BIOGRAPHICAL SUMMARY

**Professor Paulo J. M. Monteiro**

Department of Civil and Environmental Engineering

725 Davis Hall, Berkeley, CA 94720

University of California

**EDUCATION**

*Ph.D. (1985)*: Department of Civil Engineering, Structural Engineering and Structural Mechanics (SESM), University of California at Berkeley.

*Master of Science in Engineering (1981)*: Department of Civil Engineering, Structural Engineering and Structural Mechanics (SESM), University of California at Berkeley.

*Civil Engineer (1979):* Escola Politecnica da Universidade de Sao Paulo.

**POSITIONS HELD**

*Professor,* Department of Civil Engineering, University of California at Berkeley (1994-present).

*Faculty Scientist,* Department of Materials, Lawrence Berkeley Laboratory (2008-present)

*Group Head,* Structural Engineering, Mechanics, and Materials (2002-6).

*Vice-Chair, Technical Services,* Department of Civil Engineering, University of California at Berkeley (1993-96).

*Associate Professor*, Department of Civil Engineering, University of California at Berkeley (1990-94).

*Assistant Professor*, Department of Civil Engineering, University of California at Berkeley (1987-90).

*Consulting Engineer* for the Grupo de Cimento Paraiso (1986).

*Post Graduate Research Engineer* (1985) Department of Civil Engineering, University of California at Berkeley.

*Research Assistant* (1980-85) at the Department of Civil Engineering, University of California at Berkeley.

**Ph.D. THESIS**

Microstructure of Concrete and its Influence on the Mechanical Properties. University of California Berkeley, 1985.

**AWARDS**

*Fulbright Fellowship (Politecnico di Milano, 2021)*

*2021 Jones Distinguished Lecture, Missouri S&T*

*Member of the U.S. National Academy of Engineering (2020)*

*Honorary Member of the Brazilian Concrete Institute (2019)*

*Della Roy Lecture Award (2017)*

*2016 Stephen Brunauer Award* from the Cements Division of the American Ceramics Society for the best paper on cements published in 2015.

*Member of the EU Academy of Sciences*(2017).

*CEE Distinguished Speaker* University of Illinois Urbana-Champaign (2015)

*Guest Professor at Southeast University,* China, 2015, *Guest Professor* (2015) Tongji University, *Visiting Professor at Cachan University,* France*,* 2015.

*Outstanding Paper Award*, International Conference on Sustainable Construction Materials and Technologies (SCMT3), Kyoto, Japan, 2013.

*Roy W. Carlson Distinguished Professor* (2008-present), Department of Civil Engineering, University of California at Berkeley.

*Honra ao Merito* Award (2010) from IBRACON.

*Guest Professor* (2010) at Wuhan University of Technology.

*Premio Ari Torres (2005)*, highest award for concrete research given by the Brazilian Concrete Institute.

*Brunauer Award (2004)* from the American Ceramics Society.

*Wason Medal for Materials Research,* (2003) from the American Concrete Institute.

*Livre Docente* (1993) from the University of São Paulo, Brazil.

*Presidential Young Investigator* (1989-94), National Science Foundation.

*Roy W. Carlson Distinguished Professor* (1987-88), Department of Civil Engineering, University of California at Berkeley.

*Royal Norwegian Council* for Scientific and Industrial Research Fellowship (1992), Norway.

*British Council Fellowship*, Imperial College, University of London (1988-89).

*Carlson-Polivka Fellowship* (1985) given by the Department of Civil Engineering, U.C. Berkeley.

*Willian & Helena Popert Fellowship* (1984): given by the Department of Civil Engineering, U.C. Berkeley.

*Rotary Foundation Fellowship* (1980-1981) for MS degree at U.C. Berkeley.

**RESEARCH POSITIONS**

Invited Researcher at the Department of Materials Science, Imperial College (University of London) by the British Council (Summers 88, 89) to study alkali-aggregate reaction.

Post Graduate Research Engineer (June to December 85) with the following duties and responsibilities: (1) Conduct research on the microstructure of concrete. (2) Study the microcracking and the composite nature of mortar using acoustic wave measurements and mathematical modeling. (3) Study irreversible phenomena during the expansion of concrete.

Research Assistant (June 80 to June 85) at the UCB Civil Engineering Department to research the following topics: (1) Viscoelastic behavior of concrete, (2) Cryogenic concrete, (3) Microstructure and micromechanics of concrete.

University Paul Sabatier, France ( Winter 1982) to study the rock-cement paste interface.

Petrobras (Brazilian Petroleum Company, Summer 1982) to develop API cement for oil well cementing and to study concrete for off-shore platforms.

Instituto de Pesquisas Tecnologicas (Brazilian Research Institute, 1978-1980) to study cracking and failure of concrete.

**RECENT CONSULTING WORK**

*Consultant for Santo Antonio Dam*

*Consultant for Maua Dam*

*Member of the Technical Board for Calera Co.*

*Chair of the Technical Board for CalStar cement (2007-2009)*

*APA/Chevron:* Storage tanks

*FURNAS Centrais Electricas*: concrete large dams constructed using roller compacted concrete.

*Irape Consortium*: feasibility study of using pyrite in a large concrete dam

*Morley Contractors*: development of the concrete used in the Los Angeles Cathedral.

*Caltrans*: Litigation of the Paso Robles bridge.

*ARPA*: Modeling of the creep data for the concrete used in the new Bay Bridge.

*Termite:* for the production of two videos for the Discovery Channel (Roman Concrete and Troy).

**PROFESSIONAL SOCIETIES**

American Society of Civil Engineers (ASCE)

American Concrete Institute (ACI)

Chi Epsilon

United States Committee on Large Dams (USCOLD)

American Ceramics Society

Brazilian Concrete Institute

### MEMBER OF THE EDITORIAL BOARD

Advances in Concrete Construction, American Editor-in-Chief

Associate Editor - Journal of Nanomechanics and Micromechanics, ASCE

Cement and Concrete Research

Revista Ingenieria de Construccion

International Journal of Concrete Structures and Materials

Materiales de Construcción, Institute Eduardo Torroja

Frontiers: Materials, EPFL

**PRESENT Ph.D. STUDENTS**

Juan Carvajal Vinasco: Green cements

Daniela Martínez: Sustainability of concrete

Ying Tsun Su: High-Pressure Behavior of Calcium Silicate Hydrates

Ke Xu: Advanced Image Processing of microtomographic data

**FORMER Ph.D. STUDENTS**

*1. Jy-An Wang* (1987): "A Modified Direct Method for the Calculation of the Elastic Properties of Composite Materials" (Prof. J. Lubliner, co-chairman).

*2. Vladimir A. Paulon*  (1991): “Microstruture of the Aggregate-Cement Paste Transition Zone” (at University of Sao Paulo).

*3. Vassilis P. Panoskanis* (1992): “Rate Effect in the Constitutive Modeling of Concrete and Geomaterials Including Plasticity and Damage” (Prof. Lubliner, co-chair).

*4. Virgilio A. Ghio*  (1993): “The Rheology of Fresh Concrete and Its Effect on the Shotcrete Process”.

*5. Kuokai Shyu* (1993): “Nodal-based discontinuous Deformation Analysis”.

*6. Chiao-Tung Chang* (1994): “Nonlinear Dynamic Discontinuous Deformation Analysis with Finite Element Meshed Block System”.

*7. Kamran Nemati* (1994): “Generation and Interaction of Compressive Stress-Induced Microcracks in Concrete”.

*8. Kejin Wang* (1994): “Expansion-Related Concrete Deterioration: Interaction Between Microstructure, Chemistry and Performance”.

*9. Monica Prezzi* (1995): “Analysis of the Mechanisms of Concrete Deterioration”.

*10. Denise Del Molin* (1995): High Strength Concrete (at University of Sao Paulo)

*11. David Trejo (1997)*: Microstructural design and electrochemical evaluation of Fe/2Si/0.1C dual-phase ferritic Martensitic steel for concrete reinforcement

*12. Kim Kurtis* (1998), Transmission Soft X-ray Microscopy of the Alkali-Silica Reaction

*13. Chun-Liang Lin*  (1999), Compressive Strength of Continuous Fiber-Reinforced Composites, Prof. Hari Dharan, co-chair.

14. Beverly P. DiPaolo (2000), An experimental investigation on the axial crush of a thin-walled, stainless steel box component, Prof. Gronsky, co-chair.

15. David J. Corr (2001), A Microscopic Study of Ice Formation and Propagation in Concrete.

16. J. Zhang (2002): Non invasive surface measurement of the corrosion impedance of rebar in concrete.

17. Hal Amick (2004), Concrete Damping Properties and Their Modifications, 2004.

18. Kome Shomglin (2004), Susceptibility of Deformed Granitic Rocks of the Santa Rosa Mylonite Zone to the Alkali Silica Reaction in Concrete, Prof. Rudy Wenk (co-advisor)

19. Nicole P. Hasparyk (2005), Investigation of concrete affected by the alkali-silica reaction, Prof. D. Dal Molin (co-advisor), University Federal do Rio Grande do Sul, Brazil.

20. Ana Paula Kirchheim (2008), Characterization of the hydration of cubic and orthorhombic tricalcium aluminate, Prof. D. Dal Molin (co-advisor), University Federal do Rio Grande do Sul, Brazil.

21. Fariborz Vossoughi (2008), Assessing Impact Resistance of Concrete-Based Materials, Prof Ostertag (co-advisor).

22. Cruz Carlos (2008), Microscopic Observations of Internal Frost Damage and Salt Scaling

23. Mauricio Mancio (2009), Electrochemical and in-situ Surface-Enhanced Raman Spectroscopic (SERS) Study of Passive Films Formed on Low-Carbon Steel in Highly Alkaline Environments, Prof. Devine (co-advisor)

24. Jae-Eun Oh (2009), High Pressure Synchrotron X-ray Diffraction of Calcium-Silicate Hydrates and Alkali-activated Inorganic Binder.

25. Seyoon Yoon (2012) Multi-scale studies of transport and adsorption phenomena of cement-based materials in aqueous and saline environment.

26. Cagla Meral (2012), The Study of Disorder in Amorphous Silica, Alkali-Silica Reaction Gel and Fly Ash by (Profs. Monteiro and Ostertag, advisors).

27. Pierre-Adrien Itty (22012), Microscale investigation of the corrosion performances of low-carbon and stainless steels in highly alkaline concretes.

28. Ju-hyuk Moon (2013), Experimental and Theoretical Studies on Mechanical Properties of Complex Oxides in Concrete.

29. Craig Hargis (2013) Advances in Sustainable Cements

30. Sungchul Bae (2013): Synchrotron X-ray Spectro-microscopy and Micro-diffraction Study on the Hydration of Tricalcium Silicate including High-Volume Fly Ash

31. Kemal Celik (2015): Development and Characterization of Sustainable Self-Consolidating Concrete Containing High Volume of Limestone Powder and Natural or Calcined Pozzolanic Materials

32. Guoqing Geng (2017): Characterization of Cementitious Materials with Synchrotron-Radiation-Based Nanoprobes

33. Carlos Orozco (2017): Determination of structural changes, bonds character and mechanical properties of materials formed by the interaction between C-S-H and soluble organic compounds.

34. Jiaqi Li (2019): Advanced cements with low-carbon footprint.

35. Daniella

36. Ying

37. Rosie

38. Juan Felipe Carvajal-Vinasco (2023) Study of the Reactivity of Calcium Aluminum Silicate Binders (Jiaqi Li, co-advisor.)

**Post-docs**

Rupert Myers: 2015-2016, Hydration of C3A

Daniel Hernandez-Cruz, 2012-2014, Post-Doc, spectromicroscopy

Rae Taylor, 2011-2015, TEM nanotomography

Juyoung Ha, 2008-2011, Post-Doc, Spectromicroscopy

Mauricio Mancio, 2008-2011, Post-Doc, Corrosion of Concrete

Sezen Soyer, 2010, Pair Distribution Functions

Jae-En Oh, 2009-2011, High pressure physics of crystals

Kamile Tosun, 2009-2010, Durability of Concrete

Lawrie Skinner, 2009, Pair Distribution Function

Yelena Shvets, 2007-2008, Modeling of Porous Media

Nadia Segre (2000-01), Surface chemistry

Maria Garcia Junger (2001-02); X -ray microscopy

Jaesuk Ryou, (2000-02), Corrosion of Concrete

*Flavio Rodrigues* (University of Campinas): surface chemistry (1996-98)

Kamran Nemati (1995-98): high-strength concrete

*Melanie Lutz* (Presidential Post-Doctoral Fellow, UCB): micromechanics of concrete (1995-97)

Gordon Vrdoljak (1998-99): atomic force microscope

**RESEARCH WITH VISITING SCHOLARS AT BERKELEY**

Yunsheng Zhang, College of materials science and engineering, Southeast University, 21189, 2013-2014.

Qinfei Li, School of Transportation Science and Engineering, Harbin Institute of Technology, 2012-2014.

Jianguo Han, Department of Civil Engineering, Tsinghua University, 2014, Image Analysis.

Sifeng Liu, Tongji University, 2013, Durability of Concrete.

Kang Su Kim, Department of Architectural Engineering, The University of Seoul, 2013, durability of concrete.

Tetsuya Oyamada, Associate Professor, Iwate University, 2013, ice formation in concrete.

Ouyang dong Professor, Jinan University, 2012-present, green cements

Manabu Kanematsu, Visiting Scholar, 2011-2012, Tokyo University of Science, neutrons radiography

Ki Hyun Kim, Seoul National University,2011-2012, Geopolymers

Marie Jackson, Visiting Research Engineer, 2011-2014, Roman concrete

Weiguo Shen, Visiting Research Engineer, 2011- 2013, microscopy of cements

Penghui Li, Visiting Scholar, 2011-2012, Tsinghua University, concrete dams

Hailong Wang, 2009-2010, Visiting Scholar, Zhejiang University, Durability of Concrete

Wei Shi, 2009-2010, Visiting Scholar, Northeast Dianli University, Geopolymers

Se-Jin Choi, SAMPYO Corporation, Korea, 2007-2008, Geopolymers

Shiyun XIAO, Visiting Scholar, Dalian University (China), 2007, Micromechanics

Moh Boulfiza, University of Saskatchewan, 2007, Prediction models for concrete

Ssang-Sun Jun, Pusan National University, 2006-2008, Alkali-Silica Reaction.

Ichiro Kono (Toyota National College of Technology, 2005-2006) Durability of Concrete

Hakan Nuri Atahan (Visiting Scholar, University of Turkey, 2004-2005), Ice formation in concrete

Olivier Coussy (Miller Professor, Navier Institute, 2004), Cryosuction in concrete

Vladimir Paulon (Universidade de Campinas, 2004), Alkali-silica reaction

Ravindra Gettu (University of Catalonia, 2004), Fiber Reinforced Concrete

Jorge Crempion (University of Chile, 2004) Structural Engineering

Denise Silva (Federal University of St. Catarina 2003-04), polymers in concrete

T. Saeki (Nigata University), durability of concrete

Hong Rhim (Yonsei University, 2002-2003), NDE of concrete

Rogério de Oliveira Rodrigues, (UNESP University, 2001-02), Damage in Dams

Kwang M. Lee, (Sungkyunkwan University, Korea, 2001-02), Modeling of Concrete

L. Turanli (Metu University, 1999-2000): ASR

J. Wang (National Central University, 1999-2000): modeling of concrete

O. Nielsen (Chalmers University, 1999): durability of concrete

H. Kwon (Yeungram University, Korea, 1999-2000): repair of concrete

*S. Go* (Pukyong National University, South Korea): ice propagation (1998-99)

*T. Noguchi*  (University of Tokyo): high-strength concrete (1997-98)

*H. Fujiwara* (Nihon Cement Company): cement production (1997-98)

*Young Su Kim*  Korea: non-destructive methods (1995-97)

*Reinhard Piltner* (VDI Dusseldorf, Germany): finite element methods for fracture mechanics. (1992-95)

*João Hanai* (University of São Carlos, Brazil): durability of ferrocement.

*Paulo Helene* (Escola Politécnica of University of São Paulo, Brazil): concrete mix proportioning. (1992-94)

*Shingo Miyazawa* (Hiroshima University, Japan): autogenous volume change (1993-94)

*Sung Hoo Kang* (Dongshin University, Korea): fracture mechanics of concrete. (1992)

*Abla Zayed* (University of South Florida, Tampa): the aggregate-cement paste transition zone. (1989)

*Karen Scrivener* (Imperial College, London University): alkali-aggregate reaction. (1988)

**RECENT SPONSORED RESEARCH**

* SusChEM: Environmentally sustainable concretes enabled by multiscale investigation of ancient Roman concretes (Co-PI with Roya Maboudian, $ 497,709) NSF, 2014-2017
* Building Efficiency and sustainability in the Tropics (Co-PI, multi-investigator award), ($40,000,000, for my work at UC Berkeley, $750,000) 2012-2017.
* Oak Ridge National Laboratory, Research on Alkali-Silica Reactions. Sponsor Award ID: 033382-002. PI. Total: $55,000
* Siam Cement Company, Nano Characterization of the Hydration of Calcium Aluminate Phases, Including the Effect of Chemical Admixtures. Sponsor Award ID: 038178-002. PI. Total: $140,307, 2015-2016.
* Green Concrete and Sustainable Construction: A Multi-scale Approach ($ 8 Million), 2008-2013 (renewed yearly), KAUST.
* The Science of Concrete with Fly Ash: Fundamental Models that Enable New Technology for Expanded Use of Fly Ash (Co-PI), $237,827, ARRA-NIST, 09/01/11 – 12/31/12.
* ALS Project ALDOWC, LBNL, $67,401, 05/01/12 – 01/31/2013.
* Identification of Reactive Aggregates Using Neutron Diffraction and Development of Methods to Reduce the Alkali-silica Reaction Expansion, (Wenk, co-PI), $220,000, NSF, 2006-2010.

RECENT INVITED LECTURES

* Characterization of Advanced Cementitious Materials Using X-Ray Synchrotron Radiation, Gordon conference on Instructive Surfaces: From Guiding Chemical Reactions to Controlling Protein Adhesion, 2019
* Advances in Characterizing and Understanding the Microstructure of Cementitious Materials, 15th International Congress on the chemistry of cement, Prague, Czech Republic, September 16-20, 2019
* X-ray Synchrotron Radiation Sheds New Light on the Nanostructure of Cementitious Materials The Hong Kong University of Science and Technology, 2018.
* DEVELOPMENT OF MULTI-FUNCTIONAL ENERGY-EFFICIENT STRUCTURAL MATERIALS, Croatia, 2017.
* Multiscale X-ray Imaging: from meter to nanometer, *UT Austin Department Distinguished Lecturer*, April 2016
* High-resolution imaging of materials, Georgia Tech, 2016.
* Advances in understanding hydration of Portland cement, Keynote speaker at the International Congress of Cement Chemistry, Beijing, 2015
* Cementitious Materials under the Nanoscope, IIT Madras, 2015
* Unlocking the secrets of ancient Roman concrete, IIUC, 2015
* Advances in Green Concrete: A Multi-scale Approach, Northwestern University, 2015
* Series of lectures on durability and nanotechnology given at Harbin, Southeast and Tongji Univeristy, 2015.
* Two thousand years of concrete technology and the challenges for the new millennium, Houston University, 2014
* Cement and Concrete Research Using X-rays at the Advanced Light Source in Berkeley, Cachan University, 2015
* XIII Civil Engineering Symposium from Universidad Panamericana, Guadalajara, May, 2014.
* Role of Chemical Admixtures in the Concrete Industry, *Invited Lecture*, 4th Conference of Chemical Admixtures on Structures, Ankara, October 2013.

## Patents

1. Paulo Monteiro and Frank Morrison “Non-Destructive Method of Determining the Position and Condition of Reinforcing Steel in Concrete”, US Patent 5,855,721 (1999).

2. Brent R. Constantz, Laurence Clodic, Cecily Ryan, Miguel Fernandez, Kasra Farsad, Sidney Omeron, Plilip Tuet, Paulo Monteiro, Gordon E. Brown, Katharine Geramita. "Production of Carbonate-Containing Compositions from Material Comprising Metal Silicates", US Patent US 7,749,476 B2 (2010).

3. Brent R. Constantz, Paulo J.M. Monteiro, Miguel Fernandez, Katharine Geramita, Karin Yaccato, Methods and Systems for Utilizing Waste Sources of Metal Oxides, Patent No. 9260314 (2016).

4. Constantz, B. R., Monteiro, P.J. M. , Self, K., Chen, I., Cement and Concrete with Reinforced Material, Patent No. 8,906,156 B2 (2014).

**PUBLICATIONS**

**Books**

1. Mechanical Modeling of the Transition Zone, Chapter 4 in “Interfacial Transition Zone in Concrete”, edited by J. C. Maso, E & FN SPON, (1995).

1. Computer Tomography of Reinforced Concrete (with C.Y.Pichot and K. Belkebir), Chapter 12, Materials Science of Concrete, American Ceramics Society (1998).
2. The elastic moduli of concrete, Handbook of Elastic Properties of Solids, Liquids and Gases edited by Levy, Bass, and Stern, Volume II: Elastic Properties of Solids: Theory, Elements, and Compounds, Novel Materials, Technological Materials, Alloys, and Building Materials, Academic Press, pp. 393-411, (2001)
3. Long Term Durability of Structural Materials (edited with K.P. Chong, J. Larsen-Basse, K. Komvopoulos), Elsevier Science Ltd, Oxford, UK. (2001).
4. P.K. Mehta and P.J.M. Monteiro, *Concrete: Microstructure, Properties, and Materials*, McGraw-Hill, fourth edition (2014) [third edition published by McGraw-Hill (2006), second edition published by Prentice Hall, (1993). [Translated to Japanese, Chinese, Greek, Spanish, Portuguese, and Persian]

**Refereed Journals**

### A. Archival Journals

1. Monteiro, P.J.M. and P.K. Mehta, "Ettringite Formation on the Aggregate-Cement Paste Interface," *Cem. Concr. Res.*, vol. 15, 1985, pp. 378-380.

2. Monteiro, P.J.M., S. J. Bastacky and T.L. Hayes, "Low-Temperature Scanning Electron Microscope Analysis of the Portland Cement Paste Early Hydration," *Cem. Concr. Res*, vol. 15, 1985, pp. 687-693.

3. Monteiro, P.J.M., O.E. Gjorv and P.K. Mehta, "Microstructure of the Steel-Cement Paste Interface in the Presence of Chloride," *Cem. Concr. Res.*, vol. 15, 1985, pp. 781-784.

4. Monteiro, P.J.M., J.C. Maso and J.P. Ollivier, "The Aggregate-Mortar Interface," *Cem. Concr. Res.*, vol. 15, 1985, pp. 953-958.

5. Monteiro, P.J.M. and P.K. Mehta, "The Transition Zone Between Aggregate and Type K Expansive Cement," *Cem. Concr. Res.*, vol. 16, 1986, pp. 111-114.

6. Monteiro, P.J.M. and J. Lubliner, "Effect of Stress on the Irreversible Expansion of Concrete,"*Cem. Concr. Res.*, vol. 16, 1986, p. 119.

7. D. Pirtz, K.Thomas and P.J.M Monteiro, "Stress Relaxation: Comparison of Measured and Computed Values," *ACI Journal*, vol. 83, 1986, pp. 432-437.

8. Monteiro, P.J.M. and P.K. Mehta, "Interaction Between Carbonate Rock and Cement Paste," *Cem. Concr. Res.*, vol. 16, 1986, pp. 127-134.

9. Monteiro, P.J.M. and P.K. Monteiro, A Reply to Discussion of the Paper "Interaction Between Carbonate Rock and Cement Paste," *Cem. Concr. Res.*, vol. 16, 1986, p. 974.

10. R.W. Zimmerman, P.J.M Monteiro, and M.S. King, "The Elastic Moduli of Mortar as a Porous-Granular Material," *Cem. Concr. Res.*, vol. 16, 1986, pp. 239-245.

11. Monteiro, P.J.M. and W.P. Andrade "Analysis of the Rock-Cement Paste Bond Using Probabilistic Treatment of Brittle Strength," *Cem. Concr. Res.*, vol. 17, 1987, pp. 919-926.

12. R.J. Detwiler, P.J.M Monteiro, H. Wenk and Z. Zhong, "Texture of Calcium Hydroxide Near the Cement Paste-Aggregate Interface," *Cem. Concr. Res.*, vol. 18, 1988, pp. 823-829.

1. J.A. Wang, P.J.M Monteiro and J. Lubliner, "Effect of Ice Formation on the Elastic Moduli of Cement Paste and Mortar," *Cem. Concr. Res.*, vol. 18, no. 6, 1988, pp. 874-885.

 14. Monteiro, P.J.M. and M.S. King, "Experimental Studies of Elastic Wave Propagation in High-Strength Mortar," *ASTM Journal*, vol. 10, no. 2, 1988, pp. 68-74.

 15. P.K. Mehta and P.J.M Monteiro, "Blended and Modified Cements,” State of the Art 1987, *Cement Research Progress*, American Ceramics Society, 1988.

16. Monteiro, P.J.M., O.E. Gjorv, and P.K. Mehta, "Effect of Condensed Silica Fume on the Steel-Cement Paste Transition Zone," *Cem. Concr. Res*, vol. 19, no. 1, 1989, pp. 114-123.

17. J. Ju, P.J.M Monteiro and A. Rashed, "Continuum Damage of Cement Paste and Mortar as Affected by Porosity and Sand Concentration,” *Journal of Engineering Mechanics*, ASCE, vol. 115, no. 1, 1989, pp. 105-130.

18. A.I. Rashed, P.J.M Monteiro, J. Bastacky and T.L. Hayes, "Ice in Cement Paste as Analyzed in the Low-Temperature Scanning Electron Microscope,” *Cem. Concr. Res.*, vol. 19, 1989, pp. 306-314.

1. Monteiro, P.J.M. and C.P. Ostertag, "Analysis of the Aggregate-Cement Paste Interface Using Grazing Incidence X-Ray Scattering," *Cement and Concrete Research*, Vol. 19, 1989, pp.987‑988.

 20. Monteiro, P.J.M. and J. Lubliner, "A Generalized Continuum Theory for Concrete," *Cement and Concrete Research*, Vol. 19, 1989, pp. 929-938.

21. A. Mor, P.J.M Monteiro and W. Hester, "Observations of Healing of Cracks in High-Strength Lightweight Concrete," *Cement, Concrete and Aggregate*, Vol. 11, No. 2, 1989, pp. 121-125.

 22. A. Rashed, P.J.M Monteiro, R. Williamson and J. Bastacky, "The Morphology of Air-Entrained Voids at Early Ages” *Cement, Concrete and Aggregate*, Vol. 11, No. 2, 1989, pp. 126-128.

 23. Monteiro, P.J.M. and P.K. Mehta, "Blended and Modified Cements," State of the Art 1988, *Cement Research Progress*, American Ceramics Society, Chapter 8, 1989, pp. 214-245.

24. O.E. Gjørv, P.J.M Monteiro and P.K. Mehta, "Effect of Condensed Silica Fume on the Steel-Concrete Bond," *ACI Materials Journal*, Vol. 87, November-December 1990, pp. 573-580.

25. A.I. Rashed, P.J.M Monteiro, J. Bastacky and T.L. Hayes, "A Discussion of the Paper `Ice in Cement Paste as Analyzed in the Low-Temperature Scanning Electron Microscope,” *Cement and Concrete Research*, Vol 20, 1990, pp. 495-496.

26. Monteiro, P.J.M. and C. Human, "Blended and Modified Cements,” *State of the Art 1989 Cement Research Progress*, American Ceramic Society, Chapter 7, 1990, pp. 173-214.

27. P.J. Perie and P.J.M Monteiro, "Determination of Fracture Mechanism by Microscopic Observation of Cracks,” *Int. J. of Rock Mech. Min. Sci. & Geomech. Abstr.*, Vol. 28, No. 1, 1991, pp. 83-84.

 28. Monteiro, P.J.M., J. Asselanis and W. MacCracken, "Investigation of the Microstructure and Mechanical Properties of the Structural Materials of the I‑880 Double-Deck Viaduct,” *ACI Materials Journal*, Vol. 88, May-June 1991, pp. 288-293.

 29. J. Cohen and P.J.M Monteiro, "Durability and Integrity of Marble Cladding: A State of the Art Review,” *ASCE Journal*, Vol. 5, No. 2, May 1991, pp. 113-124.

 30. K.A. Heiskanen, P.J.M Monteiro and H.C. Rhim, "Computer Simulations of Limited Angle Tomography of Reinforced Concrete,” *Cement and Concrete Research*, Vol. 21, 1991, pp. 625-634.

31. Monteiro, P.J.M., "A Note on the Hirsch Model," *Cement and Concrete Research*, Vol. 21, 1991, pp. 947‑950.

 32. C.A. Human and P.J.M Monteiro, "Blended and Modified Cements,” *State of the Art 1990, Cement Research Progress*, American Ceramic Society, Chapter 6, 1991, pp. 167-200.

 33. A.U. Nilsen and P.J.M Monteiro, "Concrete: A Three Phase Material,” *Cement and Concrete Research*, Vol. 23, 1993, pp. 147‑151.

 34. H.E. Martz, D.J. Schneberk, G.P. Roberson and P.J.M Monteiro, "Computerized Tomography Analysis of Reinforced Concrete,” *ACI Materials Journal*, Vol. 90, No. 3, May-June 1993, pp. 259-264.

1. Monteiro, P.J.M., "Blended and Modified Cements,” *State of the Art 1991, Cement Research Progress*, American Ceramic Society, 1993.

 36. Monteiro, P.J.M., P.H. Helene, and Kang, “Designing Concrete Mixtures for Strength, Elastic Modulus and FractureEnergy,” *Rilem Journal*, Vol. 26, No. 162, 1993.

 37. A.U. Nilsen and P.J.M Monteiro, “A Reply to Discussion of the Paper Concrete: A Three Phase Material,” *Cement and Concrete Research*, Vol. 24, 1994.

1. V. Ghio, P.J.M Monteiro and L. Demsetz, “The Rheology of Fresh Cement Paste Containing Polysaccharide Gums,” *Cement and Concrete Research*, Vol. 24, 1994.
2. O. Gjorv, K. Tan and P.J.M Monteiro, “Effect of Elevated Curing temperature on the Chloride Permeability of High-Strength Lightweight Concrete,” *CCA Journal*, Vol. 16, No. 1, 1994.

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