KAMAL H. KHAYAT

Vernon & Maralee Jones Endowed Professor of Civil Engineering
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EXPERTISE

Dr. Kamal Henri Khayat, Professor of Civil Engineering. He specializes in the development of high-performance cement-based materials for structural applications and rehabilitation. In particular, his focus has concentrated on self-consolidating concrete (SCC) and high-performance concrete (HPC) behavior, including rheological properties, mechanical properties, durability, and structural performance. Other research interests include the use of chemical admixtures, sustainable hydraulic binders, and recycled materials for concrete.

EDUCATION

University of California, Berkeley	B.S. Civil Engineering	Dec. 1982
University of California, Berkeley	M. Eng. Const. Eng. & Management	Dec. 1984
University of California, Berkeley	M.S. Structural Engineering	Dec. 1985
University of California, Berkeley	Ph.D. Construction Materials	April 1989
University of California, Berkeley	Post-doctoral Fellow, Structural Eng. & Mat.	1989-1990

ACADEMIC AND PROFESSIONAL EXPERIENCE

08/11 – present	Vernon and Maralee Jones Professor of Civil Engineering, Missouri University of Science and Technology, Rolla, MO
08/11 – present	Director, Center for Infrastructure Engr. Studies, Missouri S&T, Rolla, MO
09/13 – present	Director, Tier 1: RE-CAST, Missouri S&T, Rolla, MO
11/13 – present	Adjunct Professor, Civil Engineering, Université de Sherbrooke
08/11 – 06/14	Director, Center for Transportation Infrastructure and Safety, Missouri University of Science and Technology, Rolla, MO
06/08 – 09/13	National Science and Engineering Research Council (NSERC) Chair on High-Performance Flowable Concrete with Adapted Rheology, Université de Sherbrooke
09/04 – 07/11	Director, Integrated Research Laboratory on Materials Valorization and Innovative and Durable Structures, Université de Sherbrooke
2002 – 2011	Director, Center of Excellence on Concrete Infrastructure, U. de Sherbrooke
1999 – 2011	Section Head, Cement and Concrete Research Group, U. de Sherbrooke
2003 – 2009	Adjunct Professor, Department of Civil Engineering, Université Laval, Quebec
2000 – 2011	Guest professor, Civil Engineering, Université d'Artois, Béthune, France
2008 – 2009	Guest professor, Civil Engineering, Université du Cergy-Pontoise, Cergy, France
2007 – 2013	Guest professor, Civil Engineering, Reykjavik University, Iceland
06/99 – 2011	Professor, Civil Engineering, Université de Sherbrooke

08/98 – 12/98 Guest researcher, Monsanto, San Diego, USA
02/98 – 07/98 Guest researcher, Lafarge Central Research Laboratory, Lyon, France
06/94 – 05/99 Associate Professor, Civil Engineering, Université de Sherbrooke
11/90 – 05/94 Assistant Professor, Civil Engineering, Université de Sherbrooke

AWARDS AND DISTINCTIONS

2018 Chi Epsilon Chapter Honor Member, Missouri S&T

2018 American Concrete Institute (ACI) Wason Medal for the Most Meritorious paper published by the institute in 2016. "Field Measurements of SCC Lateral Pressure - Toronto 2014 Experimental Program SCC under Pressure, by Gardner, Keller, Khayat, Lange, and Omran, *Concrete International*, March 2016.

2017 ACI Foundation Jean-Claude Roumain Innovation in Concrete Award "for over 25 years of research, teaching, innovation, and leadership contributing to the advancement of self-consolidating concrete; and the relentless pursuit of knowledge transfer by organizing numerous conferences covering the science, performance, design, and testing standards of self-consolidating concrete" Nov. 2016, presented March 2017.

2017 Marquise Who's Who in the World 2017 (Science & Engineering in America)

2017 Outstanding Reviewer, Cement and Concrete Research Jr.

2016 Elsevier list of 150 most cited people in civil engineering in the world - (http://www.shanghairanking.com/The-Most-Cited-Researchers-Developed-for-ShanghaiRanking-Global-Ranking-of-Academic-Subjects-2016-by-Elsevier.html#)

2016 Best Paper Award, Feys, D., De Schutter, G., Khayat, K.H., and Verhoeven, R., 2016, "Changes in Rheology of Self-Consolidating Concrete Induced by Pumping." *Materials and Structures*, **49** (11) pp. 4657-4677.

2016 Outstanding Reviewer, Construction and Building Materials Jr.

2015 Fellow RILEM (International Union Reunion of laboratories and Experts in Construction Materials, Systems and Structures)

2015 ACI Arthur R. Anderson Medal for "energy and perseverance in developing and sustaining world-class research facilities and for solving highly significant problems on concrete design, materials, and construction".

2014 The G.H. Tattersall Award for Sustaining and Outstanding Contributions in the Area of Sustainability and Durability of Concrete, Reykjavik, Iceland

2012 ACI Quebec and Eastern Ontario Award of Recognition of Outstanding Contributions to Concrete Science and Technology

2010 Honored Member, Continental Who's Who, in recognition of excellence for individuals who have demonstrated outstanding leadership and achievement in their occupation, industry or profession

2009 Concrete Producer Magazine – Four Influences in Concrete Industry

2006 ACI/CANMET Award for Outstanding Contribution in Concrete Technology (Admixtures)

2005 Association Béton Québec, Prix ARCUS Communication category

2004 Leonardo da Vinci Medal under the category "Bâtisseur/Builder" on the occasion of the 50th anniversary of the Faculty of Engineering at the U. de Sherbrooke

2004 Elected Fellow of ACI

2004 Project Leader and Principal Investigator, Canadian Foundation for Innovation infrastructure grant (C$ 16M), the largest grant in the history of the U. de Sherbrooke

2004 Association Béton Québec, ARCUS Trophy, Outstanding contribution to promotion and development of ready-mixed concrete – Communication category

2000 Association Béton Québec, Prix ARCUS Innovation category (with the City of Montréal)

1998 Association Béton Québec, Prix ARCUS Communication category (with Concrete Canada)

1997 Rehabilitation of Webster parking structure, Prix du ministère des Affaires Municipales du Québec (with Concrete Canada)

1994 ASTM Sanford E. Thompson Award, Paper of Outstanding Merit, Cement, Concrete and Aggregates Journal

94-98 Collaborating Investigator, Network of Centres of Excellence on High-Performance Concrete (Concrete Canada)

98-02 Principal Investigator, Concrete Canada, Centre of Excellence on High-performance Concrete

1992 Best Paper, 27th Annual Conference of Association québécoise du transport et des routes

1989 Army Corps of Engineers REMR Appreciation Certificate

1982 ASCE Eugene Sembler Award

KEY SCHOLARLY PRESENTATIONS

2018 keynote speaker, 4th Int. Symposium on Design, Performance and Use of Self-Consolidating Concrete, Changsha, China

2017 keynote speaker, 9th Inter. Conference on Cement and Concrete, ISCC2017, Wuhan, China

2017 Honorary Member, Chi Epsilon, Missouri S&T Chapter

2016 keynote speaker, Ultra High Performance Concrete Materials and Structures, UHPC 2016, Changsha, China

2016 keynote speaker, Inter. Symposium of Ceramics and Composites, ISCCO 2016, Medellin, Columbia

2016 keynote speaker, Materials, Systems and Structures in Civil Engineering, MSSCE 2016, Lyngby, Denmark

2016 Chair of the Organizing Committee and keynote speaker, 8th Inter. RILEM Symposium on Self-Compacting Concrete and 6th North American Conference on the Design and Use of Self-Consolidating Concrete, SCC 2016, Washington, D.C.

2015 keynote speaker, Inter. Congress on Cement Chemistry, ICCC2015, Beijing, China

2015 keynote speaker, Congress of Pathology and Concrete Technology, XI Cinpar 2015, Porto Alegre, Brazil

2014 keynote speaker, Inter. Conference on Eco-Crete, Reykjavik, Iceland

2014 keynote speaker, 3rd Int. Symposium on Design, Performance and Use of Self-Consolidating Concrete, Xiamen City, China

2013 keynote speaker, 8th Inter. Congress on Cement and Concrete, ISCC 2013, Nanjing, China

2013 keynote speaker, 7th RILEM Conference on Self-Compacting Concrete, SCC 2013, Paris, France

2013 keynote speaker, ACI/ACTS Conference on Advances in Concrete Technology, Beirut, Lebanon

2013 keynote speaker, 6th North American Conf. on Design and Use of Self-Consolidating Concrete, SCC 2013, Chicago, USA

2012 keynote speaker, 3rd IBERIAN Congress on Self Compacting Concrete, Dec., Madrid, Spain

2012 keynote speaker, IBRACON 54th Brazilian Congress, the First Latin American Symposium on SCC (I SILAMCAA), Oct., Maceio, Brazil

2010 Chair of the Organizing Committee and keynote speaker, 6th Inter. RILEM Symposium on Self-Compacting Concrete and 4th North American Conference on the Design and Use of Self-Consolidating Concrete, SCC 2010, Montreal, Canada

2009 keynote speaker, 2nd Inter. Symposium on Design, Performance and Use of Self-Consolidating Concrete, Beijing, China

2008 keynote speaker, 3rd North American Conf. on Design and Use of Self-Consolidating Concrete, SCC 2008

2008 keynote speaker, 5th Inter. Symposium on Self-Consolidating Concrete, Ghent, Belgium

2007 keynote speaker, Inter. Symposium on Self-Compacting Concrete, SCC 2007, Chicago, USA

2007 invited speaker, Int. Conference honoring Prof. Jean Péra, Warsaw, Poland

2007 invited speaker, Int. Conference honoring Dr. Terry Holland, Warsaw, Poland

2005 keynote speaker, 1rst Inter. Symposium on Design, Performance and Use of Self-Consolidating Concrete, Changsha, China

2005 keynote speaker, 4th Inter. Symp. on Self- Consolidating Concrete, Chicago, USA

2003 keynote speaker, 3rd Inter. Symp. on Self-Compacting Concrete, Reykjavik, Iceland

2002 keynote speaker, 1rst North American Conf. on Design and Use of SCC

2001 keynote speaker, Inter. Conference honoring Pro1f. Aïtcin of the U. de Sherbrooke

1998 invited speaker, Inter. Conference honoring Prof. Nagataki of the Tokyo Inst. of Technology

1996 invited speaker, Inter. Conference honoring Prof. Gjørv of the Norwegian Inst. of Technology

1995 invited speaker, University of Tokyo and Japan Society of Civil Engineers

1992 invited speaker, Inter. Conf. on Supplementary Cementitious Materials, Ottawa, Canada

TECHNOLOGY TRANSFER

2017 Chair, 5th Missouri University of Science and Technology on Transportation Infrastructure Conference, Rolla, Nov. MO, USA

2016 Chairman, 8th Inter. RILEM Symposium on Self-Compacting Concrete and 6th North American Conference on the Design and Use of Self-Consolidating Concrete, May 15-18, 2016, Washington D.C.

2016 Chair, 4th Missouri University of Science and Technology on Transportation Infrastructure Conference, Rolla, Nov. MO, USA

2015 Member of Organizing Committee and Scientific Committee, XI Cinpar 2015, Congress of Pathology and Concrete Technology, Porto Alegre, Brazil

2015 Chair, 4th Missouri University of Science and Technology on Transportation Infrastructure Conference, Sept., St. Louis, Dec. MO, USA

2014 Chair of International Scientific Committee, 3rd Inter. Symposium on Design, Performance and Use of Self-Consolidating Concrete, Xiamen City, China, June

2014 Chair, 3rd Missouri University of Science and Technology on Transportation Infrastructure Conference, Sept., Rolla, MO, USA

2013 Chair, 2nd Missouri University of Science and Technology on Transportation Infrastructure Conference, Sept., Jefferson City, MO, USA

2013 Chair of International Scientific Committee 7th RILEM Conference on Self-Compacting Concrete, Sept., Paris, France

2013 Chair of Technical Committee SCC 2013, 5th North American Conference on the Design and Use of Self-Consolidating Concrete, Chicago, USA

2012 Chair, First Missouri University of Science and Technology on Transportation Infrastructure Conference, Sept., Rolla, MO, USA

2010 6th Inter. RILEM Symposium on Self-Compacting Concrete and 4th North American Conference on the Design and Use of Self-Consolidating Concrete, Sept. 2010, Montreal, Chairman and co-editor

2009 2nd Inter. Conference on Advances in Concrete Technology in the Middle East – Self-Consolidating Concrete, Dec. 2009, Abu Dhabi, UAE, Chairman and editor

2009 2nd Inter. Symposium on Design, Performance and Use of SCC, China, Chairman of Scientific Committee, co-editor

2008 Seminar on the Rheology of Cement-Based Materials, Oct. 2008, U. de Sherbrooke, 46 participants

2008 Inter. Conference on Advances in Concrete Technology in the Middle East, Nov. 2008, Dubai, UAE, Chairman and editor

2007 Jean Péra Symposium on Specialty Cements and Sustainability Issues, Warsaw, Poland, Chairman and editor

2005 1st Inter. Symposium on Design, Performance and Use of SCC, China, Chairman of Scientific Committee, co-editor

2005 Rheology – the Science Behind Workability of Cement-Based Materials, Euclid Chemicals, Cleveland, Ohio, USA (2 days)

2003 Rheology of Cement-Based Materials and Self-Consolidating Concrete, U. de Sherbrooke, Quebec, Canada (2 days)

2003 Self-Consolidating Concrete – Design and Construction, U. of Guadalajara, Mexico, (7 days)

2000 Intensive course on chemical grouting, U. de Sherbrooke, (2 days)

2001 Co-organizer, co-editor, P.-C. Aïtcin Symposium on Advances in Concrete Technology, Montréal, Quebec, Canada

96-02 Organizer and moderator of several technical sessions at TRB and ACI Conventions; topics included: high-performance concrete, infrastructure repair, pumping, air-void stability, rheology, cement-admixture incompatibility, self-consolidating concrete, formwork pressure, cementitious grouting, fiber-reinforced concrete, grouting, and sustainability

1996 Workshop on Self-Consolidating Concrete, U. de Sherbrooke, (2 days) (first in North America)

1995 Intensive course on cement grouting, U. of British Colombia, Vancouver, B.C., Canada (2 days)

1994 Intensive course on cement grouting, U. de Sherbrooke, Quebec, Canada (2 days)

PROFESSIONAL ACTIVITIES

Chairman, ACI Committees 237 Self-Consolidating Concrete (2009-2015); Secretary (2003-2009 and 2015-present).

Member, ACI 90 Technical Activities Committee.

Member, ACI 81 Editorial Board ACI Materials Journal.

Member, ACI 236 Materials Science of Concrete; 238 Workability of Concrete; 234 Silica Fume; 347 Formwork; 552 Cementitious Grouting; 07 Committee on Award for Papers, SA02 Wason Medal for Materials Research (2014-2015).

Member, RILEM. Development Advisory Committee, DAC – Convener for North America (2014-17); RILEM TC 228 Mechanical Properties of SCC (Chairman 2008-2013); RILEM TC-FPC on Form Pressure of SCC; and TC-MRP Measuring Rheological Properties of Cement-based Materials; and Transportation Research Board (TRB AFN40: Concrete Materials and Placement Techniques) (formerly on TC145 Workability of Special Concrete; TC174 Self-Compacting Concrete; and TC205 Durability of SCC).

2017 – present Member of Editorial Board: ACI Materials Journal

2016 – present Member of Editorial Board: Cement and Concrete Composites Journal

2012 – present Member of Editorial Board: Journal of Sustainable Cement-based Materials

2016 – present Member of Editorial Board: Revista Facultad de Ingenieria (REDIN) Journal

2008 – 2011 Associate Editor, Canadian Journal of Civil Engineering

Canadian Standards Association (CSA) International. Member of Committee CSA S269.1/S269.3 Technical Committee on Formwork/Falsework for Construction Purposes (2011-present). CSA A23.1/A23.2 Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete (appointment 2002-2005)

Grant Reviewer Committee NSERC Scholarship Selection Committee 1998 – 2001

Member, TRB (Transportation Research Board). Standing Committee for 11th University Transportation Center Spotlight Conference: Rebuilding and Retrofitting the Transportation Infrastructure (2016-2019). Committee on Concrete Materials and Placement Techniques - AFN40 (2015-2018). Past member of committee A2E05 Concrete Materials and Placement (1991-2002)

PUBLICATIONS

Publications in Refereed Journals

1. Wu, Z., Khayat, K.H., and Shi, C., How do Fiber Shape and Matrix Composition Affect Fiber Pullout Behavior and Flexural Properties of UHPC? *Cement and Concrete Composites*, **90**, 2018, pp. 193-201.
2. Megid, W.A., Khayat, K.H., Evaluating Structural Buildup at Rest of SCC Using Workability Tests, *ACI Materials Jr.*, 1**15**(2), March 2018, pp. 257-265.
3. Meng, W., Khayat, K.H., and Bao, Y., Flexural Behavior of Ultra-High Performance Concrete Panels Reinforced with Embedded Fiber-Reinforced Polymer Grids, *Cement, Concrete and Composites*, April 2018.
4. Bate, B., Zhu, J., Cao, J., and Khayat, K.H., Determination of Mortar Setting Times Using Shear Wave Velocity Evolution Curves Measured by the Bender Element Technique, *Cement and Concrete Research*, **106**, 2018, pp. 1-11.
5. Meng, W., Khayat, K.H., Effect of Graphite Nanoplatelets and Carbon Nanofibers on Rheology, Hydration, Shrinkage, Mechanical Properties, and Microstructure of UHPC, *Cement and Concrete Research*, **105**, 2018, pp. 64-71, https://doi.org/10.1016/j.cemconres.2018.01.001.
6. Mehdipour, I., Khayat, K.H., Enhancing the Performance of Calcium Sulfoaluminate Blended Cements with Shrinkage Reducing Admixture or Lightweight Sand, *Cement and Concrete Composites*, **87**, 2018, pp. 29-43.
7. Mehdipour, I., Khayat, K.H., Understanding the Role of Particle Packing Characteristics in Rheo-Physical Properties of Cementitious Suspensions: A Literature Review, *Construction and Building Materials*, **161**, Feb. 2018, pp. 340-353.
8. Mehdipour, I., Zoughi, R., Khayat, K.H., Feasibility of using Near-Field Microwave Reflectometry for Monitoring Autogenous Crack Healing in Cementitious Materials,

Cement and Concrete Composites, **85**, 2018, pp. 161-173. doi.org/10.1016/j.cemconcomp.2017.10.014.

9. Hwang, S.D., Lepesqueux, E., and Khayat, K.H., Effect of Lightweight Aggregate on Key Properties of SCC Designated for Repair Applications, *Jr. of Sustainable Cement-Based Materials*, **7** (2), 2018, pp. 79-98.
10. Wu, Z., Shi, C., Khayat, K.H., Multi-Scale Investigation of Microstructure, Fiber Pullout Behavior, and Mechanical Properties of Ultra-High Performance Concrete with Nano-$CaCO_3$ Particles, *Cement and Concrete Composites*, 2018, **86**, Feb., pp. 255-265.
11. Meng, W., Khayat, K.H., Effect of Hybrid Fibers on Fresh Properties, Mechanical Properties and Autogenous Shrinkage of Cost-Effective UHPC, *Journal of Materials in Civil Engineering*, **30** (4), 2018, 04018030, DOI: 10.1061/(ASCE)MT.1943-5533.0002212.
12. Meng, W., Samaranayake, V.A., and Khayat, K., Factorial Design and Optimization of UHPC with Lightweight Sand, *ACI Materials Jr.*, Jan.-Feb. 2018, pp. 129-138, DOI: 10.14359/51700995.
13. Mehdipour, I., Khayat, K.H., Elucidating the Role of Supplementary Cementitious Materials on Shrinkage and Restrained Shrinkage Cracking of Flowable Eco-Concrete, *Journal of Materials in Civil Engineering*, **30** (3), 2018, 04017308.
14. Sadati, S., Khayat, K.H., Rheological and Hardened Properties of Mortar Incorporating High-Volume Ground Glass Fiber, *Construction and Building Materials*, **5** (152), 2017, pp. 978-89.
15. Fang, L., Yuan, Q., Pan, Y., Wang, Y., Khayat, K., and Deng, D., Temperature Dependency of Dynamic Mechanical Properties of Cement Asphalt Paste by DMTA Method, *Journal of Wuhan University of Technology*, **32** (6), Dec. 2107, pp. 1379-1387.
16. Hosseinpoor, M., Khayat, K.H., and Yahia, A., Numerical Simulation of Dynamic Segregation of Self-Consolidating Concrete (SCC) in T-Box Set-up, *Computers and Concrete*, **20** (3), 2017, pp. 297-310, DOI: 10.12989/cac.2017.20.3.257.
17. Gil, A., Pacheco, F. Christ, R., Khayat, H.H., and Tutikian, B., Comparative Study of Concrete Panels' Fire Resistance, *ACI Materials Jr.*, **114** (5), Sept.-Oct. 2017, pp.755-762, DOI: 10.14359/51689715
18. Meng, W., Khayat, K.H., Effects of Saturated Lightweight Sand Content on Key Characteristics of Ultra-High-Performance Concrete, *Cement and Concrete Research*, **101**, 2017, pp. 46-54.
19. Meng, W., Yao, Y., Mobasher, B., and Khayat, K.H., Effects of Loading Rate and Notch-to-Depth Ratio of Notched Beams on Flexural Performance of Ultra-High-Performance Concrete, *Cement and Concrete Composites*, **83**, 2017, pp. 349-59.
20. Hosseinpoor, M., Khayat, K.H., and Yahia, A., Numerical Simulation of Self-Consolidating Concrete Flow as a Heterogeneous Material in L-Box Set-up: Effect of Rheological Parameters on Flow Performance, *Cement and Concrete Composites*, **1** (83), 2017, pp. 290-307.
21. Sadati, H., Khayat, K.H., Restrained Shrinkage Cracking of Recycled Aggregate Concrete, *Materials and Structures*, **50** (4), 2017, p. 206.

22. Long, W., Khayat, K.H., Yahia, A., Hwang. S.-D., and Xing, F., Rheological Approach in Proportioning and Evaluating Prestressed Self-Consolidating Concrete, *Cement and Concrete Composites*, **82**, 2017, pp. 105-116.
23. Liu, J., Shi, C., Ma, X., Khayat, K.H., Zhang, J., and Wang, D., An Overview on the Effect of Internal Curing on Shrinkage of High Performance Cement-Based Materials, *Construction & Building Materials*, **15** (146), 2017, pp. 702-712.
24. Sadati, H., Khayat, K.H., Rheological and Hardened Properties of Mortar Incorporating High-Volume Ground Glass Fiber, *Construction & Building Materials*, 1**52**, 2017, pp. 978-989.
25. Aïssoun, B.M., Gallias, J.-L., and Khayat, K.H., Influence of Formwork Material on Transport Properties of Self-Consolidating Concrete near Formed Surfaces, *Construction and Building Materials*, **146**, 2017, pp. 329-337.
26. Mehdipour, I., Kumar, A., and Khayat, K.H., Rheology, Hydration, and Strength Evolution of Interground Limestone Cement Containing PCE Dispersant and High Volume Supplementary Cementitious Materials, *Materials and Design*, **127**, 2017, pp. 54-66.
27. Sadati, S., Arezoumandi, M., Khayat, K.H., and Volz, J.S., Bond Performance of Sustainable Reinforced Concrete Beams, *ACI Materials Jr.*, **114** (4), 2017, pp. 537-547.
28. Mehdipour, I., Horst, M., Zoughi, R., and Khayat, K.H., Use of Near-Field Microwave Reflectometry to Evaluate Steel Fiber Distribution in Cement-Based Mortars, *Journal of Materials in Civil Engineering*, **29** (7), 2017, pp. 1-12.
29. Yuan, Q., Zhou, D., Khayat, K.H., and Feys, D., On the Measurement of Evolution of Structural Build-up of Cement Paste with Time by Static Yield Stress Test vs. Small Amplitude Oscillatory Shear Test, *Cement and Concrete Research*, **99**, 2017, pp. 183-189.
30. Bao, Y., Valipour, M., Meng, W., Chen, G., and Khayat, K.H., Distributed Fiber Optic Sensor-Enhanced Detection and Prediction of Shrinkage-Induced Delamination of Ultra-High-Performance Concrete Overlay, *Smart Materials and Structures*, **26**, 2017, 085009 (12 pp).
31. Omran, A.F., Khayat, K.H., Effect of Formwork Characteristics on SCC Lateral Pressure, *Journal of Materials in Civil Engineering*, **9** (5), 2017, 04016293 (10 pp).
32. Omran, A.F., Khayat, K.H., Progress to Understand Influence of Reinforcement Density on SCC Lateral Pressure, *Materials and Structures*, **50** (2), 2017, 152.
33. Hosseinpoor, M., Khayat, K.H., and Yahia, A., Numerical Simulation of Self-Consolidating Concrete Flow as a Heterogeneous Material in L-Box Set-up: Coupled Effect of Reinforcing Bars and Aggregate Content on Flow Characteristics, *Materials and Structures*, **50** (163), 2017, 163.
34. Esmaeilkhanian, B., Khayat, K.H., and Wallevik, O.H., Mix Design Approach for Low-Powder Self-Consolidating Concrete: Eco-SCC – Content Optimization and Performance, *Materials and Structure*, **50** (124), 2017, 124.
35. Megid, W., Khayat, K.H., Bond Strength in Multilayer Castings of Self-Consolidating Concrete, *ACI Materials Jr*., **114** (3), 2017, pp. 467-476.

36. Wu, Z., Shi, C., and Khayat, K.H., Effect of Nano-SiO_2 Particles and Curing Time on Development of Fiber-Matrix Bond Properties and Microstructural of Ultra-High Strength Concrete with Nano-SiO_2 Particles, *Cement and Concrete Research*, **95**, 2017, pp. 247-256.
37. Meng, W., Khayat, K.H., Improving Flexural Performance of Ultra-High-Performance Concrete by Rheology Control of Suspending Mortar, *Composites Part B*: Engineering, **117**, 2017, pp. 26-34.
38. Mehdipour, I., Khayat, K.H., Effect of Particle-Size Distribution and Specific Surface Area of Different Binder Systems on Packing Density and Flow Characteristics of Cement Paste, *Cement, Concrete and Composites,* **78**, 2017, pp. 120-131.
39. Feys, D., Khayat, K.H., Particle Migration during Concrete Rheometry: How Bad Is It? *Materials and Structures*, **50** (2), 2017, p. 122.
40. Meng, W., Valipour, M., and Khayat, K.H., Optimization and Performance of Cost-Effective Ultra-High Performance Concrete, *Materials and Structures*, **50** (29), 2017, pp. 1-16.
41. Naji, S., Karray, M., and Khayat, K.H., Versatility of Piezoelectric Ring Actuator Technique for Characterisation of Cement Paste and Mortar, *ASTM Advances in Civil Engineering Materials,* **6** (1), 2017, pp. 189-212.
42. Esmaeilkhanian, B., Diederich, P., Khayat, K.H., and Yahia, A., and Wallevik, Ó.H., Influence of Particle Lattice Effect on Stability of Suspensions: Application to Self-Consolidating Concrete, *Materials and Structures*, **50** (39), 2107, p. 39.
43. Yuan, Q., Lu, X., Khayat, K.H., Feys, D., and Shi, C., Small Amplitude Oscillatory Shear Technique to Evaluate Structural Build-up of Cement Paste, *Materials and Structures*, **50** (122), 2017, pp. 1-12.
44. Ghafari, E., Feys, D., and Khayat, K.H., Feasibility of Using Natural SCMs in Concrete for Infrastructure Applications, *Concrete and Building Materials Jr.*, **127**, 2016, pp. 724-732.
45. Vanhove, Y., Khayat. K.H., Forced Bleeding Test to Assess Stability of Flowable Concrete, *ACI Materials Jr.*, **113** (6), 2016, pp. 753-758.
46. Sadati, H., Khayat, K.H., Field Performance of Concrete Pavement Incorporating Recycled Concrete Aggregate, *Construction & Building Materials Jr.*, **126**, 2016, pp. 691-700.
47. Feys, D., De Schutter, G., Khayat, K.H., and Verhoeven, R., Changes in Rheology of Self-Consolidating Concrete Induced by Pumping, *Materials and Structures*, **49** (11), 2016, pp. 4657-4677.
48. Naji, S., Khayat, K.H., and Karray, M., Assessment of Static Stability of Concrete Using Shear Wave Velocity Approach, *ACI Materials Jr.*, **114** (1), 2017, pp. 105-115.
49. Meng, W., Khayat, K.H., Mechanical Properties of Ultra-High-Performance Concrete Enhanced with Graphite Nanoplatelets and Carbon Nanofibers, *Composites Part B: Engineering*, **107**, 2016, pp. 113-122.
50. Foudazi, A., Mehdipour, I., Donnell, K.M., and Khayat, K.H., Evaluation of Steel Fiber Distribution in Cement-Based Materials Using Active Microwave Thermography, *Materials and Structures*, **49** (12), 2016, pp. 5051-5065.

51. Meng, W., Lunkad, P., Kumar, A., and Khayat, K.H., Influence of Silica Fume and PCE Dispersant on Hydration Mechanisms of Cement, *Journal of Physical Chemistry C*, **120** (47), pp. 26814-26823.
52. Cao, Q., Hwang, S.D., Khayat. K.H., and Morcous, G., Design and Implementation of Self-Consolidating Concrete for Connecting Precast Concrete Deck Panels to Bridge Girders, J*ournal of Materials in Civil Engineering*, **28 (8)**, 2016, No. 0401605, DOI: 10.1061/(ASCE)MT.1943-5533.0001563.
53. Wu, Z., Shi, C., and Khayat, K.H., Influence of Silica Fume Content on Microstructure Development and Bond to Steel Fiber in Ultra-High Strength Cement-Based Materials (UHSC), *Cement and Concrete Composites*, **71**, 2016, pp. 97-109.
54. Wu, Z., Shi, C., Khayat, K.H., and Wan, S., Effects of Different Nanomaterials on Hardening and Performance of Ultra-High Strength Concrete (UHSC), *Cement and Concrete Composites*, **70**, 2016, pp. 24-34.
55. Aïssoun, B., Khayat, K., and Gallias, J.-L., Variations of Sorptivity with Rheological Properties of Concrete Cover in Self-Consolidating Concrete, *Construction and Building Materials*, **113**, 2016, pp. 113-120.
56. Mehdipour, I., Khayat, K.H., Effect of Supplementary Cementitious Material Content and Binder Dispersion on Packing Density and Compressive Strength of Sustainable Cement Paste, *ACI Materials Jr*., **113** (3), 2016, pp. 361-372.
57. Gardner, J.N., Keller, L, Khayat, K.H., Lange, D., and Omran, A.F., Field Measurements of SCC Lateral Pressure - Toronto 2014 Experimental Program SCC under Pressure, *Concrete International*, March 2016, pp. 42-50.
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Patent

Patent CA2322931-A1. Conductivity measuring method using multi-electrode probe for aqueous based suspension slurries, colloidal systems, involves measuring variations of electrical conductivity of colloidal systems as function of time. Patent Number: CA2322931-A1
Patent Assignee: Université de Sherbrooke. Inventors: Khayat, K.H.; Jolicoeur, C.; Trimbak, P.V.