

## Chair Professor (Research) LI, ZONGJIN

Department of Engineering Science, Faculty of Innovation Engineering  
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### Academic Qualification:

1990-1993: Dept. of Civil Engineering, Northwestern University, Evanston, Illinois.  
Ph. D in Structural Engineering.

1988-1990: Dept. of Civil Engineering, Northwestern University, Evanston, Illinois.  
M.S. in Structural Engineering.

1978-1982: Dept. of Civil Engineering, Zhejiang University, Hangzhou, China.  
B.E. in Civil Engineering.

### Teaching Area

Sustainable development of building materials; Materials Mechanics; Advanced Concrete Technology; Energy Crisis and Solutions

### Research Area

Sustainability of concrete; organic materials modified concrete; nondestructive testing in civil engineering; development of advanced building products; high toughness concrete; high modulus concrete; functional materials in civil engineering.

### Working Experience

Sept.2022- Present. Chair Professor, Faculty of Innovation Engineering, Macau University of Science and Technology.

Jan. 2017-Aug. 2022 Chair Professor, Institute of Applied Physics and Materials Engineering, University of Macau.

Jul. 2006-Jan. 2017 Professor, Dept. of Civil and Environmental Engineering, Hong Kong University of Science and Technology (HKUST).

Jan. 2009-Dec. 2013 Chief Scientist of China 973 National Key Research project, "Basic Study on Environmentally Friendly Contemporary Concrete".

Jul. 2008-Dec. 2013 Adjunct Professor, Southeast University.

Jan. 2003-Dec. 2007 Associate Dean, School of Engineering, HKUST.  
Jul. 2005-Dec. 2007 Director, PG Program of Nano-Science and Nano-Technology.  
Jul. 2002-Jun. 2006 Associate Professor (A), Dept. of Civil Engineering, HKUST.  
Jan. 2000-Jun. 2002 Associate Professor (B), Dept. of Civil Engineering, HKUST.  
Jul. 1994-Dec. 1999 Assistant Professor, Dept. of Civil Engineering, HKUST.  
Adjunct Professor, Dept. of Civil Engineering, Zhejiang University.  
Adjunct Professor, Dept. of Structural Engineering, Shandong University of Civil and Architectural Engineering.  
Oct. 1993-Jun. 1994 Research Associate, NSF ACBM Center, Northwestern University, U.S.A.  
Jun. 1986-Mar.1988 Visiting Scholar, Dept. of Civil Engineering, Northwestern University, U.S.A.  
Jul. 1982- May 1986 Instructor, Shandong Institute of Civil and Architectural Engineering, China.

#### Academic Publication ( selected )

1. Li, Yunjian, Pan, Hui, Liu, Qing, Ming, Xing, **Li, Zongjin\***, 'Ab initio mechanism revealing for tricalcium silicate dissolution', **NATURE COMMUNICATIONS**, 13(1):1-10, March 2022.
2. Ming, Xing, Li, Yunjian, Liu, Qing, Wang, Miaomiao, Cai, Yongqing, Chen, Binmeng\*, and **Li, Zongjin\***, 'Chloride binding behaviors and early age hydration of tricalcium aluminate in chloride-containing solutions', **CEMENT and CONCRETE COMPOSITES**, 137, 2023
3. Xu, Jianyu, Liu, Qing, Guo, Hongda, Wang, Miaomiao, **Li, Zongjin\***, Sun, Guoxing\*, 'Low melting point alloy modified cement paste with enhanced flexural strength, lower hydration temperature, and improved electrical properties', **COMPOSITES PRTR B: ENGINEERING**, 232:109628, Jan 2022.
4. Liu, Qing, Lu, Zeyu, Liang, Xiaoxu, Liang, Rui, **Li, Zongjin\***, Sun, Guoxing\*, 'High flexural strength and durability of concrete reinforced by in situ polymerization of acrylic acid and 1- acrylamido-2-methylpropanesulfonic acid', **CONSTRUCTION AND BUILDING MATERIALS**, 292:123428, July 2021.
5. Chen, Binmeng, Shao Hongyu\*, Li, Bo, **Li, Zongjin**. 'Influence of silane on hydration characteristics and mechanical properties of cement paste'. **CEMENT AND CONCRETE COMPOSITES**, 103743, July 13, 2020
6. Hou, Dongshuai, Zhang, Wei, Sun, Ming, Wang, Pan, Wang, Muhan, Zhang, Jinrui, **Li, Zongjin\***, 'Modified Lucas-Washburn function of capillary transport in the calcium silicate hydrate gel pore: A coarse-grained molecular dynamics study', **CEMENT AND CONCRETE RESEARCH**, 136:106166, Oct 2020.
7. Wang, Qiao, Ding, Hongyap, Hu, Xiaosai, Liang, Xiaoxu, Wang, Miaomiao, Liu, Qing, **Li, Zongjin\***, Sun, Guoxing\*. 'A dual-trigger-mode ionic hydrogel sensor for contact or contactless motion recognition'. **MATERIALS HORIZONS**, 7, July 2020.

8. Lu, Zeyu, Lu, Cong\*, Leung, ChristopherK.Y, **Li, Zongjin**. 'Graphene oxide modified Strain Hardening Cementitious Composites with enhanced mechanical and thermal properties by incorporating ultra-fine phase change materials', **CEMENT AND CONCRETE COMPOSITES**, 98: 83-94, Feb 13, 2019
9. Zhang, Lina\*, Yamauchi, Kazuo, **Li, Zongjin**, Zhang, Xixiang, Ma, Hongyan, Ge, Shenguang, 'Novel understanding of calcium silicate hydrate from dilute hydration', **CEMENT AND CONCRETE RESEARCH**, 99:95-105, Sept. 2017.
10. Sun, Guoxing, **Li, Zongjin\***, Liang, Rui, Weng, Lu-Tao, Zhang, Lina, 'Super stretchable hydrogel achieved by "non- aggregated" spherulites with diameters less than 5 nm', **NATURE COMMUNICATIONS**, 7(1):12095, June 2016.

## Books

1. Leung, Chris, Li, Zongjin, Ding, Jian-Tong, "High Performance Concrete – Workability, Strength, and Durability", HKUST, Dec. 2000. (Two volumes with total of 1201 pages)
2. Huo, Jingsi, Xiao, Yan, Li, Zongjin, Ahmad, Shuaib, "Advances in Concrete and Structures", Key Engineering Materials, Trans Tech Publications, 2008.
3. Xiao, Lianzhen, Wei, Xiaosheng, Li, Zongjin, "Concrete Hydration Based on Electrical Resistivity Measurement", VDM Verlag Dr. Muller Aktiengesellschaft & Co. KG, 2008
4. Li, Zongjin, Leung, Chris, Xi, Yunping, "Structural Renovation in Concrete", Taylor & Francis Ltd, pp 348, 2009.
5. Li, Zongjin, "Advanced Concrete Technology", John Wiley and Sons, pp 506, 2011.
6. Li, Zongjin, Sun, Wei, Miao, Changwen, Sakai, K., Gjprv, O. E. Banthia, N., "Proceedings of 7th International Conference on Concrete under Severe Conditions – Environment and Loading", 23-25 Sept. 2013, Nanjing, China. RILEM Publications S.A.R.L, PRO84.
7. Li, Zongjin, Zhang, Yamei, Leung, Chris, Zhang, Yunsheng, Chen, Huisu, "Construction Materials", China Architecture & Building Press, pp339, 2014
8. Li, Zongjin, Zhou, Xiangming, Ma, Hongyan, Hou, Dongshuai, "Advanced Concrete Technology 2nd Edition", John Wiley and Sons, pp 611, 2023.

## Patents ( selected )

1. 李宗津，曹香鹏。 '一种离子层润滑结构、挤出头及设备'，申请号：2018206915120，授权，CN 208182201 U.
2. 李宗津，曹香鹏，刘超，金南国，田野，高荣森。 '基于磁场的混凝土中钢筋锈蚀无损动态监测传感器及系统'，申请号：2018112132160.
3. 付传清，李宗津，金贤玉，闫东明，裴华富。 '荷载作用混凝土孔结构演化原位监测方法与试验装置'，CN 105466833 B，2018.
4. 付传清，李宗津，金贤玉，闫东明，张昀，屠一军。 '非接触式阻抗法测定混凝土连通孔隙率的方法与试验装置'，105424578B，2018.
5. Sun, Guoxing, Hu, Xiaosai Li, Zongjin, 高分子導電水凝膠材料及製備方法. Chinese Full Patent Application No. 201910239903.8.
6. Sun, Guoxing, Hu, Xiaosai Li, Zongjin. 一種超吸水水凝膠材料及其製備方法和應用.

Chinese Full Patent Application No. 201910268432.3.

7. 徐翔波，金祖权，王鹏刚，熊传胜，李宗津，宋华苗，李哲. ‘一种采集锈蚀钢筋电磁传感器信号的便携装置’，CN 209356451 U，2019.

8. 徐翔波，金祖权，王鹏刚，熊传胜，李宗津，宋华苗，李哲. ‘一种采集锈蚀钢筋电磁传感器信号的便携装置及使用方法’，申请号：2019100421431.

9. 李宗津，孙国星，陈斌猛，梁瑞. 一种聚合物水泥基材料及其制备方法与应用. Chinese Full Patent Application No. 202010274758.X.

10. 李宗津，孙国星，梁瑞，刘庆. 高抗折水泥基材料及其制备方法. Chinese Full Patent Application No. 202010358001.9.

### Professional Certification and Awards

深圳市自然科学二等奖，深圳市人民政府，2019.

The second-class Award of Natural Science, Mechanism and Function Design of Building Structure Energy Storage, Guangdong Province, 2018. (广东省自然科学二等奖，广东省科技厅)

The second-class Award of Science and Technology, The Association of Building Materials of China, 2018 (建筑材料科学技术二等奖，中国建筑材料联合会).

Arthur R. Anderson Medal. American Concrete Institute, 2017

Distinguished Visiting Fellowship Award, Royal Academy of Engineering, UK, 2013.

Honorary Member, American Concrete Institute, 2023.

Fellow, American Concrete Institute, 2012.

The Study on design theory, processing technique, and forming mechanism of geopolymer structural materials, The second-class Award of Natural Science, The Education Ministry, China, 2010. (2009-068)

The 150 most cited researchers in the Civil Engineering in the world in 2016 (The Most Cited Researchers: Developed for Shanghai Ranking's Global Ranking of Academic Subjects 2016 by Elsevier).

### Professional Society Membership

American Concrete Institute

Hong Kong Institute of Engineers

Editorial Advisory Committee, Cement and Concrete Composites.

Editorial Board, Journal of Computer and Concrete.

Editorial Board, International Journal of Mechanics and Solids.

Editorial Board, Frontiers of Architecture and Civil Engineering in China.

Editorial Board, The Open Construction and Building Technology Journal.

Editorial Board, International Journal of Korea Concrete Institute.