Recycling Waste Materials for Pavement Construction

Tuesday, February 27
11:00 am - 12:00 pm Pacific Time
MORE HALL Rm 110

Road construction and maintenance represent resource-intensive activities that significantly deplete natural resources. In the pursuit of sustainability, the integration of recycled waste materials has gained prominence as a viable solution. This presentation offers a succinct overview of the core elements involved in recycling waste materials, specifically tire rubber, glass, plastic, and recycled asphalt, for promoting sustainable pavement construction.

Utilizing recycled waste materials in pavement construction not only addresses pressing environmental concerns but also fosters cost-efficiency and enhances overall performance. Waste tire rubber, following appropriate processing and incorporation into asphalt binder, yields rubberized asphalt, which bolsters pavement durability, skid resistance, and noise reduction. Glass, when carefully crushed to specific gradations, can serve as a partial substitute for traditional aggregates, thereby diminishing the demand for natural resources while imparting desirable reflective and skid-resistant properties. The inclusion of plastic waste, primarily in the form of modified plastics, plays a pivotal role in augmenting pavement materials’ durability and moisture resistance. Moreover, recycled asphalt presents a sustainable alternative to conventional aggregates, thereby reducing the need for virgin materials and conserving valuable natural resources.

This presentation underscores the burgeoning significance of recycling waste materials as a sustainable approach to road construction and maintenance. It further emphasizes ongoing research into the carbon footprint of various construction scenarios in Michigan, aiming to evaluate the viability of such eco-friendly road solutions. The collaboration between research and practice is instrumental in advancing the implementation of these environmentally friendly pavement innovations.