土木工程學系 國立成功大學
Department of Civil Engineering, National Cheng Kung University

Technological Innovation: The Path from Lab to Market for the Construction Bio-Adhesive

Dr. Elham H. Fini, Arizona State University
Dr. Mahour Parast, North Carolina A&T State University

Tuesday, December 25, 2018 Time: 1:30PM-3:00PM
位置: 土木系卓群大樓1樓懷恩講堂

This seminar features technical developments and commercial path for the bio-adhesive technology invented by Dr. Fini and Dr. Parast, which was further commercialized through a spin-off company (Bio-Adhesive Alliance, Inc.). The research component discusses interaction mechanisms between bio-adhesive and petroleum-based asphalt using atomistic modeling along with an experimental approach. The technical research is expected to introduce a paradigm for asphalt characterization and modeling, enabling an integration of biological science, chemistry and mechanics while revolutionizing waste management for better environmental protection. This joint talk will elaborate on the process of synthesis and characterization of a bio-adhesive through the support from an NSF CAREER award followed by customer discovery and market analysis via NSF I-Corps and NSF STTR projects discussing several identified markets for bio-adhesive, including asphalt and pavement application. Accordingly, the presentation discusses the opportunities and challenges associated with product development and technology commercialization of bio-resin and bio-based construction materials. The speakers will also address technological innovation and product development for bio-based materials.

Dr. Elham (Ellie) Fini is the Senior Sustainability Scientist, AAAS-Lemelson Invention Ambassador, J.W. Fulbright Scholar at Arizona State University. She received her Ph.D. from the University of Illinois at Urbana- Champaign in 2008. Her achievements were recognized via multiple awards including an NSF CAREER Award, a 2017 BEYA STEM Innovation Award, and nomination for the 2017 BioNight Entrepreneurial Excellence Award.

Dr. Mahour Parast is an Assistant Professor of Technology Management at North Carolina A&T State University. His current research is focused on supply chain risk and resilience management, and process and product innovation. He received his Ph.D. in Industrial & Management Systems Engineering from the University of Nebraska-Lincoln. In 2012, Dr. Parast joined the bio-adhesive research team to evaluate commercialization of bio-adhesive technology as part of the NSF Innovation Corps (I-Corps) project. He serves as the President and Co-founder of the Bio- Adhesive Alliance (BAA), Inc.