

## **2nd Virtual Asphalt Roofing Recycling Forum “The Path to Innovation”** **Asphalt Roofing Manufacturers Association, October 24, 2023**

This one hour opening session will include brief presentations by three Arizona State University faculties and will conclude with Q&A session. Presentations will include topics on valorization, waste-to-energy, bio-based / bio-inspired roofing, state-of-the-art asphalt mixtures fracture testing with recycled roofing material, and the use of innovative material in asphalt roofing shingles to withstand extreme heat.

**Moderator’s Remarks:** *Dr. Kamil Kaloush, ASU (5 min)*

### **Decarbonize Buildings with Recycled Roofing Shingles**

*Dr. Ellie Fini, ASU (15 min)*

### **Fracture Tests for Asphalt Mixtures Containing Recycled Roofing**

*Dr. Hasan Ozer, ASU (15 min)*

### **Innovative Material in Roofing Shingles to Resist Excessive Heat**

*Dr. Kamil Kaloush (10 min)*

**Q&A (15 min)**

---



**Elham (Ellie) Fini**

Associate Professor

#### **Research Interests**

Sustainable Construction, Bio-based and Bio-inspired Materials, Adhesives and Sealants for Use in Construction, Multi-scale Characterization and Modeling, Surface, and Interface Characterization

Dr. Ellie Fini is an Associate Professor at Arizona State University, an Invention Ambassador at the American Association for the Advancement of Science, a Fulbright Scholar of Aalborg University of Denmark, a Senior Sustainability Scientist at the Global Institute of Sustainability and Innovation and the Director of the Innovation Network for Materials, Methods, and Management. Her research focuses on the production, characterization, and atomistic modelling of sustainable novel materials for use in construction. In addition to more than 200 scholarly publications and numerous invited talks, her research has been featured by BBC Women in STEM, Science Nation, Wired Magazine, and CNBC. She is editor of the ASCE Journal of Materials and Journal of Resources, Conservation & Recycling. She has served as the president of ASCE’s North Carolina Northern Branch and a program director of the National Science Foundation. Her achievements have been recognized via multiple awards including an NSF CAREER award, ASEE Gerald Seeley award, BEYA Emerald STEM Innovation award, NC BioTech Research Excellence award and WTS Innovative Transportation Solution award to name a few.



**Hasan Ozer**

Associate Professor and Director of the National Center of Excellence on Smart Innovations

**Research Interests**

Airfield and highway pavements, asphalt materials characterization, pavement design and structural analysis, computational fracture mechanics, life-cycle assessment and sustainability, preservation, and rehabilitation of pavements.

Dr. Hasan Ozer is an associate professor in the School of Sustainable Engineering and the Built Environment. His research focuses on pavement materials characterization, pavement design and analysis, and development of rehabilitation and preservation programs. Dr. Ozer develops computational mechanics methods for structural performance modeling of pavements and uses life-cycle assessment tools for advancing sustainable transportation infrastructure. Dr. Ozer is the founding director of Southwest Pavement Technology Consortium and Director of National Center of Excellence on Smart Innovation. He is among the officer of Academy of Pavement Science and Engineering in his second term as treasurer. He has served for American Society of Engineers (ASCE) Transportation and Development Institute's Highway Pavement Committee as a chair and currently serving as chair of Transportation Research Board's AKT30(1) Sealants and Fillers Subcommittee.



**Kamil Kaloush**

Civil Engineering Undergraduate Program Chair, Professor, Senior Global Futures Scientist

**Research Interests**

Pavements, materials, design and evaluation, management, urban heat island

Dr. Kamil Kaloush is a FORTA Professor of Pavement Engineering in the School of Sustainable Engineering and the Built Environment, affiliate faculty in the School of Sustainability and co-founder of the National Center of Excellence on SMART Innovations at Arizona State University (ASU). He is a registered Professional Engineer and has over 35 years of industrial and academic experience. He received his Ph.D. degree from ASU, MS and BS degrees from The Ohio State University. His areas of expertise include modified pavement materials, thermal properties, advanced laboratory testing, field performance evaluation, and environmental impacts. His services cover a variety of industrial organizations, state governments, and organizations such as Transportation Research Board, International Road Federation; Arizona Council for Transportation Innovation, and National Council of Examiners for Engineering and Surveying (NCEES). Recent patents/disclosures include: Nanostructured Aluminosilicate Wax Carrier for Asphalt, A Novel Method to Measure Thermal Conductivity of Bituminous Material, and Aerogel Modified Bituminous Materials.