

Amir Yaghoob Farnam

Assistant Professor

Civil, Architectural & Environmental Engineering Department

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(a) Education and Training

2012-2015	PhD in Civil/Materials Engineering	Purdue University	W. Lafayette, IN
2005-2008	MSc in Civil Engineering	University of Tehran	Tehran, Iran
2001-2005	BSc in Civil Engineering	K.N.T. Uni. of Technology	Tehran, Iran

(b) Academic and Professional Appointments

- Affiliated Faculty Member, Department of Materials Science and Engineering, Drexel University, Philadelphia, PA	2018-Present
- Assistant Professor, Department of Civil, Architectural and Environmental Engineering Department, Drexel University, Philadelphia, PA	2016-Present
- Visiting Investigator, Louisiana Transportation Research Center (LTRC), Louisiana Department of Transportation and Development, Louisiana State University, Baton Rouge, LA	Summer 2018
- Postdoctoral Research Associate, Purdue University, West Lafayette, IN	2015-2016
- Visiting Instructor, Purdue University, IN	Fall 2015
- Research/Teaching Assistant and Mentor, Purdue University, IN	2012-2015
- Research Scholar, University of Sherbrooke, Sherbrooke, CANADA	2010-2012
- Technical/Project Manager, Construction Materials Institute, University of Tehran, IRAN	2008-2010

(c) Honors and Recognitions

2021	Outstanding Early-Career Award from the Drexel College of Engineering
2020	Best Paper Award from the Journal of the American Ceramic Society
2020	Third Place Poster Award in the Fall 2020 ACI Virtual Convention
2018	Drexel University Faculty Summer Research Award
2017	Drexel University Coop Office of the Provost Research Award
2015	Purdue University College of Engineering Outstanding Research Award
2015	Purdue University Civil Engineering Graduate Research Award
2014	Portland Cement Association Education Foundation's J. P. Gleason Fellowship
2014	Purdue University William L. Dolch Scholarship
2012	Quebec MELS Merit Research Fellowship (FQRNT)
2011	University of Sherbrooke Institutional Scholarship
2008	University of Tehran Best Master's Thesis Award
2004	American Concrete Institute Bowling Ball Student Competition 2nd Place Award
2004	Honors from the Iranian Minister of Science, Research and Technology
2004	Honors from the President of K.N. Toosi University of Technology
2003	American Concrete Institute Concrete Cube Student Competition 1st Place Award

(d) Demonstrated Areas of Expert Knowledge

- Development of lightweight aggregate from solid waste coal combustion ash and glass
- Advanced manufacturing of construction materials
- Advanced, bioinspired and multifunctional infrastructure materials
- Durability of concrete exposed to deicing and chloride-based salts.

(e) Research Background

• **Selected Recent Peer-Reviewed Publications**

- M. Balapour, R. Rao, E.J. Garboczi, S. Spatari, Y.G. Hsuan, and **Y. Farnam** (2020), Thermochemical principles of the production of lightweight aggregates from waste coal bottom ash, Journal of the American Ceramic Society, doi: 10.1111/jace.17458.
- A.W. Mutua, M. Balapour, and **Y. Farnam** (2020), Towards development of nature-inspired thermo-responsive vascular composites: Analysis of polymeric composites, Construction and Building Materials Journal, Elsevier, Volume 259, pp. 1-12.
- M. Balapour, W. Zhao, E.J. Garboczi, N.Y Oo, S. Spatari, G. Hsuan, P. Billen, and **Y. Farnam** (2020), Potential Use of Lightweight Aggregate (LWA) Produced from Bottom Coal Ash for Internal Curing of Concrete Systems, Cement and Concrete Composite, Elsevier, Volume 105, pp. 1-12.
- F. Althoey, and **Y. Farnam** (2020), Performance of Calcium Aluminate Cementitious Materials in the Presence of Sodium Chloride, ASCE Journal of Materials in Civil Engineering, ASCE, Vol. 32, Issue 10, pp. 1-10, doi: 10.1061/(ASCE)MT.1943-5533.0003365.
- F. Althoey and **Y. Farnam** (2019), The effect of using supplementary cementitious materials on damage development due to the formation of a chemical phase change in cementitious materials exposed to sodium chloride, Construction and Building Materials Journal, Elsevier, Volume 210, pp. 685-695, doi: 10.1016/j.conbuildmat.2019.03.230.
- M. Ksara, R. Newkirk, S.K. Langroodi, F. Althoey, C. Sales, C. Schauer, and **Y. Farnam** (2019) Microbial Damage Mitigation Strategy in Cementitious Materials Exposed to Calcium Chloride Deicing Salts, Construction and Building Materials Journal, Elsevier, Volume 195, pp. 1-9.
- L. Nguyen, A.J. Moseson, **Y. Farnam**, and S. Spatari, (2018), Effects of Composition and Transportation Logistics on Environmental, Energy and Cost Metrics for the Production of Alternative Cementitious Binders, Journal of Cleaner Production, Journal of Cleaner Production, Elsevier, Volume 185, 1, pp. 628-645.

Peer-Reviewed Journal Papers:	39
Conference Presentation/Papers:	42
Invited Talks:	12
Book Chapter and Technical Reports:	8
Google Scholar Citations:	1443
Metrics: h-index:	23
i10-index:	33

• **Selected Sponsored Awards:**

- Engineering Bioinspired Multifunctional Microbial Polymeric Fiber (BioFiber) for Concrete Self-Healing, Sponsor: National Science Foundation, Budget: \$555,589, Duration: 12/2020-11/2023, PI: Y. Farnam.
- PFI-TT: Development of Scalable Lightweight Aggregate Manufacturing from Waste Coal Combustion Ash, Sponsor: National Science Foundation, Budget: \$321,000, Duration: 09/2020-08/2022, PI: Y. Farnam.
- Developing Phase Change Materials for Concrete Deicing Applications, Sponsor: Compass Minerals Inc., Budget: \$176,833, Duration: 01/2018-05/2019, PI: Y. Farnam.
- Advanced Manufacturing of Architected Fiber-Reinforced Cementitious Composite, Sponsor: Pennsylvania Department of Community and Economic Development, Budget: \$129,754, Duration: 02/2020-05/2021, PI: Y. Farnam.
- I-Corps: Production of Lightweight Aggregate from Waste Bottom Ash, Sponsor: National Science Foundation, Budget: \$50,000, Duration: 01/2018-05/2019, PI: Y. Farnam.
- EAGER: Spherical Porous Reactive Aggregates from Coal Bottom A, Sponsor: National Science Foundation, Budget: \$185,000, Duration: 09/2016-08/2019, PI: S. Spatari, Co-PI: Y. Farnam.

Total Research Expenditure to Date	\$3.3M
- As PI:	\$1.8M
- As co-PI and senior personnel	\$1.5M

• **Patents**

- Method of Lightweight Aggregates Production from Waste-Coal Combustion Ash, International Application No.: PCT/US20/56976, Filled on 23-OCT-2020 (Pending)