

Jeffryd Rose

Associate

Jeffryd Rose, Ph.D. is an Associate II at CTLGroup as a part of the Materials Consulting group. Dr. Rose received his doctorate in Civil Engineering with a focus on Materials and Structural Engineering from Texas A&M University in 2018 with his primary focus areas being transport properties of cement based materials on the materials side and structural bridge engineering on the structures side. He has done extensive research on the possibility of restoring damaged concrete to its original state in-situ by autogenous healing caused by water flowing through the concrete. The damage conditions tackled in the project include structural damage caused by micro and macro cracks in the concrete and caused by the effect of de-calcification of the concrete. He has also extensively worked with using ECC as a connecting material in integrally attached bridge approach slabs to bridge abutments to reduce cracking and bumps.

Representative Bridge Experience

Bridge Evaluation

- Structural engineer for design and maintenance for bridges in Indiana
- Texas DOT - Structural engineer for design and maintenance of bridges across Texas.
- Designed highway bridges for six projects and bridge retrofits for three projects
- Worked on load rating on system and off system bridges.
- Tested Texas DOT in-house software for designing Bridge Geometry and Bridge Superstructure.

Representative Project Experience

Research, compile, analyze and examine engineering data to assist in preparing project deliverables.

Transshield Cover

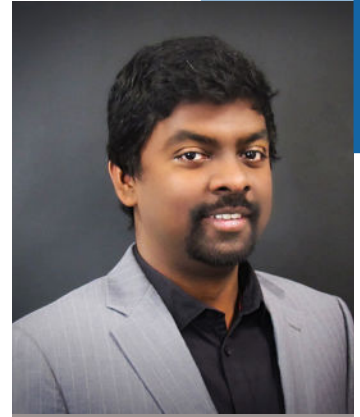
- Performed tests that were required to certify curing blanket products and provided feedback to the client on improving the products.

Aquasmart Sand

- Performed a comprehensive study to analyze the effect of chemical admixtures in tandem with pore water solution on absorption and desorption of Superabsorbent Polymer coated sand.

Mechanics of accelerated autogenous healing of concrete water distribution systems damaged by cracking and decalcification.

- Worked on NSF funded research project on autogenous healing of concrete water distribution systems.
- Project explores the possibility of restoring damaged concrete water distribution systems to its original state in-situ using autogenous healing caused by chemically altered potable water flowing through the concrete.



Academic Credentials

Ph.D. in Civil Engineering (Materials)
Texas A&M University, 2018

M.S. in Civil Engineering (Structural)
University of Wisconsin-Madison,
2012

B.E. in Civil Engineering
Anna University, 2011

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Super hydrophobic Engineered Cementitious Composites for Highway Bridge

Applications: Technology Transfer and Implementation.

- Worked on a CFIRE funded research project on use of ECC to design ductile concrete bridge approach slabs.
- Project explored the use of Engineered Cementitious Composites to design a link slab, possessing very high ductility, in a bridge to integrally connect the approach slab with the abutment of the bridge.

Measurement of Saltstone Grout Properties for Savannah River National Lab.

- The project was for measuring the water permeability of saltstone storage vaults made from low activity saltstream mixed with ordinary portland cement

Publications

Rose, J., Grasley, Z., “Comparison of Permeability of Cementitious Materials Obtained via Poromechanical and Conventional Experiments.” *Journal of Materials in Civil Engineering*, vol. 29, no. 9, 2017

Rose, J., Grasley, Z. , Tang, M., Edwards, M., Wang, F., “Accelerated Autogenous Healing of Concrete Pipe Sections with Crack and Decalcification Damage.” *Journal of Materials in Civil Engineering*, vol. 30, no. 12, 2018.

Rose, J., Ismael, V., Konstantin, S., Muzenski, S. et al. “Hydrophobic Engineered Cementitious Composites for Highway Applications.” *Cement and Concrete Composites*, vol. 57, 2015, pp. 68–74.