MECHANICAL ENGINEERING SEMINAR

Monday, August, 3, 2026 at 14:30, **D. Dan and Betty Kahn Building, Auditorium 1**

Online: https://technion.zoom.us/j/94448854898

Lifetime prediction of advanced structural materials for mechanical engineering applications

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Hosted by: Prof. Sefi Givli

Abstract. Driven by a passion for human-centric leadership, knowledge sharing, and collaborative innovation, Dr. Alyona Glushko is a mechanical engineer specializing in structural integrity, failure analysis, and digital twin technologies for high-temperature engineering systems. With nearly a decade of research experience in mechanical engineering, her work focuses on the long-term degradation mechanisms, structural reliability, and life assessment of critical components operating under extreme conditions. By integrating advanced physical metallurgy, comprehensive mechanical evaluation, and microstructural characterization, her research has resulted in several patented industrial solutions that improve the durability and cracking resistance of heavy-duty power generation equipment. Parallel to her research activities, Dr. Glushko has demonstrated strong academic leadership, mentoring undergraduate and graduate engineering students through advanced technical curricula. As the Founder and CEO of the Predictive Diagnostics for Advanced Materials project, she leads the development of multi-scale digital twin models that integrate experimental materials data with finite element methods (FEM) to simulate infrastructure degradation and accurately predict the remaining useful life of engineering materials and components.

Biosketch. Dr. Alyona Glushko is a scientist and academic with nearly a decade of experience in mechanical engineering research, structural integrity, and predictive diagnostics. She holds a Ph.D. in Science of Materials from the Ye. O. Paton Electric Welding Institute of the National Academy of Sciences of Ukraine. Dr. Glushko recently completed a tenure as a Visiting Scientist within the Department of Nuclear Science and Engineering at the Massachusetts Institute of Technology (MIT), where she leads the PDaM project to integrate physical materials data into numerical diagnostics. Throughout her career, including her time as an Associate Professor at National Technical University "KhPI", she has demonstrated extensive leadership in university education, academic mentorship, and the deep-tech startup ecosystem. Her scientific and innovations track record includes multiple patented industrial solutions, alongside prestigious national recognitions such as the Prize of the President of Ukraine for Young Scientists.

Seminars Coordinator: Prof. Sefi Givli