperature in the presence of a magnetic field", International Communications in Heat and Mass Transfer, Volume 104, May 2019 Salem, H., M., Olson, J. and Gooding, R. "Effect of foil rotor design on screen performance." Nordic Pulp and Paper Research Journal, September 2015 Ruhul A. Khan, Hayder J. Salem, Reza Korehei, D. Mark Martinez and James A. Olson Fractionation and Characterization of Bleached Pulp Fibres: Application on Sodium Alginate Films, Canadian Journal of Chemical Engineering science, November 2015 Ruhul A. Khan, Reza Korehei, Hayder J. Salem, Nici Darychuk, D. Mark Martinez and James A. Olson, Fabrication and characterization of microfibrillated cellulose reinforced sodium alginate-based biodegradable films for packaging applications, Journal of Science & Technology for Forest Products and Processes, November 2014 Salem, H., Martinez, M., Olson, J. and Gooding, R. "Experimental Study of a Time-Varying Turbulent Cross-Flow near a Two-Dimensional Rough Wall with Narrow Apertures." Canadian Journal of Chemical Engineering science, November 2014 Salem, H., Martinez, M., Olson, J. and Gooding, R. "Experimental Study of the Factors Affecting the Maximum Capacity of Pressure Screen." Nordic Pulp and Paper Research Journal, June 2014
Paper Presentations at Professional Conferences:	M. Salem, A. Sedaghat, M. H. Farhat, H. Salem, and M. Nazififard, "Analysing passenger and climate impacts on bus station cooling energy consumption in Kuwait," in Proceedings of the 9th International Conference of Recent Trends in Environmental Science and Engineering (RTESE 2024), Imperial College London Conference Center, London, United Kingdom, 2025. [Online]. Available: https://doi.org/10.11159/rtese25.126. Hayder Salem, " Automated Instrument for Testing Natural Fibers Physical Properties", 16th International Conference on Mechatronics and Manufacturing (ICMM 2025), Yokohama, Japan. Hayder Salem and Ahmad Sedaghat, Comparative Analysis of Thermal performance of Painted, Finned, and Plain Roofs in Arid and Temperate Climates: Insights from Kuwait City and Vancouver. 9th International Conference on Sustainable and Renewable Energy Engineering (ICSREE 2024), Volume 545, 2024, Marseille, France. Ahmad Sedaghat, Arash Mahdizadeh, Hayder Salem, Wisam K. Hussam, Mohamad Iyad Al-Khiami, Aiyad Gannan, Development of Novel Portable Cabins for Low Energy Buildings Research in Kuwait, the first GCC Engineering Symposium (GCCENG23), 29-31 October 2023, Kuwait University, Kuwait.

Ahmad Sedaghat, **Hayder Salem**, Wisam K. Hussam, Arash Mahdizadeh, Mohamad Iyad Al-Khiami, Mahdi Ashtian Malayer, Experimental Study on Cool Roof Methods for Two Identical Portable Cabins in the State of Kuwait, Proc. International Conference on Mechanical, Automotive and Mechatronics Engineering (ICMAME 2023), 29-30 April 2023, Dubai, UAE.

Hayder Salem, Ahmad Sedaghat, Mahdi Ashtian Malayer, Passive Cooling with Finned Roof Tiles. The 7th International Conference on Green Energy and Applications (ICGEA 2023), 10-12 March 2023, Singapore. (Best Presented paper in the conference)

Ahmad Sedaghat, **Hayder Salem**, Wisam K. Hussam, Arash Mahdizadeh, Mohamad Iyad Al-Khiami, Sayed Mohamad Soleimani, Mohammad Sabati, Mohammad Rasul, Ramadas Narayanan, Masud M. K. Khan, Mahdi Ashtian Malayer, Development of a Novel Low-Energy Building: Effects of Climates and PCM Materials, 11th International Conference on Indoor Air Quality, Ventilation & Energy Conservation in Buildings (IAQVEC2023), 20–23 May 2023, Tokyo, Japan.

Shancheng Li, Dana Grecov, **Hayder Salem**, Ahmad Sedaghat, Numerical Study of Lubrication with Nematic Liquid Crystals, Proceeding of the Canadian Society for Mechanical Engineering International Congress 2021 (CSME Congress 2021), June 27-30, 2021, Charlottetown, PE, Canada

M. Sabati, A. Sedaghat, **H. Salem**, A. Alkhatib, Temporal and Spectral Analysis on the Performance of Solar Windows Film in Office Buildings in a Hot-Dry Climate, Fifteenth International Conf. on Ecological Vehicles and Renewable Energies (EVER), 2020

Sayed Amir Abbas, Ahmad Sedaghat, Mahdi Ashtian Malayer, Farhad Sabri, Fadi Alkhathi, **Hayder Salem**, et al., Investigating the Potential of Solar Window Films in Energy Saving and CO₂ Footprint Reduction in Educational Building in Kuwait, The Fourth International Conference on Efficient Building Design, ASHRAE 2020

Hayder Salem, “A New Approach in Understanding Pressure Screen Capacity”, 4th Baltic Conference Series, Stockholm, Sweden, May 2019

Ahmad Sedaghat, **Hayder Salem**, Seyed Amir Abbas Oloomi, et al., “Design and Manufacturing a Miniature Reynolds Apparatus for Testing Nanofluids”, Gulf Conference on Sustainable Built Environment, Kuwait, March 2019

Ruhul A. Khan, Reza Korehei, **Hayder J. Salem**, D. Mark Martinez and James A. Olson. Fabrication and Characterization of Microfibrillated Cellulose Reinforced Sodium Alginate Based Biodegradable Films for Packaging Applications. PACWEST Conference, Jasper, Canada, 2014

	H. Salem, R.W. Gooding, D.M. Martinez, and J. A. Olson. "Some fundamental aspects of pulp screen capacity." Advances in Pulp and Paper Research, Cambridge 2013 Saad A. Ahmed and Hayder Salem. "Suppression of Self-Excited Flow Instability in a Radial Diffuser Using Rough Surfaces." 2006 ASME Joint U.S. – European Fluids Engineering Summer Meeting, Miami, FL, July 2006 Hayder J., Salem, and A. Al Joudi. "Simulation of a Solar Heated Residence in Baghdad." Third International Conference of Solar Energy, Sharjah, UNITED ARAB EMIRATES, March 1998
College Service including committee Membership:	NA
National Service:	NA
College Committees:	Member of Labs and workshop committee Curriculum committee Quality management committee Research and faculty development committee Promotion and appointment development committee