



Missouri S&T and Purdue University are pleased to invite you to the upcoming workshop on:

Rheology and 3D Printing of Concrete

August 5 – 7, 2024 | Missouri S&T, Rolla, MO

This workshop is co-sponsored by the DOT University Transportation Center (DuRe-Transp), based at the University of Texas at Arlington, and the NSF AccelNet 3D Concrete Printing Network (3D Concrete) of Arizona State University

The objective of the workshop is to bring together students and researchers interested in topics of rheology and 3D printing of concrete. Key topics include common rheological models; testing methods for the rheology of cementitious systems; evaluation techniques for 3D printed materials; and use of bio-inspired/architected materials in 3D printing. The workshop will feature panel discussions and presentation of case studies related to 3D printing.

Presenters include Kamal Khayat from Missouri S&T; and Purdue's Jan Olek, Dr. Pablo Zavattieri, Dr. Jeffrey Youngblood, Yu Wang, and Szymon Skibicki from West Pomeranian University of Technology, Szczecin, Poland. Representatives of RCAM Technologies and COBOD will highlight case studies related to 3D printing of concrete. The workshop will provide all attendees with the opportunity to actively engage in discussions, share their expertise, and form valuable, long-lasting connections.



Kamal Khayat



Jan Olek



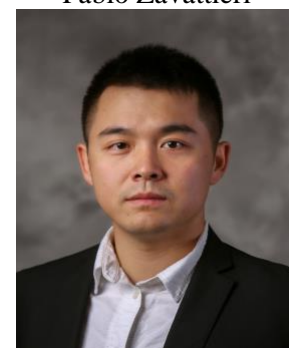
Pablo Zavattieri



Jeffrey Youngblood



Szymon Skibicki



Yu Wang

Register at

<https://forms.office.com/r/iM3dTgaidB>

Or scan the
QR Code





WORKSHOP

on

Rheology and 3D Printing of Concrete

August 5 – 7, 2024 | Missouri S&T, Rolla, MO



Day 0, Sunday, August 4, Floating Trip (Optional)

10:00 am – 5:00 pm

Day 1, Monday, August 5, Rheology and HPC with Adapted Rheology

7:30 am – 8:15 am Registration & Coffee

8:15 am – 8:30 am Opening Remarks

8:30 am – 9:15 am General Rheology and Models

9:15 am – 10:30 am
1. Influence of Constituent on Rheology of Cement-Based Materials
2. Links Between Rheology and Workability

10:30 am – 10:45 am
Coffee Break

10:45 am – 12:15 pm
1. Rheology of SCC and Underwater Concrete.
2. Thixotropy and Factors Affecting Thixotropy of Cement-Based Materials

12:15 pm – 1:45 pm
Lunch / Poster Session / Case Study

1:45 pm – 2:30 pm Rheology and Early-Age Hydration of 3DPC

2:30 pm – 3:15 pm Printing Parameters of 3DCP, Architecture/Printing Path

3:15 pm – 3:30 pm Move to Clayco ACML

3:30 pm – 5:30 pm Lab Visits and Demonstrations of Rheology and Test Methods to Evaluate 3DCP

6:00 pm – Dinner



Day 2, Tuesday, August 6, 3DP Concrete Technology

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|----------------------------|---|
| 8:00 am – 9:00 am | Test Methods for Evaluating 3DCP Performance: In-line, Off-line |
| 9:00 am – 10:15 am | 3DCP Ink Mixture Design, Binder Systems, Chemical Admixtures, Nano Materials, and Fibers for 3DPC |
| 10:15 am – 11:30 am | 1. Hardened Properties of 3DPC, Comparison Between Cut vs. Mold Samples, Anisotropy 2. Emerging Properties, Motivation for Architected/Bioinspired Material Design |
| 11:30 am – 1:00 pm | Lunch / Poster Session II / Industrial Presentation |
| 1:00 pm – 1:30 pm | Introduction to the Breakout sessions |
| 1:30 pm-3:30 pm | Breakout sessions |
| 3:30 pm – 3:45 pm | Coffee Break |
| 3:45 pm – 5:45 pm | 3D Printed Concrete: From Conception to Prototype (case study) |
| 6:15 pm – | Dinner |

Day 3, Wednesday, August 7, 3DP Concrete Technology

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|----------------------------|---|
| 8:00 am – 8:15 pm | Introduction to groups and their topics |
| 8:15 am – 10:30 am | Group leaders to present their respective topics/discussions/main ideas |
| 10:30 am – 10:45 am | Coffee Break |
| 10:45 am – 11:30 am | Presentation of DuRe-Transp / AccelNet |
| 11:30 am – 12:00 pm | Closing Remarks – Final words |

Workshop venue: Innovation Lab, Missouri S&T, Rolla, MO

[Hotel Information](#)



[Travel Information](#)



[Floating Trip Information](#)



For more information, please contact:

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Dr. Jan Olek: Olek@purdue.edu

Register at

<https://forms.office.com/r/iM3dTgajdB>

Or scan the QR Code

