



Shaghayegh Bagheri, PhD

Assistant Professor, Department of Mechanical Engineering

Education

PhD, Mechanical Engineering, Ryerson University

Key Interests

Orthopedic Biomechanics | Biomaterials | Biomechanics of Human Motion | Injury Prevention | Advanced Structure Materials | Advanced Manufacturing

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SELECT PUBLICATIONS

- › Z. S. Bagheri *et al.*, Effects of multi-functional surface-texturing on the ice friction and abrasion characteristics of hybrid composite materials for footwear. *Wear*, 418-419, 253-264 (2019).
- › D. Melancon *et al.*, Mechanical characterization of structurally porous biomaterials built via additive manufacturing: experiments, predictive models, and design maps for load-bearing bone replacement implants. *Acta Biomaterials*, 63:350-368 (2017).
- › Z. S. Bagheri *et al.*, Compensation strategy to reduce geometry and mechanics mismatches in porous biomaterials built with selective laser melting. *Journal of Mechanical Behavior of Biomedical Materials*, 70: 17-27, (2017).

Research Focus

My research objective is to apply my knowledge and experience in biomechanics, material science and advance manufacturing techniques towards providing solutions for applications in the health care sector for rehabilitation, injury prevention and treatment. I began my research career by studying advanced manufacturing technology of multi-functional materials capable of sensing and responding to different stimuli. More recently, my research has focused on the role of disruptive innovations, such as 3D printing of polymer-based composites in designing and developing new generations of biomaterials.

Current Projects

- Additive manufacturing of bio-composites based on high-strength polymers for orthopedic and dental implants
- Biomechanical evaluation of fracture fixation methods