FACULTY CURRICULUM VITAE

Name: Dr. Zainab Al Hajaj
Rank: Assistant Professor - Mechanical Engineering

Personal Information

Nationality:	Canadian
AU Joining Date:	18 Aug 2019
E-Mail Address:	z.hajaj@au.edu.kw

Professional Information

Education:	**Qualification:** Doctorate **Major:** Mechanical Engineering **University:** Toronto Metropolitan University **Year:** 2019 **Qualification:** Master **Major:** Nanomaterial **University:** Bangor University **Year:** 2012 **Qualification:** Bachelor **Major:** Mechanical Engineering **University:** University of Derby **Year:** 2010
Specialization:	Composite material Natural fibers Biomaterial and biomechanics Fatigue and damage mechanics Material Characterization Heat transfer
Current Academic Position:	Assistant Professor - Mechanical Engineering (Aug 2019 – Present) - AU Adjunct Professor (July 2020 – Present) – Toronto Metropolitan University

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Current Professional Positions:	**Membership and chartered/registered status of professional bodies** EIT of Professional Engineers of Ontario (PEO), Canada Kuwait Society of Engineers, Kuwait Institute of Mechanical Engineers (IMechE), UK
Previous Administrative Position Held:	Conference keynote speaker – International Scientific Committee – May, 2019 – Dec,2019 Abstract reviewer – Sep,2018 - Present Student data entry – May, 2016 – Dec, 2018 Project Coordinator
Previous Academic Positions Held:	**Lecturer- George Brown College**, Toronto, Canada. Jan., 2019 – May, 2019 **Graduate Researcher- Ryerson University,** Toronto, Canada. Jan, 2016 – Aug, 2019 **Researcher**- *Li Ka Shing Knowledge Institute of* St.Micheal University, Toronto, Canada. Jan, 2016 – Sep, 2018 **Graduate Assistant- Ryerson University,** Toronto, Canada. May, 2016 – May, 2019 **Instructor- American University of the Middle East,** Kuwait. Sep,2014 – Jan, 2016
Fellowships And Honors:	Kuwait Society of Engineers (KSE) member Mechanical and Industrial Engineering (MIE) Graduate Excellence Award 2018/19 Graduate Student Stipend, 2018/19 FEA Graduate Student Symposium Conference Award, 2018 Ryerson Graduate Fellowship, 2017/18 OGS (Ontario Graduate Scholarship), 2017/18 Ryerson Graduate Fellowship, 2016/17 Graduate Student Stipend, 2016/17
Teaching Experience:	**Lecturer- George Brown College**, Toronto, Canada. Jan, 2019 – May, 2019 **Graduate Assistant- Ryerson University,** Toronto, Canada. May, 2016 – May, 2019 **Instructor- American University of the Middle East,** Kuwait, Sep,2014 – Jan, 2016
Industrial And Technical Experience:	**Mechanical Engineer –** FPS international Co.
Research Interest:	Composite material Natural fibers Concrete reinforced fiber Biomaterial and biomechanics Fatigue and damage mechanics Material testing Heat transfer

Research Grants:	AU research grant 2024 KFAS (Kuwait Foundation for the Advancement of Science), 2021 AU research grant 2021 Graduate Student Stipend, 2018/19 Ryerson Graduate Fellowship, 2017/18 OGS (Ontario Graduate Scholarship), 2017/18 Ryerson Graduate Fellowship, 2016/17 Graduate Student Stipend, 2016/17
Research and Publications including Journal and Books:	Al Hajaj, Z., & Saghir, M. Z. (2023). Numerical study on the influence of embedded PCM tubes on the energy storage properties of the geothermal energy pile. International Journal of Thermofluids, 20, 100416. Al-Hajaj, Z., Avval, P. T., & Bougherara, H. (2023). Computational prediction of the long-term behavior of the femoral density after THR using the Silent Hip stem. Computer Methods in Biomechanics and Biomedical Engineering, 26(4), 373-382 Yassin, M. H., Al Hjaj, Z., & Lakys, R. E. (2022) Experimental Study on the Thermal Characterization of PTF Concrete, Proceedings of the 7th International Conference on Civil Structural and Transportation Engineering (ICCSTE'22), Niagara Falls, Canad Elham Abohamzeh, M. Sheikholeslami, Z. Al hajaj, and M. Ziad Saghir, 2021, Carbon Nanotubes for solar cells and Photovoltaics, Springer. Al-Hajaj, Z., Zdero, R., and Bougherara, H., 2021, Tensile fatigue response of a novel carbon/flax/epoxy hybrid composite under strain-controlled and stress-controlled amplitude, Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications, 14644207211028968 Alhajaj, z., saghir, m. Z., & rahman, m. M., 2020, Convective heat transfer of mono and hybrid nanofluid in porous micro-channel: experimental and numerical approach. Alhajaj, Z., Bayomy, A. M., Saghir, M. Z., & Rahman, M. M. 2020, Flow of nanofluid and hybrid fluid in porous channels: Experimental and numerical approach. International Journal of Thermofluids, 1, 100016. Alhajaj, Z., Bayomy, A. M., & Saghir, M. Z., 2020, A comparative study on best configuration for heat enhancement using nanofluid. International Journal of Thermofluids, 100041. Z. Al-Hajaj, A. Sarwar, R. Zdero, and H. Bougherara, 2019 " Damage Assessment of a Novel Carbon/Flax/Epoxy Hybrid Composite using Stiffness Degradation, Permanent Strain, and Crack Density under Tensile and Compressive Cyclic Loading, " Journal of Composite Materials, pp. 1-14.

	Z. Al-Hajaj, B. Sy, R. Zdero and H. Bougherara, 2018 " Impact Properties of a New Hybrid Composite Material made from Woven Carbon Fibres plus Flax Fibres in an Epoxy Matrix," Composite Structures, vol. 208, pp. 346-356, Z. Al-Hajaj, R. Zdero and H. Bougherara, 2018, "Mechanical, Morphological, and Water Absorption Properties of a New Hybrid Composite Material made from 4 Harness Satin Woven Carbon Fibres and Flax Fibres in an Epoxy Matrix," Composites Part A: Applied Science and Manufacturing, vol. 115, pp. 46-56.
Paper Presentations at Professional Conferences:	Al Hajaj, Z. (2024). The influence of incorporating natural fiber on the mechanical performance of natural fiber reinforced concrete. Journal of Engineering Research. Al Hajaj, Z., & Saghir, M. Z., Aerodynamic characterization of add-on covers on the rear wheel of the motorcycle, 1353rd international conference on mechanical and aerospace, Florence, Aug.2022 Yassin, M., Al Hajaj, Z., Lakys, R, Experimental Study on the Thermal Characterization of PTF Concrete, Proceedings of the 7th International Conference on Civil Structural and Transportation Engineering (ICCSTE'22), Niagara Falls, June,2022 Ghalayini, I., Al Hajaj, Z., Jaber T., and Saghir M., The Effects of Thermophoresis and Brownian Motion on the Flow of a Nanofluid in Rectangular Channels using Buongiorno's Model, 13th International Conference on Thermal Engineering: Theory and Application, Baku, May.2022 Z. Al-Hajaj, M. Saghir, M. Rahman, Convective Heat Transfer of Mono and Hybrid Nanofluid in Porous Micro-Channel: Experimental and Numerical Approach, *The Second Pacific Rim Thermal Engineering Conference,* Dec.2019 Z. Al-Hajaj, H. Bougherara and Z. Fawaz, Mechanical Characterization of A Hybrid Composite Sandwich Structure Made of Woven Carbon/Flax Fibers, *International Journal of Mechanical and Production Engineering (IJMPE)*, vol. 6(2), pp. 40-45, 2018
College Service including committee Membership:	Research & Faculty Development Committee Labs & Workshop Committee
National Service:	Volunteer at Kuwait Society of Engineer Member and Volunteer at Woman Engineers Committee at KSE
College Committees:	Project based learning committee member Research and faculty development Lab and workshop