Chair Professor (Research) LI, Zongjin

Department of Engneering Science, Faculty of Innovation Engineering
Macau University of Science and Technology

Office A303a
Tel. +853-8897 3094
E-mail zjli@must.edu.mo

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

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

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 Universityof Science and Technology (HKUST).
Jan. 2009-Dec. 2013 Chief Scientist of China 973 National Key Research project, “Basic Study onEnvironmentally 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.

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- acrylanmido-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'.
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**,
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"

Patents（selected）

1. . ‘ 2018206915120 CN 208182201 U.
2. .
‘ 2018112132160.
3. .
‘ CN 105466833 B 2018.
4. .
‘ 抗 105424578B 2018.
5.Sun, Guoxing, Hu, Xiaosai Li, Zongjin, . Chinese Full Patent Application No. 201910239903.8.
6.Sun, Guoxing, Hu, Xiaosai Li, Zongjin. . Chinese Full Patent Application No. 201910268432.3.
7. .
‘ CN 209356451 U 2019.
8. .
‘ 2019100421431.
9. . . Chinese Full Patent Application No. 202010274758.X.

Professional Certification and Awards

2019.
The second-class Award of Natural Science, Mechanism and Function Design of Building Structure Energy Storage, Guangdong Province, 2018. ( )
The second-class Award of Science and Technology, The Association of Building Materials of China, 2018 ( ).
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(d