

Bi-Monthly Progress Report:

Project Number and Title: 2.3: Measuring Adhesion Between Binders and Aggregates Using Particle Probe Scanning Force Microscopy at Low Temperatures

Research Area: Thrust 3 Use New Materials and Systems to Build Longer-lasting Bridges and Accelerate Construction

PI: *Ting Tan, University of Vermont*

Reporting Period: 04.01.2019 to 05.31.2019

Date: *June 28, 2019*

Overview:

We discussed the research design of the particle probes, including particle sizes, types and microcantilever types. We also explored different types of epoxies to attach the particle probes. Following the discussion, we fabricated several different types of particle probes. We also prepared several binder substrates with different modifiers. We are in the process of finalizing the combinations of particle probes and substrates for further investigation.

Planned Activities:

Design the measurement matrix, measure the stiffness of the cantilevers and collect the adhesive forces between different types of binders and substrates.