**Kejin Wang**

* Professor

**Main Office**

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**Education**

Ph.D. Civil Engineering, University of California, Berkeley, 1994  
M.S. Civil Engineering, Chinese Academy of Sciences (Beijing, China), 1985  
B.S. Civil Engineering, Hefei University of Technology (Hefei, China), 1982

**Interest Areas**

Kejin Wang's research interests include chemistry and microstructure of concrete, portland cement and supplementary cementitious materials (uses of slag, fly ash, silica fume, etc.), concrete pavements (mix design, test methods, and surface characterization), special concrete (particularly in self-consolidating concrete and pervious concrete), concrete durability (alkali-silica reaction, freeze-thaw and steel corrosion), and concrete distress and repair.

**Her recent research projects include:**   
Sequestering Lead in Paint by Utilizing Deconstructed Masonry Materials as Recycled Aggregate in Concrete (PI, sponsor: Strategic Environmental Research and Development Program (SEROP));   
Improving Variability and Precision of Air Void Analyzer (AVA) Test Results and Developing Rational Specification Limits (Phase 1) (Co-PI, sponsor: Federal Highway Administration (FHWA));   
Self-Compacting Concrete - Applications to Slip Form Paving (PI, sponsors: FHWA, State Department of Transportation (DOT), and Industry- Pooled Fund);   
Develop a Simple and Rapid Test for Monitoring Heat Evolution of Concrete for Lab and Field (PI, sponsor: FHWA);   
Pervious Concrete Mix Design for Pavement Wearing Course Application (Co-PI, sponsors: National Center for Concrete Pavement Technology (CP Tech Center) and RMC Research and Education Foundation);   
Development of Performance Properties of Ternary Mixes (Co-PI, sponsors: FHWA/State DOTs/ Industry);   
Understanding rheology of cement-based materials through integrated experiments and computations at multiple scales (PI, Sponsor: National Science Foundation)

**Brief Biography**

### Experience

2000-Present, PCC Engineer , CTRE  
Conducts research on the material properties of portland cement concrete and concrete durability.

1997-1997, Design/Project Engineer , Desman and Associates, Chicago, IL

1995-2000, Adjunct Professor/Research Associate , Northwestern University

1986-1988, Assistant Professor/Lecturer , Hefei University of Technology, China

1982-1986, Research Engineer , Institute of Structures and Materials, Beijing, China

### Education

PhD, 1994, Structures and Materials, University of California--Berkeley, Berkeley, CA, USA

MS, 1985, Structures and Materials, Chinese Academy of Sciences, Beijing, China

BS, 1982, Civil Engineering, Hefei University of Technology, Hefei, China

**Teaching**  
[CE 382 - Design of Concretes](http://catalog.iastate.edu/showcourse/?code=C%20E-382&edition=2012-13)  
[CE 383 - Design of Portland Cement Concretes](http://catalog.iastate.edu/showcourse/?code=C%20E-383&edition=2012-13)[CE 587 - Advanced Portland Cement Concrete](http://catalog.iastate.edu/showcourse/?code=C%20E-587&edition=2012-13)[s](http://catalog.iastate.edu/showcourse/?code=C%20E-383&edition=2012-13)

**Honors and Awards**   
Journal of ASTM International Award for "2008 Outstanding Editorial Board Member," 2008  
Honorary Professor, School of Civil Engineering, Chongqing Jiaotong University of Technology, China, 2008   
Charles W. Schafer Faculty Award for "Excellence in Teaching, Research and Service in Civil, Construction, and Environmental Engineering," Iowa State University, 2006   
Honorary Professor, School of Civil Engineering, Hefei University of Technology, China, 2006   
Honorary Professor, School of Civil Engineering, Lanzhou Jiaotong University, China, 2003

**Selected Publications**

G. Lu, K. Wang, T. J Rudolphi. "Modeling Rheological Behavior of Highly Flowable Mortar Using Concepts of Particle and Fluid Mechanics." *Cement and Concrete Composites*, Vol. 30, Issue 1, 1-12 (2008)

F. Bektas, K. Wang, and H. Ceylan. "Effect of Portland Cement Fineness on ASTM C1260 Expansion." *Journal of Testing and Evaluation*, Vol. 36, p. 436-442, 2008

F. Bektas,, K. Wang, H. Ceylan. "Use of Ground Clay Brick as a Pozzolanic Material in Concrete." *Journal of ASTM International*, v5, n10, ID: JAI101681 (November 2008)

Z. Ge and K. Wang. "Modified Heat of Hydration and Strength Models for Concrete Containing Fly Ash and Slag." *International Journal of Computers and Concrete*, Vol. 6, No. 1, p 19-40, 2009

Z. Ge, K. Wang, P. J. Sandberg, J. M. Ruiz. "Characterization of Cement- based Materials Using a Simple Isothermal Calorimeter." *Journal of Advanced Concrete Technology*, volume 7, No. 3, October 2009

J.T. Kevern, K. Wang, and V.R. Schaefer. "Test Methods for Characterizing Air Void Systems in Portland Cement Pervious Concrete." *Journal of ASTM International* Vol. 6, No. 9 (ID JAI102451), 2009

G. Lomboy, K. Wang. "Effects of Strength, Permeability, and Air Void Parameters on Freezing-Thawing Resistance of Concrete With and Without Air Entrainment." *Journal of ASTM International*, Vol. 6, No. 10, (ID JAI102454), 2009

G. Lu and K. Wang. "Investigation into Yield Behavior of Fresh Cement Paste: model and experiment." *ACI Materials Journal*, Vol. 107, No. 1, p 1-8, January-February, 2010

T. Voigt, J. Mbele, K. Wang, S. P. Shah. "Using Fly Ash, Clay and Fibers for Simultaneous Improvement of Concrete Green Strength and Consolidatability for Slip-form Pavement."(accepted by *ASCE Mat. J.* September 2009)

Kevern, J. T., Wang, K., and Schaefer, V. R. "The Effect of Coarse Aggregate on the Freeze-Thaw Durability of Pervious Concrete." *ASCE Journal of Materials in Civil Engineering*, 2009. (Accepted, July 09)