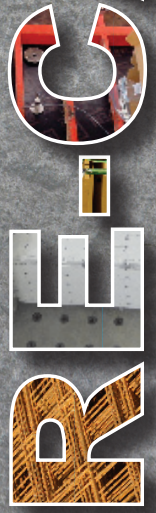
Research on Concrete Applications for Sustainable Transportation

RE-CAST PRESENTS:

GRADUATE STUDENT WORKSHOP

Fundamentals of Rheology and Applications on Cement-Based Materials

July 14 - 17, 2014



MISSOURI S&T

http://recast.mst.edu

PROGRAM

Monday, July 14th

9:00 – 11:00: Optional guided tour of Missouri S&T's materials and structural labs

12:30 – 13:45: Welcome and introduction

14:00 – 17:30: Fundamentals of rheology
General rheology
Rheological models for liquids
General rheometry

Tuesday, July 15th

8:30 – 10:15: Fundamentals of rheology
Rheology of suspensions

10:30 – 12:00: Rheology of cement-based materials
Rheological behavior
Influence of constituents

13:30 – 14:30: Rheology of cement-based materials
Rheological modeling
Thixotropy and workability loss

14:45 – 17:30: Lab 1 – Demonstration and application of rheometry and rheology

PROGRAM (cont)

Wednesday, July 16th

8:30 – 10:30: Rheology of cement-based materials
Measuring rheology of cement-based materials

10:45 – 12:00: Applications of rheology
Links between rheology and workability

13:30 – 17:30: Applications of rheology
Links between rheology and workability
Rheology and stability
Rheology and casting
Rheology as a mix design tool

Thursday, July 17th

8:30 – 10:45: Lab 2 – Rheology of grout, water and concrete
11.15 – 12.00: Applications of rheology
Practical applications

13:30 – 17:00: Summary
Discussion of lab results
Conclusions
Closure

INSTRUCTORS

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http://recast.mst.edu/researchteam

FACILITIES

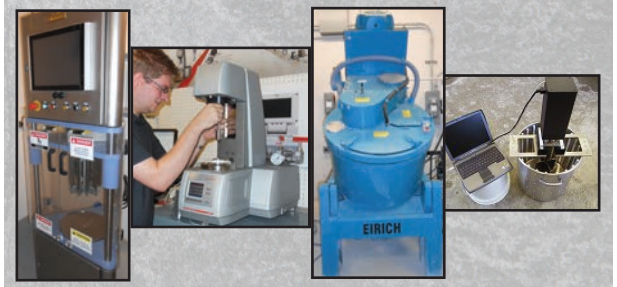
The two laboratory sessions will take place in the Center for Infrastructure Engineering Studies Advanced Construction Materials Laboratory. This laboratory features six different rheometers that can be used for cement-based materials.

The **Anton Paar MCR 302** is an advanced rheometer used in polymer industry, capable of measuring flow curves and visco-elasticity with different measurement configurations and temperatures.

The **ConTec Viscometers 5 and 6** are coaxial cylinders rheometers especially developed for concrete and micro-mortars,respectively.

The **ICAR rheometer** is a portable concrete rheometer that is flexible for use on-site.

The **Eirich intensive mixer** will be used to produce concrete during the laboratory sessions.



LOCATION

Missouri University of Science and Technology, Rolla, MO

MISSOURI S&T

Lectures:
Butler-Carlton Civil Engineering Hall
1401 N. Pine Street

Labs:
Engineering Research Laboratory
500 W. 16th Street

Closest airport:
St. Louis, MO (STL)

Directions:
http://www.mst.edu/map/

Optional post-workshop activity:
Float trip on the Meramec River
Friday, July 18th (weather permitting)

For More Information:

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