

American Concrete Institute  
Wisconsin Chapter

Additive Manufacturing and Bio-Design of  
Cement-based Structures



**Dinner Meeting Notice  
for ACI-Wisconsin**

**Delafield Brewhaus  
Delafield, WI**

**Wednesday**

**March 18, 2020**

Cocktails: 5:30pm

Dinner: 6:00pm

Program: 7:00pm

ACI-WI member \$25

Non-members \$30

Students \$5

Credit Cards Accepted  
Online and at the door.  
Cash and Checks payable  
to ACI-WI also accepted.

[Register Today!](#)

Please send reservations to:

Alex Raver

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414.394.5704

Registration Deadline:

**3/16/2020 @ Noon**

There is an increasing interest in the use of additive manufacturing (AM) technology in concrete construction industry. However, the brittle behavior of cement-based materials, the presence of interfaces resulting from the AM processes, and the obstacles in reinforcing the ultimate structures are among some of the major challenges in scaling up the final structures. This presentation focuses on (i) an overview of the past, present, and future of additive manufacturing technologies in construction industry and (ii) and the opportunities provided by implementing the design of cement-based materials inspired by nature, that can be combined with additive manufacturing technology to improve the mechanical behavior of final structures.

Reza Moini has been a Ph.D. researcher in Lyles School of Civil Engineering at Purdue University for the past three and a half years. Upon graduation with a bachelor's degree in civil engineering, Reza served three years as a civil engineer in Iran. Following his career, Reza moved to Milwaukee, WI to work with researchers in UWM to conduct research and design sustainable low-carbon-footprint concrete for Wisconsin DOT during his master's degree. He supplemented his work by working for Collins Engineers Inc. to design, load-rate, and construction highway bridges and pavements in various projects including Zoo Interchange. After two years at Collins Engineers, Reza returned to the academia at Purdue University to continue graduate studies in the area of design and additive manufacturing of concrete materials and structures. Now at Purdue University, Reza has developed a program in the area of additive manufacturing and bio-inspired architected cement-based materials. He works with a number of experts in this field including Dr. Jan Olek, Pablo Zavattieri, and Jeffrey Youngblood at Purdue University to advance novel design and fabrication methods for next generation construction materials. Reza is the secretary of ACI subcommittee 211-0M and a voting member of ACI 564- 3D-printing with cementitious materials.