Catalog

Staff Profile

Name	Li Xiaohua
Position	Professor
Academic background	1992.09--1996.07 Hunan University, majoring in heating, ventilation and air conditioning engineering, Bachelor of Engineering degree; 2002.09-2007.03 Hunan University, majoring in heating, ventilation and air conditioning engineering, Doctor of Engineering degree 2010.11-2011.11 University of Adelaide, Australia, Postdoctoral fellow 2018.10.1-2018.10.15 Visiting University ofthe Highlands and Islands, UK
Work Experience	1996.07- now Hunan Institute ofEngineering
Recent 5 years of research projects	1. Introduction of Australian experts engaged in heating, gas, ventilation and air conditioning characteristic discipline construction work (2019YZ3016), Hunan Provincial Science and Technology Department, (80,000 yuan) 2. Research on Key Technologies of Preparation and Performance Optimization of Construction Waste Insulation Building Materials Based on BP Neural Network (2021JJ50102), Hunan Natural Science Foundation Committee, (100,000 yuan) 3. Research and Application of Intelligent Production of fabricated aluminum film Components (2022ZYC109), Hunan Provincial Science and Technology Department, (800,000 yuan), 4. Sub-project of Asia Investment Bank - Xiangtan Public Building energy efficiency Management platform research report, and won the Hunan Provincial Development and Reform Commission project (40 million yuan), 2020 5.Xiangtan Municipal Government Offices Administration Technical Support Project (280,000 yuan), 2022

Nearly 5 years of industry cooperation	2009-2015, supported by Xiangtan Yuheng Technology Co., Ltd., the development of high temperature and dust environment special air conditioning won the third prize of Hunan Province invention; 2015-2018, supported by Xiangtan Yufeng New Material Technology Co., Ltd. "Xiangtan Engineering Technology Research Center for Cascade Recycling Development and Utilization of Steel slag"was approved ; 2018-2022, supported by Hunan Yingshuo Building Energy Saving Materials Co., LTD., developed and used of construction waste to produce new self-insulation bricks; The main draftsman of "Technical Regulations for Monitoring and Testing of building carbon Emission" and "Design Standard of Hunan Construction Waste Recycling Plant".
Patents and exclusive rights	1. Method for testing compressive strength of foamed concrete (ZL 2020 1 0031439.6), Invention patent 2. Aerated concrete block and preparation process thereof (ZL 2019 1 1126538.6), Invention patent 3. Construction waste foam concrete and preparation method and application thereof (ZL 2022 10079917.X), invention patent 4. Sepiolite aerated concrete block and preparation process thereof (ZL 2020 1 1177102.2), invention patent 5.A method for predicting the distribution modulus of recycled concrete substrate (ZL 2022 1 0079927.3), invention patent
Important publications	1. Editor-in-chief, *Introduction to Architecture*, Chemical Industry Press, 2013 2. Participated in the compilation of "11th Five-Year Plan" national planning textbooks for General Higher Education, "13th Five-Year Plan" national key publication planning project, "*Ventilation Engineering*", China Machine Industry Press, 2016

Activities in professional associations in the past 5 years	1. Senior Member of Green Building and Energy Conservation Committee, China Urban Research Society, 2024-2029 2. Member of the Teaching Steering Committee of Civil Engineering, Water Conservancy and Marine Engineering, Hunan Province, 2023-2028 3. Evaluation Expert of Xiangtan Government Investment Project, 2018-2021

Staff Profile

Name	Ren Zhenhua
Position	Professor
Academic background	Main research fields: Study on disaster mechanism of building structure and emergency repair and reinforcement. Doctor, Hunan Province Young and middle-aged Science and Technology talents, Hunan Province 121 Innovative talents project candidate, Hunan Province outstanding young backbone teachers; Director of Key Laboratory of Hunan Province, academic leader of "Civil Engineering" in Hunan Province, visiting scholar of The University of Western Australia; Executive Director of Soft Rock Engineering and Deep Disaster Control Branch of China Society of Rock Mechanics and Engineering, Executive Director of Hunan Women Science and Technology Workers Association; Hunan Province Building construction safety technology expert, Hunan Province bid evaluation expert, Hunan Province college student innovation and entrepreneurship college tutor, Hunan Province degree and graduate education advanced individual, Hunan Province graduate ideological and political education and practice "advanced individual". In recent years, he has published more than 50 academic papers (including hot papers and highly cited papers) in "*Construction and Building Materials*", "*Journal of Building Engineering*", "*Journal of Building Structure*" and other high-level journals at home and abroad; Presided over (undertook) 13 national, provincial and ministerial level scientific research projects, presided over (participated in) and completed 5 large-scale scientific research projects commissioned by the enterprise "Key technology research of the Middle Route of South-to-North Water Transfer Project"; Presided over 7 provincial and ministerial level teaching and research projects; Won 1 provincial and ministerial science and technology first

	prize and 2 second prize each, 1 provincial science and technology progress first prize and 3 third prize each, 1 municipal "Youth Science and Technology Award", 1 Geneva International Invention Gold Award, China Industry-University-Research Cooperation Promotion Award (individual award); Won the second prize and the third prize of provincial and ministerial teaching achievements; Published 1 monograph, participated in compiling 2 teaching materials; 12 national invention patents and 11 utility model patents were authorized; And actively transforming achievements, the economic benefit reached 1.005 billion yuan.
Work Experience	2005.07-2009.10 Worked at Henan Polytechnic University 2009.10-2017.05 Taught at Hunan Institute ofEngineering 2017.05-2019.06 Deputy Director (Deputy Director) of Graduate Work Office (Discipline Construction Office), Hunan Institute of Engineering 2019.06-2020.12 Director ofNew Engineering Construction Office (Excellence Program 2.0 Office) 2019.12-now Deputy Director ofHunan Engineering Research Center 2020.12-now Director of Key Laboratory of "Civil Engineering Intelligent Disaster Prevention and Reduction and Ecological Restoration" ofHunan Province 2020.12-2024.04 Director ofGraduate Work Office (Discipline Construction Office, "Double First-class Construction Office") 2024.04-now Dean (Director) of Graduate School (Graduate Work Department)
Nearly 5 years of research projects	1. National Natural Science Foundation of China, 52478311, Research on Prestress degradation Mechanism and Compressive and seismic performance of Three-axis Prestressed Rapid Reinforced circular Section Concrete Column, 2025/01-2028/12,480,000, in research, host. 2. National Natural Science Foundation of China, 51678430,

	Research on Durability Section Performance of Concrete structure, 2017/01-2020/12,620 Yuan, Conclusion, Main Research 3. Hunan Provincial Department of Science and Technology, Hunan Provincial Key Laboratory Project, 2020TP1010, Hunan Provincial Key Laboratory of Civil Engineering Intelligent Disaster Prevention and Reduction and Ecological Restoration, 2020/12-now, 1 million yuan, in research, host 4. Hunan Provincial Talent Work Leading Group, Hunan Science and Technology Innovation and Entrepreneurship Talent Cultivation Plan, Hunan Young and Middle-aged Science and Technology Talent Promotion Project, 2022TJ-Q17, 2022/07- now, 300,000 yuan, in research, host 5. Science and Technology Department of Hunan Province, Surface Project, 2021JJ50106, Research on the Bearing Capacity and seismic Performance of New External Prestressed Reinforced Concrete Beams, 2021/01-2023/12, 100,000 yuan, Conclusion, host 6. Science and Technology Department of Hunan Province, Noodle Project, 2022JJ30193, Research on Key technologies of low-carbon Ecological Concrete Preparation based on Artificial Intelligence, 2022/01- 2024/125,000 yuan, in research, host 7. Hunan Provincial Department of Science and Technology, Hunan Provincial High-level Talent Introduction Program, Huxiang High-level Talent Gathering Project, 2022RC4032, 2023/11-2024/11, 400,000 yuan, in research, host 8. Science and Technology Department of Hunan Province, Innovative Provincial Construction Science Popularization Project, 2022ZK4254, Disaster Prevention and Escape science Popularization Education, 2022/01 -- now, 30,000 yuan, in research, host 9. Hunan Science and Technology Department, Key Research

	and Development Project, 2020SK2109, Research and Development and application of Key Technologies for Intelligent Disaster Prevention and Reduction and ecological Restoration in Civil Engineering, 2020/06- now, 500,000 yuan, professional responsibility 10. Hunan Provincial Development and Reform Commission, Hunan Provincial Engineering Research Center Project, No. 853 of Hunan development and Reform High Technology [2019], Hunan Provincial Engineering Research Center of Structural Disaster and Reinforcement of Dangerous Engineering, 2020/01 - now, 1 million yuan, professional responsibility
Nearly 5 years of industry cooperation	1. Application of results: Online repair and reinforcement of large sick concrete columns without damage of horizontal prestressed steel protection drum, host 2. Application of results: High prestressed carbon fiber reinforcement reinforcement concrete silo technology without unloading, without stopping production, host 3. Application of results: Orthogonal bidirectional prestressed online repair reinforced concrete round pier technology, hosted 4. Transformation of results: a concrete column pre-compressive stress steel casing (utility model patent technology transfer), host 5. Transformation of results: a carbon fiber reinforced plastic composite bar embedded in a concrete beam (transfer of utility model patent technology), host
Patent and exclusive right	1. Ren Zhenhua, Zeng Xiantao. Double prestressed semi-circular steel plate reinforced concrete column method without damage on line, 2018.02.23, China, ZL 2016 1 0897810.0 2. Ren Zhenhua, Zeng Xiantao. Reinforcement method of concrete column with prestressed steel shield and reinforced section enlarging, 2015.10.21, China, ZL 2014 1 0815513.8 3. Zeng Xiantao, Ren Zhenhua. Method for reinforcing

	rectangular section concrete column with bidirectional prestressed Angle steel Plate without damage 2018.02.23, China, ZL 2016 1 0919619.1 4. Ren Zhenhua, Sun Junbo, Zeng Xiantao, Cui Yang, Bi Xuliang, Liang Qiao, Luo Zhang, Liu Zhaofeng, Peng Yifeng. Physicochemically activated glass solid waste concrete and its preparation method, 2021.11.16, ZL 2021 1 0274068.9, China 5. Zeng Xiantao, Zeng Hao, Ren Zhenhua, Chen Xi, Peng Yifeng, Wang Qinyong, Li Shengnan, Zhou Wenquan, Liang Qiao, Luo Zhang, Sun Junbo. A magnetite- intelligent graphite composite phase conductive concrete, 2022.03.03, China, ZL 2021 1 1190299.8 6. Ren Zhenhua, Zeng Xian-Tao, LIU Zhao-feng, Peng Yifeng, Luo Zhang, Liang Qiao, Zeng Hao. A collapse- proof tunnel construction disaster prevention and mitigation structure,2022.03.09, China,ZL 202111213919.5 7. Ren Zhenhua, Zeng Xiantao, Liu Xianglong, Xie Xiaoyu, Liu Yunfu, Zhou Guangyu, Dong Yakui, Luo Zhang, Liu Zhaofeng, Liang Qiao, Wang Jun. Method for Reinforced Concrete pier with Prestressed High performance reinforcement implanted in surface layer, 2022.06.17, ZL 2021 1 1071481.1, China 8. Ren Zhenhua, Zeng Xiantao, Liu Zhaofeng, Xie Xiaoyu, Liu Yunfu, Zhou Guangyu, Dong Yakui, Luo Zhang, Liang Qiao, Zeng Hao. A dyke disaster prevention and mitigation device for automatic water level detection, 2022.7.8, ZL 2021 1 1097174.0, China 9. Ren Zhenhua, Guo Jia, Zeng Xiantao, Liu Yunfu, Fang Lizheng, Zhou Guangyu. A self-compacting conductive concrete, 2023-12-29, China, ZL 2023 1 0432735.0 10. Liang Qiao, Wang Jun, Ren Zhenhua, Liu Jie, Duan Jian, Zhou Wenquan. Construction method of auxiliary middle wall of multi-arch tunnel without central guide tunnel, 2018-08-03,

	China, ZL 2017 1 0061820.5 11. Wang Qinyong, Hong Siwei, Ren Zhenhua, Li Xiaohua, Sun Zhiyong, Cao Jianhui, LIU Guokun, Wang Baiwen, Cui Jian, Lu Naiwei. Collinear double-crack recharacterization methods, Equipment, Storage Media and Products, 2024-07-16, China, ZL 2024 1 0605870.5 12. Wang Qen-yong, Hong Siwei, REN Zhenhua, LI Xiaohua, Sun Zhiyong, Cao Jianhui, Liu Guokun, Wang Baiwen, Cui Jian, Lu Naiwei. Crack growth path Prediction Methods, Equipment, Storage Media and Products, 2024-08-06, China, ZL 2024 1 0609720.1
Important Publications	Monographs: 1. A New Method for the Study of Interface Characteristics of Concrete Beams Reinforced by CFRP, Wuhan University of Technology Press, June 2018 Textbook: 1. Essentials of Compulsory Courses for Civil Engineering Major and Precise Solution of Exercises, Wuhan University of Technology Press, November 2019, editor-in-chief 2. Structural Mechanics, Zhengzhou University Press, December 2012, edited, 60,000 words.
Activities in professional associations in the past 5 years	1. Participated in the Executive director meeting and annual academic conference of Soft Rock Engineering and Deep Disaster Control Branch of Chinese Society of Rock Mechanics and Engineering every year; 2. Attend the Executive director meeting and annual academic conference of Hunan Female Science and Technology Workers Association every year; 3. Participate in the evaluation activities of Hunan Provincial building construction safety technical experts 5-8 times a year.

Staff Profile

Name	Chen Wei
Position	Associate Professor
Academic background	Associate professor, master tutor, academic backbone of Civil engineering discipline, young backbone teacher ofHunan University, excellent doctoral thesis of Hunan Province, high-level-D talents of Xiangtan City
Work Experience	(1) 2013.7 - 2015.8, worked as an engineer in China Communications Construction Group (2) 2022.1 - 2023.12, worked as a lecturer in School of Architectural Engineering, Hunan Institute of Engineering (3) 2024.1 - now, works as an associate professor in the School of Architectural Engineering, Hunan Institute of Engineering
Nearly 5 years of scientific research projects	(1) Rheological failure mechanism of frozen wall in weak bedrock section of offshore shaft under Tidal dynamics, National Natural Science Foundation of China Youth Project, January 2025-December 2027, 300,000 yuan (2) Creep damage and high strength control mechanism of deep pillar under the coupling action of fissure - humidity - Stress, Hunan Natural Science Foundation Youth Project, January 2023 - December 2025, 50,000 (3) Creep-Cracking rule and failure mechanism of pillars in wet mines in Southern China, Outstanding Youth Project of Hunan Provincial Department of Education, Jan. 2023-Dec. 2025, 60,000 yuan

Nearly 5 years of industry cooperation	(1) Research on key technologies of hydration and temperature control in rock tunnel of Wengfu Phosphate Mine, school-enterprise cooperation project, July 2023 - December 2024, 300,000 yuan (2) Research on key mining pressure control technology in open-pit and underground joint Mining, school-enterprise cooperation project, September 2023 - September 2024, 300,000 yuan (3) Research on roadway excavation construction technology of deep mill Wells with weak interlayers, school-enterprise cooperation Project, March 2024 - December 2024, 80,000 yuan
Patents and exclusive rights	(1) Chen Wei, Wan Wen, Wang Xianqing, Tang Xiaoyu, Wu Jin. Installation and construction method of mine silo lining of sliding system below 40 m. China: ZL202010761806.8, Authorization time: 2022-03-22. (Invention Patent) (2) Chen Wei, Wan Wen, Wang Xianqing, Tang Xiaoyu, Wu Jin. Foundation construction method of ore crusher under 40m sliding system engineering. China: ZL202010763447.X, Time of Authorization: 2022-04-01. (Invention Patent) (3) Chen Wei, Wan Wen, Zhao Yanlin, Peng Wenqing, Wang Xianqing, Tang Xiaoyu. Support construction method for ore unloading chamber of sliding system engineering under 40m. China: ZL202010761897.5, Time of Authorization: 2022-03-29. (Invention Patent) (4) Chen Wei, Wan Wen, Xie Senlin. Temperature, humidity and acid environment control simulation device for rock mechanics experiment. China: ZL201920979019.3, Authorization time: 2020-04-03. (Utility model) (5) Chen Wei, Kuang Wenlong, Xiang Shichao. An anti-collision wall template assembly. China: ZL201720202989.3., Authorization time: 2018-02-01. (Utility model)

Important Publications	[1] Chen Wei, Liu Jie, Peng Wenqing, Zhao Yanlin, Luo Shilin, Wan Wen, Wu Qiuhong, Wang Yuanzeng, Li Shengnan, Tang Xiaoyu, Zeng Xiantao, Wu Xiaofan, Zhou Yu and Xie Senlin (2023) Aging deterioration of mechanical properties on coal- rock combinations considering hydro-chemical corrosion. Energy 282: 128770. (SCI Div. 1 TOP). [2] Chen Wei, Liu Jie, Liu Wei, Peng Wenqing, Zhao Yanlin, Wu Qiuhong, Wang Yuanzeng, Wan Wen, Li Shengnan, Peng Huihua, Zeng Xiantao, Wu Xiaofan, Zhou Yu and Xie Senlin (2023) Lateral deformation and acoustic emission characteristics of dam bedrock under various river flow scouring rates. Journal of Materials Research and Technology 26: 3245-3271. (SCI Division I TOP). [3] Chen Wei, Wan Wen, He Huan, Liao Dunxia and Liu Jie (2024) Temperature field distribution and numerical simulation of improved freezing scheme for shafts in loose and soft stratum. Rock Mechanics and Rock Engineering 57, 2695-2725 (2024). (SCI Div. 2 TOP) [4] Chen Wei, Wan Wen, Zhao Yanlin, He Huan, Wu Qiuhong, Zhou Yu and Xie Senlin (2022) Mechanical damage evolution and mechanism of sandstone with prefabricated parallel double fissures under high-humidity condition. Bulletin of Engineering Geology and the Environment 81(6): 245. (SCI Div II) [5] Chen Wei, Wan Wen, Zhao Yanlin, Xie Senlin, Jiao Bing, Dong Zhenming, Wang Xianqing and Lian Shuailong (2020) Aging features and strength model of diorite's damage considering acidization. Frontiers in Physics 8(455): 553643. (Included in SCI) [6] Chen Wei, Wan Wen, Xie Senlin, Kuang Wenlong, Peng Wenqing, Wu Qiuhong, Tong Shasha, Wang Xianqing and Tang Xiaoyu (2020) Features and constitutive model of gypsum's uniaxial creep damage considering acidization.

	Geofluids 2020: 8874403. (Included in SCI) [7] Chen Wei, Peng Wenqing, Wan Wen, Wang Xianqing, Wu Qiuhong, Zhou Yu and Xie Senlin (2022) Uniaxial compression damage mechanical properties and mechanisms of dolomite under deep high-humidity condition. Frontiers in Materials 9: 812738. (Included in SCI) [8] Chen Wei, Wu Li, Zeng Zhi, Wan Wen, Liu Jie, Wu Xiaofan, Peng Wenqing, Zeng Xiantao, Ren Zhenhua, Xie Senlin and Zhou Yu (2022) Research on uniaxial compression mechanics of diorite under flowing acidic solution scouring. Minerals 12(6): 770. (Included by SCI) [9] Chen Wei, Wan Wen and Peng Wenqing (2021) Prediction of rock mass rating using neural network with an improved rider optimization algorithm. Evolutionary Intelligence 21(606): 1- 13. (EI) [10] Chen Wei, Wan Wen, Zhao Yanlin, Wu Qiuhong, He Huan, Peng Wenqing, Wu Xiaofan, Zhou Yu, Wu Li and Xie Senlin (2022) Experimental study on damage properties of granites under flowing acid solution. Frontiers in Earth Science 10: 927159. (Included in SCI) [11] Chen Wei, Wan Wen, Zhao Yanlin and Peng Wenqing (2020) Experimental study of the crack predominance of rock-like material containing parallel double fissures under uniaxial compression. Sustainability 12(12): 5188. (Included in SCI) [12] Chen Wei, Wan Wen, Lian Shuailong, Xie Senlin, Zhou Yu, Peng Wenqing, Kuang Wenlong, Wang Xianqing and Tong Shasha (2020) Mechanical properties and failure modes of thick-walled cylinder granites with different apertures under triaxial compression. Advances in Civil Engineering 2020: 8897086. (Included in SCI) [13] Chen Wei, Wan Wen, Feng Tao, Zhao Yan-Lin, Wu QiU-Hong, Zhou Yu, Xie Silin (2021) Mechanical characteristics of skarn under different humidity and stress states in the tunnel mining area of Wengfu phosphate Mine. Chinese Journal of

	Rock Mechanics and Engineering, 40(12): 2510-2525. (Included by the Excellence Program EI) [14] Chen Wei, Wan Wen, Feng Tao, Wang Weijun, Zhao Yanlin, Wu Qiuhong (2022) Macro and micro mechanisms of the influence of high humidity environment on the mechanical properties of dolomite expansion. Journal of China Coal Society, 47(11): 4023-4039. (Included by Excellence Program EI) [15] Chen Wei, Wan Wen, Wang Weijun, Feng Tao, Zhao Yan-Lin, Wu QiU-Hong, Zhou Yu (2023) Mechanical characteristics and numerical simulation of powdery dolomite under the influence of environmental humidity. Journal of China Coal Society, 48(3): 1220-1237. (Included by Excellence Program EI) [16] Chen W, Wan W, Zhao YL, Wang W J, Wu Q H, Wu X F, Xie S L (2021) Uniaxial compression failure and crack propagation characteristics of parallel double-fracture sandstone in high humidity environment. Journal of Rock and Soil Engineering, 43(11): 2094-2104. (EI)
Activities in professional associations in the last 5 years	Attended the annual meeting of Hunan Society of Rock Mechanics in 2021, 2022 and 2023

Staff Profile

Name	Luo Hongguang
Position	Professor, Deputy Director of the Department of Civil Engineering
Academic background	2008 - 2011, doctoral candidate, Structural Engineering at Wuhan University 2005-2008, master student, Structural Engineering, Xiangtan University 1992- 1996, undergraduate student, Architectural Engineering at Zhejiang University
Work experience	2014 - now, Hunan Institute of engineering, professional teacher 2011-2014, Professional teacher, China Three Gorges University 1996-2005, staff member of Sinopec Shanghai Gaoqiao Branch
Nearly 5 years of scientific research projects	Luo Hongguang. Hunan Province first-class undergraduate course "Steel Structure Design" project.2021, host Luo Hongguang. Teaching Reform and Practice of Civil Engineering Structural Design Course for Applied undergraduate based on OBE Concept, Research Project of Ordinary Colleges and Universities in Hunan Province (Project Number: HNJG-2022-0970).2022, Host Presided over the horizontal project "Optimal Design and Application Research of Building Structural Support", with the project fund of 140,000 yuan in 2023.
Nearly 5 years of industry cooperation	Presided over the horizontal project "Optimal Design and Application Research of Building Structural Support", with the project fund of 140,000 yuan in 2023.
Patents and exclusive rights	no
Important publications	Luo Hongguang (Ed.). Design Principle of Steel Structure [M]. Hunan Normal University Press.2018. Luo Hongguang. Calculation and Teaching Enlightenment of

	Steel beam with Trapezoidal Corrugated Web [M]. Xiangtan University Press.2023. Luo Hongguang. Calculation of Elastic Distortion Buckling of Cold-formed Thin-wall flanged channel Steel [M]. Xiangtan University Press.2023.
Activities in professional associations in the past 5 years	Expert in Hunan Province Building construction safety Technology Expert database

Staff Profile

Name	Liang Qiao
Duties	Professor
Academic background	2000.9 - 2004.6, School of Civil Engineering, Hunan University of Science and Technology , bachelor's degree. 2004.9-2007.7, School of Civil Engineering, Lanzhou Jiaotong University, master'sdegree. 2012.9-2017.12, School of Civil Engineering, Central South University , Doctor'sdegree.
Work Experience	2007.07~2010.09 Assistant Professor of Hunan Institute of Engineering 2010.09~2017.11 Lecturer, Hunan Institute of Engineering 2017.11~2023.12 Associate Professor, Hunan Institute of Engineering 2023.12~ now Professor, Hunan Institute of Engineering
Recent 5 years of research projects	1. Research on deformation and reinforcement control of tunnel construction with innovative Method based on model test, Hunan Provincial Science and Technology Department, 2022-2024,No.1; 2. Study on Circular penetration of tunnel face and Stability of advanced Core soil, Key project of Hunan Provincial Department of Education, 2020-2022, No.1;
Nearly 5 years of industry cooperation	1, New agricultural waste plant and parking apron uneven settlement analysis and equipment basic treatment measures, 2019.11-2020.12, 100,000 yuan
Patents and exclusive rights	1. Utility model patent: negative pressure micro biological grouting device, 2022 2. Invention patent: A test device and method for advanced core soil reinforcement for tunnel novelty method, 2024
Important Publications	[1] Qiao Liang, Jie Liu, Jun Wang, Xian-Tao Zeng, and Shuo-Guo Wu.Three- Dimensional Stability of Cyclical Footage Area in Tunnel Face[J].KSCE Journal of Civil Engineering.2022(2):955-965.DOI 10.1007/s12205-021-

	0600-1. [2] Liang, Q., Xu, J. & Wei,Y. Three-dimensional stability analysis of tunnel face based on unified strength theory. *Sci Rep* 13, 12326 (2023). https://doi.org/10.1038/s41598-023-39554-z
Activities in professional associations in the last 5 years	1 .Member of surveying and mapping Science and Technology Education Working Committee of Hunan Surveying and Mapping and Geographic Information Society 2 .Xiangtan science and technology innovation think tank expert

Staff Profile

Name	Wang Jun
Position	Professor, Deputy Director, Logistics Infrastructure Division
Academic background	Ph.D. in geotechnical mechanics and geotechnical engineering. Ranked first and won the provincial Science and Technology Progress third prize, the first author published more than 50 academic papers, including SCI, EI included 16, CSCD core journals 10, presided over the provincial natural science fund project and other provincial topics 5, among 9 patents ranked first authorized , including 6 invention patents.
Work experience	2010,3-now teaching at School ofArchitectural Engineering, Hunan Institute ofEngineering
Nearly 5 years of scientific research projects	Hunan Provincial Natural Science Foundation Project (2019JJ40056) : Study on the aging mechanical properties and stability reliability of rock and soil materials affected by flood, presided over, concluded in 2021
Nearly 5 years of industry cooperation	Technical and management work of construction building, textile training building, Science and technology innovation building and other new projects ofHunan Institute of Engineering, docking survey, construction agent, design, construction and other units.
Patents and exclusive rights	[1] Wang Jun, Qin Min, Ou Rongzi, Liang Qiao, Xie Tingting, Liu Jie, Tan Yun, Jiang Xiaotie, Kang Jianbin, Xiang Jun, Nie Zhipeng. A construction method for plugging and repairing bank dam collapse, ZL202011107126.0. 2023 Invention patent authorization [2]Wang Jun , Gong Dingyu, Liu Lin, Liang Qiao, Nie Zhipeng, Ouyang Xiangsen, Peng Huihua. A method for detecting damage and repairing leakage of water supply plastic pipe under land covering, ZL202111367706.8 Invention patent authorized in 2023 [3] Wang Jun , Qin Min, Ou Rongzi, Liang Qiao, XieTingting, Liu Jie, Tan Yun, Jiang Xiaotie, Kang Jianbin, Xiang

	Jun, Nie Zhipeng. A fast location monitoring system and method for dike leakage channel, ZL 202011107131.1 The invention patent is granted in 2022 [4] Wang Jun, Liang Qiao, LIU Jie, Duan Jian, Ouyang Xiangsen, Liu Lin, Zou Hongbo, Jiang Yanxu. A strengthening method for quick repair of high and steep landslide,ZL202010058280.7 Invention patent granted in 2021 [5] Wang Jun, LIANG Qiao, Liu Jie, Duan Jian, Ouyang Xiangsen, Liu Lin, ZOU Hongbo, Jiang Yanxu. A method for determining anchorage force of soil layer anchor rod in the process of Water level Change,ZL202010061125.0 Invention patent granted in 2021.
Important Publications	[1] Jun Wang, Lin Liu,Ping Cao. Effect soil creep on bearing characteristics of CFRP and anti-slide piles reinforced soil slope, Coatings, 2023,13,1-12. SCI [2] Jun Wang, Zhipeng Nie, Min Qin , Ping Cao, and Junqing Du. Coupling Characteristics of Creep Fracture of Rock Foundation on Wind Turbine under Wind Induced Vibration, Energies,2022, 15,3862,1-15. SCI [3] Jun Wang, JunjieXu , Zhipeng Nie , Lin Liu, Min Qin , Rongzi OU. Creep fracture characteristics of fractured rock mass strengthened with toughened epoxy resin, Advances in civil engineering,2021, 1582745,1-8. SCI [4] Jun Wang, Zhipeng Nie, Jie Li1, Min Qin, Rongzi OU. Analysis of fracture reliability of anti-slide deep pile reinforced slope under flood effect, Environment Earth Science,2021,80, 517,1-12. SCI [5] Jun Wang,Jie Liu and Qiao Liang. Internal Force of the Anti-Slide Pile in Soil Based on the Deep Beam Model, KSCE Journal of Civil Engineering, 2021,25,782-792. SCI
Activity in professional associations in the last 5 years	

Staff Profile

Name	Xiao Alin
Position	Associate Professor
Academic background	1999.9-2003.6 Majored in Civil Engineering, Chongqing Jiaotong University, bachelor's degree; 2003.9-2009.12 Studied Structural Engineering in Hunan University for a PhD (direct doctoral degree)
Work experience	2009.8-2012.4 Worked in Changsha Bureau of Housing and Urban-Rural Development; 2012.4-2012.11 Worked in Hunan Yuanda Construction Co., LTD. 2012.11-2017.9 Worked in Changsha Fengsheng Real Estate Co., LTD. 2017.9-2020.9 worked in Zhuyou Zhizao Construction Technology Group Co., LTD. 2020.10-2022.7 Worked in Sany Group Co., LTD.; Now working in Hunan Institute of Engineering.
Nearly 5 years of scientific research projects	Presided over Hunan Industrial Construction Engineering Technology Research Center, Hunan Engineering College of Provincial Department of Education - Xiangtan Zhuyou Intelligent Technology Co., LTD. School-enterprise Cooperation Innovation and Entrepreneurship Education Base, Provincial Teaching Research and Reform key project (Exploration and practice of Intelligent Construction professional talent training Mode in applied undergraduate colleges), Provincial Science Research key project (Edge composite floor collaborative stress under the action of horizontal forces Performance research).
Nearly 5 years of industry collaboration	
Patents and	Invention patents ("A vertical construction node of a

exclusive rights	prefabricated component and its construction method", "a sealing device for the joint of an adjacent vertical component" , "a sealing plate and a sealing device for connecting a silo with a grout sleeve").
Important publications	
Activity in professional associations in the last 5 years	Served as a member of Hunan Provincial Housing Industrialization Expert Committee and Hunan Provincial Engineering Construction local Standardization Expert Committee

Staff Profile

name	Zhou Wenquan
Position	Lecturer
Academic background	Presided over 3 scientific research projects at provincial and ministerial level and above, and participated in 2 national projects. Published more than 10 academic papers in well-known journals at home and abroad, two of which were selected as F5000 papers. Obtained 2 national invention patents. Won the first prize of the Invention and Entrepreneurship Achievement Award of China Invention Association. As a bidding expert of Hunan Provincial government, he has completed the evaluation of more than 10 construction projects in Hunan Province.
Work Experience	1998.9 - 2002.6 Road and Bridge Engineering major, Central South University of Forestry and Technology; 2002.7 -- 2004.8 worked in China Railway Bridge Bureau Group; 2004.9 -- 2007.6 studied Geotechnical engineering in Central South University of Forestry and Technology; 2007.7 -- now, worked in Hunan Institute of Engineering.
Nearly 5 years of Scientific research projects	1. Education Reform Project of Hunan Provincial Department of Education (202401001216) : Exploration of Practical Ability Training Mode of Civil Engineering Applied Talents under the background of New engineering, 2024.6.1-2026.6.1 2. The Third Supply and Demand Matching Employment Education Project of the Ministry of Education (2024010454034) : Construction of Employment education Base for Civil engineering majors in applied universities, 2024.3.8-2027.3.8 3. Scientific Research Project/Key Project of Hunan Provincial Department of Education (21A0462) : Study on Static and Dynamic Performance and Evaluation of Coarse-grained soil fillers for Heavy-haul railway Roadbed, 2021.12.15-

	2024.12.15
Industry cooperation in the past 5 years	1. Horizontal project: New capillary drainage material technology research and development (20H207JG), to the account of 850,000, 2020.9.20-2022.9.19; 2. Horizontal project: Research and development of lightweight foamed asphalt concrete (20H173JG), to the account 775,000, 2020.9.20-2022.9.20; 3. Horizontal project: Floor reinforcement design of Changsha Hansen Purification Equipment Co., LTD. (19HJG413), to the account of 30,000, 2019.9.1- 2021.9.1
Patent and exclusive right	1. Invention patent: a rapid reinforcement device for embankment protection of river dam, patent authorization number: ZL202010719791.9; 2. Invention patent: a test device and method for advanced core soil reinforcement in tunnel novelty method, patent license number: ZL202111191897.7; 3. Utility model patent: a test device for strengthening advanced core soil for tunnel novelty method, patent authorization number: ZL202122464707.6
Important Publications	Paper: Prediction model and application of coarse soil fill cumulative deformation in heavy haul railway, Journal of Railway Science, 2019.11
Activities in professional associations in the past 5 years	Registered road engineer, Hunan Provincial comprehensive bid evaluation database bid evaluation expert; Award: Technological innovation and Engineering application of Green Construction and rapid reinforcement of new structures and new materials for Bridges and tunnels on transportation lines (First Prize of Invention Award), 2022.10

Staff Profile

Name	Xie Ying
Duties	Lecturer
Academic background	Presided over 1 scientific research project at or above provincial and ministerial level, participated in 3 national projects, participated in 2 major projects of China Railway Corporation, published many academic papers in well-known journals at home and abroad, and won 1 special prize and 1 first prize of Science and Technology Award of China Railway Association.
Work Experience	2019.9 - now, work in Hunan Institute of Engineering.
Nearly 5 years of scientific research projects	1. 2024.3.29-2026.12.31, Youth Project of Hunan Natural Science Foundation (2024JJ6182) : Fatigue Performance and State Evaluation of CRTSIII Plate-type Ballastless Track Structure of high-speed railway under Train load and Temperature, 2. 2023.1.1- 2024.12.31, General Project of Hunan Provincial Department of Education (22C0418) : Research on Fatigue Performance and Life Prediction of CRTSIII Plate-type Ballastless Track Structure,
Nearly 5 years of industry cooperation	1. 2022.9-2023.12, Horizontal project: Preparation of aerated concrete for light insulation composite wall, 2. 2020.12-2021.12, Horizontal project: Optimization Design and Application of the structure of Rome Leo Porcelain Stone Living Beauty Academy,;
Patents and exclusive rights	
Important Publications	[1] A Static Damage Constitutive Model of Concrete Based on Microscopic Damage Mechanism, Materials, 2024.1(SCI) [2] Damage Quantification in Concrete under Fatigue Loading Using Acoustic Emission, Journal of Sensors, 2019, 2019 (SCI) [3] Research on Mechanical Performance of CRTS III Plate

	Type Ballastless Track Structure under Temperature Load Based on Probability Statistics, Advances in Civil Engineering, 2019, 2019(SCI) [4] Fatigue Performance of CRTS III Slab Ballastless Track Structure under High-speed Train Load Based on Concrete Fatigue Damage Constitutive Law, Journal of Advanced Concrete Technology, 2018, 16: 233-249(SCI)
Activity in professional	Time Performance Calculation Theory and Reliability Evaluation of Trackless Bridge System for high-speed
associations over the past 5 years	Railway, First Prize of Science and Technology Award of China Railway Society, 2020.12

Staff Profile

Name	Liu Guokun
Position	Associate Professor
Academic background	Received bachelor's degree in Civil engineering from Chengnan College of Changsha University of Science and Technology, master's degree in Architecture and Civil engineering from Kunming University of Science and Technology, and Doctor's degree in Civil engineering from Changsha University of Science and Technology. Main research interests include construction control, health monitoring and testing of long-span Bridges. Expert of Hunan Provincial Transportation Construction Quality and Safety Society Test Testing and Monitoring Professional Committee, expert of Heilongjiang Province Science and Technology Expert Database, expert of Hunan Province science and Technology expert database, expert of CNKI Review expert database.
Work Experience	2018.5-2022.7, Hunan Transportation Research Institute Co., LTD.; 2022.7-now, Hunan Institute of Engineering.
Research project for nearly 5 years	2022-now, Hunan Provincial Department of Education Youqing Project, No. 22B0737, research on damage identification and digital twin modeling methods of cable-stayed Bridges based on health monitoring data. 2021-now, Science and Technology Project of Hunan Provincial Department of Transportation, No. 202105, Technical Regulations for Detecting Effective Prestress under anchors of Highway Bridges. 2023-now, horizontal scientific research project No. 21941, BIM technology research of Xuwei Port Integrated pipe network Project. 2022-2024.12, horizontal research project No. 21702, Structural monitoring of Jiayu Yangtze River Bridge during

	operation.
Nearly 5 years of industry cooperation	As the person in charge ofthe bridge project, he was responsible for the science and technology special planning and standard special planning in the " 14th Five-Year Plan" of Hunan Provincial transportation, the standardization guide of Hunan Provincial Highway Safety hundred years quality engineering and the preparation ofprestressed quality improvement ofHunan Provincial highway engineering. As the person in charge ofthe site, responsible for the steel structure inspection and load test of South Dongting Lake (Shengtian) bridge; The completion acceptance of Hanggrui Dongting Lake Bridge; Hunan Province cancelled the steel structure inspection section ofthe provincial boundary toll station; Steel structure inspection ofYuanshui Bridge in Dongting River; The steel structure inspection of 18 Bridges in Pingtang section ofGuiping Expressway; Construction monitoring ofGuanyinsi Bridge in Hubei province.
Patents and exclusive rights	More than 20 patents and more than 10 software Copyrights have been authorized.
Important Publications	Highway Engineering and Project Management, Third Editor-in-Chief, Eno Science Press.
Activities in professional associations over the past 5 years	In 2022, won the honorary titles ofAdvanced Individual of Hunan Highway Society, Advanced Individual ofHunan Inspection and Testing Society, and trumpeter ofthe 22nd Hunan Communist Youth League Youth Civilization Number. Won the third prize of scientific and technological Progress of China Highway Society (the 3rd), the first prize ofHunan Highway Society (the 3rd) and other scientific and technological awards.

Staff Profile

Name	Duan Jian
Position	Associate Professor, Deputy director ofthe teaching and Research section
Academic background	(1) 1998.09-2002.06, Central South University ofForestry and Technology, Civil Engineering, Bachelor ofEngineering; (2) 2002.09-2005.06, Central South University ofForestry and Technology, Geotechnical Engineering, Master of Engineering; (3) 2009.09-2014.06, Lanzhou University, Geological Engineering, Doctor ofEngineering.
Work Experience	(1) 2005.07-2007.10, Zhuzhou Planning and Design Institute, engaged in municipal engineering design; (2) 2007.11-2016.05, Lanzhou University, engaged in teaching and research; (3) June 2016, Hunan Institute ofEngineering, engaged in teaching and research work.
Nearly 5 years of scientific research projects	(1) Hunan Provincial Department of Education, Outstanding Youth Project, 19B125, Research on the scattering Law of Multistage lattice anchor Side Slope and its Disaster evolution Mechanism, 2019-09 to 2022-88, 60,000 yuan, completed, host; (2) National Natural Science Foundation ofChina, Youth Project, 51308273, Study on Load transfer law and failure Mode of Stratified rock bolt anchoring System, 2014-01 to 2016-12,250 yuan, completed, host.
Nearly 5 years of industry cooperation	(1) Optimization and analysis ofbasic engineering ofBlue Valley Town, Zhuzhou Branch of Beijing Qingda Origin Architecture Design Co., LTD.; (2) Research and development ofkey technologies and applications ofHighway waste concrete subgrade filling, Hunan Dading Engineering Technology Co., LTD.; (3) Research and development ofcomposite stiffened cement soil pile deep foundation pit support technology and application, Hunan Dading Engineering Technology Co., LTD.

Patent and exclusive right	
Important Publications	(1) Duan Jian, Zhou Wenquan, Peng Huihua, et al. Disease investigation and treatment ofunderground civil air defense cavern in urban area [J]. Journal ofHunan Institute of Engineering (Natural Science), 2023, 33(3): 71-78; (2) Yan Zhixin, Duan Jian, Wang Houyu. Slope stability and support [M]. Beijing: Science Press, 2018; (3) Duan Jian, Yan Zhixin, Liu Zizhen. Analysis of free vibration characteristics of full-length bonded anchor for slope [J]. Journal ofCivil Engineering, 2015, 48(11): 111- 118.
Activities in professional associations in the past 5 years	As a geotechnical engineering and municipal engineering evaluation expert, he has completed more than 50 construction project design and construction special evaluation.

Staff Profile

Name	Li Yu
Duties	Lecturer
Academic background	Li Yu,male, born in 1990 in Yueyang, Hunan Province, member of the Communist Party of China, Doctor, teacher of School of Architectural Engineering, Hunan Institute of Engineering. In 2022, he graduated from School of Civil Engineering, Changsha University of Science and Technology, majoring in Civil engineering, and received his Doctor degree in engineering. He is mainly engaged in geotechnical engineering teaching and research. Presided over 1 provincial scientific research project, participated in 3 National Natural Science Foundation projects, he has published more than 20 papers in domestic and foreign journals suchas Journal of Rock Mechanics and Engineering, Rock and Soil Mechanics, China Highway Journal, Bulletin of Engineering Geology and the Environment, and has authorized 1 invention patent and 3 utility model patents. His research achievements won one third prize of Hunan Science and Technology Progress Award.
Work Experience	2022.6 --now, Lecturer, School of Architectural Engineering, Hunan Institute of Engineering
Recent 5 years of research projects	**Main projects presided over and participated in:** [1] Excellent Youth Project of Hunan Provincial Department of Education (Project No. : 24B0675), Study on Dynamic mechanical properties and damage mechanism of sandstone after dry and wet cycling and unloading, 2024.8-2027.8, Host. [2]Hunan Graduate Student Innovation Project (CX20190657), Research on crack propagation and evolution mechanism of carboniferous mudstone cutting slope under dry and wet cycling, Conclusion, Host. [3] Project of the National Natural Science Foundation of China (Project number: 51474103), Study on creep damage mechanism and stability of carboniferous mudstone cutting

	slope under dry-wet and freeze-thaw cycles, participated.
Industry cooperation in the past 5 years	[1] Youxian Jiubu River scenic bridge tunnel and connection line project No. 2 tunnel monitoring; [2] Zhuzhou City North Ring Road D section foundation pile testing project; [3] Foundation pit monitoring ofthe first phase of Integrated transportation Hub of East Square of Zhuzhou Railway Station; [4] Zhuzhou Xiangshi Square underground tunnel engineering foundation pit monitoring.
Patent and exclusive right	**Authorized patents:** [1] **Li Yu**, Zhao Fujun, Zhang Mengju, et al. An experimental device for electromagnetic radiation characteristics of rock breaking under dynamic load [P]. Hunan: CN201621374832.0. [2] **Li Yu**, Zhao Fujun, Ye Zhouyuan, et al. An experimental device for rock impingement - static - Hydraulic Coupling splitting tensile failure [P]. Hunan: CN201621389018.6.
Important publications	**Research papers:** [1] Liu Xinxi, Li Yu, Weiwei Wang. Study on mechanical properties and energy characteristics of carbonaceous shale with different fissure angles under dry-wet cycles[J]. Bulletin of Engineering Geology and the Environment, 2022, 81(8): 1- 12. [2] Liu Xinxi, Li Yu, Wang Wei-Wei, et al. Study on mechanical properties and strength criteria of precast fissure carbonaceous shale under dry-wet cycling [J]. Chinese Journal of Rock Mechanics and Engineering, 2022, 41 (02): 228-239. [3] Liu Xinxi, Li Yu, Fan Zijian, et al. Study on energy evolution and failure characteristics of single-fissure carbonaceous shale under dry-wet cycle [J]. Rock and Soil Mechanics, 2022, 43 (07): 1761-1771. [4] Xinxi Liu, Li Yu, Fujun Zhao, et al. Experimental Research on Mechanical and Energy Characteristics of Reinforced Rock under Dynamic Loading[J]. Shock and Vibration, 2019, 2019(2): 1-11. [5] Xinxi Liu, Li Yu, Shengnan Li, et al. Research on the disintegration characteristics of carbonaceous mudstone and

	properties of modified materials[J]. Advances in Civil Engineering, 2019, 2019(1): 1-10. [6] Li Yu, Zhao Fujun, Wang Bin, et al. Experimental study on acoustic emission Fractal characteristics of rock breaking by Tool pressing [J]. Journal of Hunan University of Science and Technology (Natural Science Edition), 2018,33 (01): 10-15. [7] Li Yu, Zhao Fujun, Chen Ke, et al. Theoretical analysis and numerical simulation of acoustic emission energy for tool rock breaking [J]. Mining Research and Development, 2017,37 (10): 62-66.
Activities in professional associations in the past 5 years	[1] Participated in the 42nd International Conference on Mining Rock Formation Control (2023) [2] Attended the 2023 academic annual meeting of Hunan Society of Rock Mechanics and Engineering

Staff Profile

Name	Liao Jian
Position	Lecturer
Academic background	Lecturer, School of Architectural Engineering, Hunan Institute of Engineering. Mainly engaged in rock material seepage and geological disaster prevention and control. Presided over one outstanding Youth project of Scientific research project of Hunan Provincial Department of Education (in research); Participated in 1 National Natural Science Foundation project (in research); Participated in and completed 1 National Natural Science Foundation Youth Science Foundation project; Participated in a number of projects entrusted by enterprises; The first author published 2 papers in SCI and EI journals, and the second and corresponding author published 2 papers in SCI and EI journals; 5 authorized patents; 3 authorized software Copyrights; Won the National Scholarship for doctoral students in 2021; 2023 Excellent doctoral candidate of Hunan Province; Won the first prize of Green Mine Science and Technology Award (ranked 7th) and the second prize of China Coal Industry Science and Technology Award (ranked 5th); Undertook the teaching work of Engineering Economics, Fluid Mechanics and other undergraduate courses.
Work Experience	2023.7 - now, Lecturer, School of Architectural Engineering, Hunan Institute of Engineering
Research project for nearly 5 years	1. Study on Seepage and Mechanical Properties of water-blocking Reinforced Structure with curtain grouting in Fushui Bedrock Section, 2024, Outstanding Youth Project of Scientific Research Project of Hunan Provincial Department of Education (No. : 24B0682), Presided over 2. Collaborative load-bearing andrheological fracture mechanism of wall-curtain grouting body and surrounding rock in water-rich bedrock section of deep shaft, 2022, National Natural Science Foundation of China (No. : 52274118),

	participated 3. Surface crack evolution and rock breaking mechanism of rock mass under bidirectional stress under hob action, 2019, National Natural Science Foundation of China (No. : 51804110), Participate
Industry cooperation in the past 5 years	1. 2023.7-now, Highway tunnel 3D numerical calculation and analysis technical services, participation 2. 2019-2021, Head of site, Fuqing Highway Shiniuling Tunnel Advanced Geological Forecast and Monitoring Measurement Project, Engineering Testing Center, Hunan University of Science and Technology 3. Zitai Slope stability analysis and support Design of Daoxian County, 2020, Participate 4. Research and Application of chemical grouting technology for Slope Engineering,2020, Participate 5. Study on quantitative correlation between shear properties of rock joint and surface topography of slope,2020, participate
Patents and Exclusive rights	
Important Publications	1. Liao Jian, Zhao Yanlin. Experimental study on shear strength characteristics of limestone under acidification corrosion [J]. Journal of Mining and Safety Engineering,2020. 2. Jian Liao, Yanlin Zhao. Experimental studies on cracking and local strain behaviors of rock-like materials with a single hole before and after reinforcement under biaxial compression. Geofluids. 2021. 3. Zhao Yanlin, Liao Jian. Comparison of mechanical properties of perforated sandstone underwater- force coupling and isolation [J]. Journal of China Coal Society,2020. 4. Yanlin Zhao, Jian Liao, Yixian Wang , Qiang Liu, Hang Lin . Crack coalescence patterns and local strain behaviors near

	flaw tip for rock-like material containing two flaws subjected tobiaxial compression. Arabian Journal of Geosciences, 2020. 5. Yanlin Zhao, Jian Liao. Linkage analysis between solid-fluid coupling and the strength reduction method for karst cave water inrush in mines. Shock and Vibration. 2020.
Activities in professional associations over the past 5 years	1. National Conference on Coal Mine Safety, Colleges and Universities, New Progress of Green Mining and Support Technology, 2024 2. The 21st Chinese Annual Conference on Rock Mechanics and Engineering,2024 3. The 7th International Conference on Earthquake Mitigation and Engineering Innovation of Bridge Structures, 2024

Staff Profile

Name	Luo Zhang
Duties	Professor
Academic background	Professor, Doctor of Engineering. He has presided over 5 provincial and ministerial level projects and 2 projects entrusted by enterprises. He has applied for 2 national invention patents, 1 authorized, 4 authorized utility model patents, and published more than 30 papers, including 1 paper included in SCI journals and 4 in EI. He has published 2 monographs and edited 5 textbooks.
Work experience	1992.8---1997.8, Assistant engineer, Hengyang Second Construction Company 1997.9 -- 2000.3, Master of Solid Mechanics, Central South University 2000.9 -- 2004.5, Doctor of Safety Technology and Engineering, Central South University 2003.12 -- 2006.9, Lecturer, Hunan Institute of Engineering 2006.10 -- 2021.11, Associate Professor, Hunan Institute of Engineering ; 2021.12 - now Hunan Institute of Engineering, Professor
Nearly 5 years of research projects	Key Projects of Hunan Provincial Department of Education (19A114) : Study on the constitutive relationship of aggregate concrete for urban Solid Waste, 2019, 9-2022, 12, Received fund: 80,000 Yuan.
Nearly 5 years of industry cooperation	1, Hengyang Baisai Chemical Industry Co., LTD. Horizontal research project: chemical production water reservoir green anti-seepage key technology development, 2017 10-2019, 10, to the account of funds: 80,000 yuan. 2, Jiangsu Huaibo Shield Engineering Co., LTD. Horizontal scientific research project: urban solid waste aggregate concrete technology development, 2019,10~2024,10,to the account fund: 1.91 million yuan.
Patent and exclusive	1.Invention Patent ZL 2012 1 0244777.3: Polystyrene foam

right	aggregate concrete insulation block, January 2015 2. Utility model patent ZL 2017 2 0692480.1: a kind of urban public garbage bin, January 2018 3. Utility model patent, ZL 2017 2 0806362.9: An urban concrete curb, April 2018 4 、 Utility model patent ZL 2017 2 0692522.1: a foam concrete block mold, April 2018 5 、 Utility model patent ZL 2017 2 0806833.6: a simple concrete block combination mold, June 2018
Important Publications	**Published monographs (3 volumes)** 1. Luo Zhang, Wang Jun, Crack Damage and steel fiber reinforced Concrete, [M] Harbin Institute of Technology Press, 2017,10 **(312,000 words)** 2, Wang Jun, Luo Zhang, Slope Stability Analysis of creep seepage hydrochemistry, Wuhan University of Technology Press [M] Wuhan University of Technology Press, 2017,08 3, Wang Jun, Luo Zhang, Mechanical Properties and aging Bearing Stability Analysis of anchored rock and soil, [M] Chemical Industry Press, 2020,09 **Published Papers (9)** 1. LUO Zhang, LI Xi-bing, ZHAO Fu-jun, Complete splitting process of steel fiber reinforced concrete at intermediate strain rate, [J]Journal of Central South University of Technology, 2008, 08 **(SCI/EI, Region III)** 2. LUO Zhang, LI Xi-bing, Experimental study on the low velocity impact of steel fiber reinforced concrete, [J]Journal of Civil Engineering and Architecture, 2008, 02 (USA) 3, Luo Zhang, Study on dynamic performance of short steel fiber reinforced concrete, [J] Mining Research and Development, 2010,10 (Peking University Chinese Core) 4.Luo Zhang, Ou Mingxian, Research on Teaching Quality Assurance System of Adult Education for Civil Engineering Majors [J] Journal of Yangzhou University, 2010,06 (Peking University Chinese Core)

	5. Luo Zhang, Tang Liang, Ou Mingxian, Discussion on the Reform of Practical Teaching Link of Civil Engineering Major [J] Journal of Yangzhou University, 2010,10 (Peking University Chinese Core) 6, Luo Zhang,Experimental Study on Rate-dependent ofthe Bending Tensile Properties for steel fiber reinforced concrete, [J]Applied Mechanics and Materials, 2011, 08 (EI) 7.Luo Zhang, Experimental Study on Mixed-mode Fracture for Concrete, [J]Applied Mechanics and Materials,2012,11 (EI) 8. Luo Zhang, Yang Yanan, Utilization and economic benefit analysis of urban waste, [J] Business, 2015,10 (provincial) 9. Ou Mingxian, Luo Zhang, Research on Teaching Model of Graduation Design for Civil Engineering Major [J] Journal of Yangzhou University, 2009,04 (Peking University Chinese Core) **Publishing Textbooks (5 Parts)** 1. Luo Zhang, Ed., Civil Engineering Accident Analysis and Safety Technology, Wuhan University of Technology Press, 2016,08 **(Only**, **437,000 words**) 2, Jiang Tao, Luo Zhang, Wang Wei (Ed.), Building Materials and Testing, [M] Harbin Institute of Technology Press, 2017,11 3.Xie Zhengxun, Luo Zhang, Engineering Accident Analysis and Engineering Safety (2nd Edition), [M] Peking University Press, 2013,01 4. Hu Peng, Yang Qun, Luo Zhang, Ed., Introduction to Construction Supervision, [M] Harbin Institute of Technology Press, 2017,11 5. Fang Shutian, Ma Zhe, Luo Zhang, Ed., Construction Engineering Construction, [M] China Machine Press, 2010,01
Activities in professional associations in the past 5 years	1.Hunan Province " 121 Talents in the New Century" 2. China Society of Rock Mechanics and Engineering rock crushing engineering member 3. Editorial committee of21st century applied undergraduate

	practical planning textbooks and civil construction series textbooks 4. Hunan Province comprehensive bid evaluation expert 5. Judge of Hunan Natural Science Foundation 6. Master Tutor of Power Engineering, Hunan Institute of Technology 7. Master Tutor of Civil Engineering, Hunan University of Engineering

Staff Profile

Name	Peng Huihua
Duties	Lecturer
Academic background	Graduated from Chongqing University as a PhD student. Main research interests include energy extraction and storage, comprehensive utilization of salt cavern, rock and geotechnical engineering. Currently, a theoretical teacher of Civil Engineering in School of Civil Engineering, Hunan Institute of Engineering, an academic backbone of "Lingyan" discipline in Hunan Provincial Key Laboratory of Civil Engineering Intelligent Disaster Prevention and Reduction and Ecological Restoration, a young backbone teacher in Hunan Province, an expert on Building Information Modeling (BIM) modeling and application competition judging in vocational college Skills Competition, and a "Certified Expert" in China Color Metal think Tank. He is an expert in reviewing SCI journals such as Frontiers in Earth Science, Journal of Energy Research and Reviews. Presided over 1 provincial or ministerial level scientific research project, 5 other projects, participated in 1 national project, published more than 10 papers in EI/SCI core academic journals, 2 invention patents, 1 software copyright. Won the Science and Technology Award of the first National Youth Geotechnical Mechanics and Engineering Innovation and Entrepreneurship Competition (Second Prize, Chinese Society of Rock Mechanics and Engineering).
Work Experience	2020.9-now, Lecturer in Civil Engineering, School of Architectural Engineering, Hunan Institute of Technology
Nearly 5 years of scientific research projects	1. Scientific Research Project of Hunan Provincial Department of Education, Outstanding Youth Project, 21B0664, Feasibility study on geological carbon Sequestration of greenhouse gases by Deep Salt karst Cavity, 2021-12-01 to 2024-11-30, 60,000, in research, Host; 2. Talent Research Fund Project of Hunan Institute of

	Technology, Doctoral Initiation Fund Project, 21RC025, Research on the microscopic mechanism of Microfracture healing of sodium chloride crystal rock containing fillers, 2012/01-2023/12, 100,000 yuan, Conclusion, Host; 3. Talent Research Fund Project of Hunan Institute of Engineering, General Youth Project, Research on the self-healing mechanism of damaged surrounding rock cracks in salt cavern oil and gas storage, 2021- 2023/12, 10,000 yuan, conclusion, host; 4. National Natural Science Foundation of China, Surface Project, 41672292, Uncoordinated deformation and damage Permeability of Stress-Chemical Reaction surrounding rock strata of Salt cavern Oil Storage, 2017/01/01-2020/12/31, 580,000, Conclusion, main personnel participated.
Nearly 5 years of industry cooperation	1. Water and Soil Conservation scheme design of Lake and River Connection Project in West Lake Management Area, Hunan Wuliu Engineering Consulting Co., LTD., 2023.12.4-2026.12.3, 150,000 yuan, in research, host. 2. New device design for rock material THMC multi- field coupling research, Xiangtan Jingrui Da Numerical Control Equipment Co., LTD., 2021.11.19-2023.11.18, 100,000, conclusion, host.
Patent and exclusive right	1. A method for injecting oil pad in salt cavity to prevent natural gas wetting, 2020-2-21, China,ZL201810312726.7 (Invention patent); 2. Multi-field coupled long-term creep test System for salt Rock, 2018-6-22, China, ZL201610269932.5 (Invention patent).
Important Publications	[1]He Chen, Huihua Peng, Jian Duan, Jun Wang, Shengnan Li and Yuejing Yang. Creep Behaviors of Interlayers around an underground Strategic Petroleum Reserve (SPR) Cavern in Bedded Salt Rocks [J]. Advances in Materials Science and Engineering, 2022,https://doi.org/10.1155/2022/7003227.

	[2] Huihua Peng, Jinyang Fan, Xiong Zhang, Jie Chen, Zongze Li, Deyi Jiang, Chun Liu. Computed tomography analysis on cyclic fatigue and damage properties of rock salt under gas pressure [J]. International Journal of Fatigue, 2020, 134(5): 105523-105532. [3] Jie Chen, Huihua Peng, Jinyang Fan, Xiong Zhang, Wei Liu, Deyi Jiang. Microscopic investigations on the healing and softening of damaged salt by uniaxial deformation from CT, SEM and NMR: effect of fluids (brine and oil) [J]. RSC Advances, 2020, 10(5): 2877 - 2886.
Activities in professional associations in the last 5 years	Attended the 11th Asian Congress of Rock Mechanics ARMS11, Beijing, 2021; 2021-2022 (12th) China Mining Science and Technology Conference, Chongqing, Attended; The 12th National Conference on Advanced Mining Technology and Equipment, Changsha, 2023; 2023 Annual Conference of Hunan Society of Rock Mechanics and Engineering, Xiangtan, give a report. CHINA ROCK 2024 21st Annual Conference of Rock Mechanics and Engineering, Chengdu, China.

Staff Profile

Name	Peng Liying
Duties	Professor
Academic background	1985.09--1988.07 Hunan University ofTechnology,junior College Civil construction major; 1993.09--1996.07 Hunan University, majoring in Civil Engineering, Bachelor's degree 2001.09--2006.07 Hunan University, Structural Engineering, Master's degree 2000.09 -- 2001.07 Visiting Scholar ofHunan University 2010.09 -- 2011.02 Visiting Scholar ofCentral South University
Work Experience	1988.07~1997.06 Xiangtan Suburban Real Estate Development Company 1997.07-now Professor ofHunan Institute ofEngineering
Nearly 5 years of research projects	
Nearly 5 years of industry cooperation	[1]. Teaching reform and innovative practice ofcivil engineering courses in independent colleges under the background ofnew engineering. Xiang Jiaotong [HNJG2020-1341]2020-2022, funding 20,000, host; [2]. Host the provincial first-class course "Overall Design Method of Structural Plane ", No. 322 Xiang Jiaotong [2020] [3]. Established the Ministry ofEducation Industry-University-research Collaborative education project "Teaching Reform and Research of" Flat Law "Course Based on 3DVisualization and Simulation Teaching and Training System" (Education High Department Letter [2019] No. 12) [4]. Presided over the Hunan Province famous teacher space demonstration course "Concrete Structure Design Principle " course [5]. Technical development project ofHunan Sanjie Engineering Management Co., LTD. "Concrete Durability

	Research under Complex Environment" (20119KY107) 2019.1 ~ 2021.12,with an expenditure of200,000 yuan, concluded.
Patent and exclusive right	
Important Publications	[1] "Structural Design and Calculation ofReinforcement" textbook. Ed., China Machine Press, 2021.7 [2] Teaching reform and practice of "Overall Design Method of Building Structure Plane under the Background of New Engineering", to win the future. 2021.10 [3] Study on Influencing Factors of maximum dry density of residual soil of granite [J], Journal of Hunan Institute of Engineering, 2023.12.Vol. 33,No.4.64-70
Activity in professional associations in the last 5 years	[1] Obtained the certificate ofNational registered Cost Engineer in 1997, is an expert in Hunan Province construction project bidding and bidding evaluation, and has served as the project judge of "Key construction project Evaluation Center " ofHunan Development and Reform Commission for many times, and participated in the Hunan Province construction project bidding and bidding project evaluation work for many times. [2] In 2021, guided students to participate in Hunan Surveying and Mapping Competition and won one third prize. [3] In June 2022, guided students to participate in the 8th National College Students BIM Graduation Design Innovation Competition and won the first prize and the excellent instructor. [4] In June 2023, guided students to participate in the 9th National College Students BIM Graduation Design Innovation Competition and won the second prize.

Staff Profile

Name	Pi Zhengbo
Position	Lecturer
Academic background	In December 2020, he graduated from Chongqing University with a doctoral degree. Since January 2021, he has been engaged in post-doctoral research in Central South University. He has been engaged in the research on the seismic performance of composite structures and prefabricated structures for a long time, and has published more than 10 papers, including 5 SCI and EI papers as the first author or corresponding author, participated in the preparation of 2 industry standards, or 1 second prize of provincial and ministerial science and technology progress, and 2 authorized national invention patents.
Work experience	2012.8~2015.9, Theory teacher, Department of Civil Engineering, Chongqing Energy Vocational College; 2015.9~2020.12, School of Civil Engineering, Chongqing University, doctoral student; 20121.1 ~ now, post-doctoral research, School of Civil Engineering, Central South University; 2021.1~ now, teaching and research post teacher, School of Architectural Engineering, Hunan University of Engineering.
Recent 5 years of scientific research projects	Youth Project of Hunan Natural Science Foundation: Research onseismic performance of embedded H-type steel tubular concrete Columns under flexural and torsional coupling, 2022JJ40123, 2022-2024, completed
Industry cooperation in the past 5 years	2022.12, visited the BIM laboratory of Hunan No. 3 Construction Co., LTD., and reached a cooperation agreement on jointly building the BIM laboratory; 2023.6, visited the BIM Laboratory of Hunan Architectural Design and Research Institute, and reached a cooperation agreement on jointly building the BIM laboratory.
Patents and	In 2021, participated in the preparation of the patent “a self-

exclusive rights	compacting concrete and its preparation Method based on ultrasonic shock Technology"; In December 2024, prepared the patent "A Bridge anti-collision strengthening Device based on 3D metamaterial Energy Consumption"; In December 2024, the patent "A bridge anti-collision strengthening device based on 3D origami structure energy Consumption" was prepared.
Important publication	1. Yuan Shuai, Pi Zhengbo, Wang Yuhang. Research on pseudo-static test of embedded H-shaped steel- concrete-filled steel tube column under torsion and bending [J]. Journal of Railway Science and Engineering,2024,21(09):3706-3718. (EI) 2. Zhao Xuan, Pi Zhengbo, Tao Xiu, et al. Mechanical behavior of embedded H-shaped concrete-filled steel tube columns under multi- load conditions [J]. Chinese Journal of Civil and Environmental Engineering,2023,45(06):74-82. (Second Author, CSCD Extended Edition)
Activities in professional associations in the past 5 years	From July 29 to 30, 2023, attended the 12th National Academic Conference on Earthquake Prevention and Disaster Reduction Engineering and made an academic report.

Staff Profile

Name	Wang Qinyong
Position	Lecturer
Academic background	2007.9-2011.6, Central South University ofForestry and Technology, Civil Engineering, Bachelor; 2011.9-2014.6, Changsha University of Science and Technology, Master of Bridge and Tunnel Engineering; 2015.9-2021.1, Changsha University of Science and Technology, Civil Engineering, Ph.D.
Work Experience	2014.7-2018.4, Research Institute ofTransportation Science, Changsha University of Science and Technology, Detection designer; 2021.1-now, School ofArchitectural Engineering, Hunan Institute of Engineering, Theory teacher.
Nearly 5 years of research projects	1. 2024.1-2026.12, Regional Joint Project ofHunan Natural Science Foundation, 2024JJ7103, Host, in research; 2. 2024.1-2026.12, Key Project of Scientific Research of Hunan Provincial Department of Education, 23A0526, Presided over, in research; 3. 2021.12-2022.1, Horizontal Research Project, 21H252JG , Host, Completed; 4. Horizontal project, 22H217JG, 2022.11-2023.9,host, completed; 5. 2023.5-2024.5,Horizontal project, 23H048JG, Chair, completed.
Nearly 5 years of industry cooperation	1、Closely docking with regional enterprises andinstitutions, and jointly with Hunan Province Third Engineering Co., Ltd. to declare and approve the project of Hunan Province Natural Science Fund regional joint project 1; 2、With industry-related enterprises (Changsha Shuqin Bridge and Tunnel Technology Co., LTD., Changsha Yabo Engineering Technology Development Co., LTD., Changsha Zhiyi Digital Engineering Technology Co., LTD., Hunan Third

	Engineering Co., LTD., etc.) to carry out school- enterprise cooperation to develop 3 horizontal projects, 2 authorized invention patents, 4 related achievements transformation and application.
Patents and exclusive rights	1. "Collinear double-crack recharacterization Method, Device, storage Medium and Product", Invention Patent, ZL202410605870.5, date of authorization: July 2024; 2. "Crack propagation path prediction method, device, storage medium and product", Invention patent, ZL202410609720.1, Authorization date: August 2024.
Important Publications	Liu Yang, Wang Qinyong, LuNaiwei. Probabilistic evaluation ofmaximum dynamic traffic load effects on cable- supported bridges under actual heavy traffic loads. Proceedings ofthe Institution ofMechanical Engineers, Part O: Journal ofRisk and Reliability.2021; 235 (1): 108-119. The doi: 10.1177/1748006 x20938491
Activity in professional associations in the last 5 years	Member ofInternational Intelligent Infrastructure Structure Health Monitoring Society (ISHMII), member ofChinese Society ofRock Mechanics and Engineering, senior member of Chinese Society ofGraphics, reviewer ofJournal ofRisk and Reliability, Highway Traffic Science and Technology, etc. National undergraduate thesis (design) sampling review expert database expert, China Rock mechanics and Engineering Society Party Committee -- Hunan Institute of Engineering satellite venue Party group member.

Staff Profile

Name	Wang Baiwen
Position	Lecturer
Academic background	PhD candidate at Changsha University of Science and Technology. Researches in solid waste resource utilization and green cement. Published 11 papers, including 6 SCI papers and 5 Chinese core papers, of which 2 SCI papers and 3 Chinese core papers were published as the first author. Presided over one provincial graduate research innovation project and participated in one. Participated in two National Natural Science Foundation projects.
Work experience	2024.2 - now Hunan Institute of Engineering
Nearly 5 years of research projects	Presided over the Research of HVFA Concrete Hole Structure and evolution law of hole solution alkalinity (CX20210766) Hunan Graduate Research Innovation Project. Participated in the determination method of the initial rust time of Steel bars in mixed reinforced high-content fly Ash Concrete (52178207) National Natural Science Foundation of China; Health Monitoring Data-driven Damage Probability Inference and System Reliability Evaluation Method for Suspension Bridges (5217081913) National Natural Science Foundation of China.
Industry cooperation in the past 5 years	
Patents and exclusive rights	
Important publications	
Activity in professional associations in the last 5 years	

Staff Profile

Name	Huang Jiamei
Position	Lecturer
Academic background	2005.9-2009.7 Bachelor degree in Civil Engineering, School of Civil Engineering, Hunan University 2009.9-2012.7 Master Degree in Bridge and Tunnel Engineering, School of Civil Engineering, Hunan University
Work Experience	2012.8-2016.12 Teaching assistant, School of Architectural Engineering, Hunan Institute of Engineering 2017.1-now Lecturer of School of Architectural Engineering, Hunan Institute of Engineering
Nearly 5 years of scientific research projects	
Nearly 5 years of industry cooperation	
Patents and exclusive	
rights	
Important publication	
Activities in professional associations in the last 5 years	

Staff Profile

Name	Cai Chengxiu
Position	Lecturer
Academic background	2001.9-2005.6 Changsha University of Science and Technology, Road Engineering, Bachelor degree; 2008.9-2011.6 Changsha University of Science and Technology, Road and Railway Engineering, Master degree; 2016.7- now Changsha University of Science and Technology, Road and Railway Engineering, PhD candidate;
Work Experience	2005.7 -- 2008.6 Yucai-Brown Traffic Consulting Supervision Co., LTD.; 2011.7-now Hunan Institute of Engineering;
Nearly 5 years of scientific research projects	
Nearly 5 years of industry cooperation	2019.10.14-2020.10.14 “Xiangyuan New Town Project” Hengyang Xiangyuan Real Estate Development Co., LTD.; 2021.12.14-2024.10.14 “Research on Key technologies of stone powder Application in high-performance cement concrete” Hengyang Xiangyuan Real Estate Development Co., LTD.
Patents and	
exclusive rights	
Important Publications	
Activities in professional associations in the last 5 years	

Staff Profile

Name	Nong Jinlong
Position	Lecturer
Academic background	(1) 2003.9 - 2014.4 PhD in Structural Engineering, Hunan University, (2) 2000.9 - 2003.7, Hunan University, Master of Materials Science (3) 1994.9 - 1998.7, Central South University, Mechanical Manufacturing, B.S.
Work Experience	(1) 2014.5-now, Lecturer, School of Architectural Engineering, Hunan Institute of Engineering (2) 1998.7 - 2000.9 Assistant Engineer, Liuzhou Rolling Stock Factory, Liuzhou Railway Bureau,
Nearly 5 years' research project	(1) The horizontal project of "Bonding properties of polymer modified concrete", chaired by Nong Jinlong, the fund is 200,000 yuan. (2) Scientific research project of Hunan Provincial Department of Education, Research on key technology and mechanism of ultra-high performance joint grouting material for prefabricated buildings, chaired by Nong Jinlong, funding 10,000 yuan. (3) The first prize of the 8th National College BIM Graduation Design Innovation Competition in 2022, Nong Jinlong, Instructor. (4) In 2020, Nong Jinlong guided the completion of the provincial college student innovation project "Influence Analysis of latex on aluminate cement composite".
Nearly 5 years of industry cooperation	Signed a contract with Hunan Shengxi New Energy Technology Co., Ltd. for the conversion of scientific research results. Project name: a material recycling and crushing device for civil construction.
Patent and exclusive right	2021.02.19, A material recycling and crushing device for civil construction, Nong Jinlong, China, ZL202020874402.5; 2020.12.29, A concrete rapid transport device for construction

	site, NongJinlong, China, ZL202020797504.1
Important Publications	
Activities in professional associations in the last 5 years	In 2023, he was selected as a science and technology special correspondent in Xiangtan City, sending point, Hunan Yuanzhuo New Materials Co., LTD

Staff Profile

Name	Peng Di
Duties	Associate Professor
Academic background	2000.09--2004.07 Changchun Institute ofTechnology, majoring in Exploration Technology and Engineering (Geotechnical Engineering), obtained the Bachelor of Engineering degree; 2004.09--2006.08 Jilin University, Geological Engineering major, master degree 2006.09--2012.07 Jilin University, Geological Engineering major, doctoral candidate
Work Experience	2004.07~2010.09 Assistant ofChangchun Institute of Technology 2010.09~2017.09 Lecturer, Changchun Institute of Technology 2017.09~2021.06 Associate Professor, Changchun Institute of Technology 2021.07~ Now Associate Professor, Hunan Institute of Engineering
Recent 5 years of research projects	2019~2021,Research on New Environmental protection Frozen soil retaining wall foundation pit support technology, Jilin Provincial Science and Technology Department, 200000, ,No. 3.
Industry cooperation in the past 5 years	Development and test of a newtype ofreclaimed anchor cable structure for foundation pit, Tianshui Geological Engineering Survey Institute ofBuilding Materials Co., LTD., 2021.11-2023.12, 50,000 yuan Data processing and analysis ofthe impact monitoring project of Commercial Commercial Building foundation pit project of Songjiang Stock Economic Cooperative ofHangzhou on the adjacent area ofWenyi Road Tunnel, 2,022, 20,000 yuan Data processing and analysis ofNew Road 3 Tunnel Project of Hangzhou Xiaoshan International Airport Phase 3 Project, 2,023, 30,000 yuan

Patents and exclusive rights	
Important publication	[1] Wang Wei, Liu Danna, Peng Di. Safety extension evaluation of deep foundation pit excavation in sand and gravel strata based on entropy method [J], Journal of Southwest Jiaotong University, Journal of Southwest Jiaotong University, 2021,56 (04). [2] "Foundation Pit Engineering", Chemical Industry Press, editor- in-chief, Feb 2021,No. 1. [3] Underground Engineering Construction, Chemical Industry Press, Associate Editor, February 2021,No. 3.
Activities in professional associations in the past 5 years	

Staff Profile

Name	Xiao Chunyun
Position	Lecturer
Academic background	(1) 2006-09 to 2016-09, Hunan University, Civil Engineering, Master's degree (2) 1998-09 to 2002-07, Anhui University of Science and Technology, Bachelor of Civil Engineering
Work Experience	(1) 2016-12 to Hunan Institute of Technology, School of Architectural Engineering, Lecturer (2) 2002-07 to 2005-06, China Railway Eighth Bureau Group Co., LTD., the Second Engineering Limited company, Assistant Engineer
Nearly 5 years of research projects	1. 2019.09-2021.09, Research on Aerodynamic instability Mechanism and Control Measures of cable Bearing Bridge Sling Group, Provincial Key Laboratory open subject, 30000, host 2. 2024.08-2026.08, Study on wind-induced vibration of long suspension cables of cable-bearing Bridges, General Project of Education Department, 1.0, host
Nearly 5 years of industry cooperation	1, 2019.09-2020.09 Yan'an New District National Fitness Center wind vibration response calculation,, horizontal, 45,000, host 2, 2019.10- 2020.10, Zhejiang Greentown Tiantai Mountain Ice and Snow Park project wind response calculation, horizontal, 45,000, host 3. 2021.09-2023.02, New Technology Development for roof construction of Composite functional vegetation, Horizontal, 630 million yuan, host
Patents and exclusive rights	
Important Publications	
Activities in	1. 2024.11.30-2024.12.01,The 7th International Conference on

professional associations in the last 5 years	Earthquake Mitigation and Engineering Innovation of Bridge Structures, participated

Staff Profile

Name	Xiao Jiangbin
Position	Lecturer
Academic background	1995.07 graduated from East China University of Geology, majoring in Geology and Mineral Exploration, successively engaged in road engineering construction management and supervision, and then entered the university to engage in the research and teaching of civil engineering.
Work Experience	1995.07-2007.03 China Construction Fifth Bureau Civil Engineering Co., LTD 2007.03-now School of Architectural Engineering, Hunan Institute of Engineering
Nearly 5 years of research projects	2017.04-2019.03 New technology research and development of pipe jacking project of Guangyuntan Avenue heat network 2019.11-2021.11 Application research and development of external wall thermal insulation materials 2021.02-2022.04 New technology research and development of underground structure waterproof engineering
Nearly 5 years of industry cooperation	2017.04-2019.03 Cooperated with Shaanxi Zhihan Project Management Co., LTD 2019.11-2021.11 Cooperation with Xiangtan High-tech Zone Huashun New Material Technology Co., LTD 2021.02-2022.04 Cooperation with Hunan Wantong Construction Group Co., LTD
Patents and exclusive rights	
Important publications	
Activity in professional associations in the last 5 years	

Staff Profile

Name	Zhang Chantao
Duties	Theory teacher
Academic background	Presided over 1 science and technology project of Hunan Provincial Department of Education, participated in 1 project, and participated in 4 teaching research and reform projects. Participated in the publication of 11 papers, including 1 SCI, 1 EI. Guided students in 2 scientific and technological innovation projects. Instruct students in 1 competition project. The main research direction is the application of concrete in various projects.
Work Experience	2014-now, School of Architectural Engineering, Hunan Institute of Engineering.
Nearly 5 years of research projects	Participated in Hunan Province first-class undergraduate course "Steel structure Design" project.2021
Nearly 5 years of industry cooperation	
Patents and	
exclusive rights	
Important Publications	
Activities in professional associations in the last 5 years	

Staff Profile

Name	Zhang Juan
Position	Lecturer
Academic background	Participated in a number of national and provincial projects, and participated in 2 national invention patent grants. Published 6 academic papers in domestic and foreign journals.
Work experience	2005.9 -- 2008.6 Road and Railway Engineering major, Changsha University of Science and Technology; 2008.7 -- now, working in Hunan Institute of Engineering.
Nearly 5 years of scientific research projects	1. Scientific Research Project/Key Project of Hunan Provincial Department of Education (21A0462) : 2. Study on Static and Dynamic Properties and Evaluation of Coarse-grained soil fillers for Heavy-haul Railway Roadbed, 2021.12.15-2024.12.15
Industry cooperation in the past 5 years	1. 2019.09.20-- 2021.09.20 Horizontal project: Application Research and development of carbon five petroleum resin in Road Engineering (19HJG193) ; 2. 2021.09.05 - 2023.04.05 Horizontal project: Material composition design and preparation of steel slag asphalt mixture (KY2021255) .
Patents and exclusive	
rights	
Important Publications	
Activities in professional associations in the last 5 years	

Staff Profile

Name	Zou Hongbo
Duties	Associate Professor
Academic background	Central South University,master's degree, research direction: structural engineering. Central South University,PhD student., research field: concrete durability.
Work Experience	Since 2004, he has been teaching at the School of Architectural Engineering, Hunan Institute of Engineering.
Nearly 5 years of research projects	
Nearly 5 years of industry cooperation	
Patents and exclusive rights	
Important	
Publications	
Activities in	
professional	
associations	
in the last 5	
years	

Staff Profile

Name	Zhang Yongjun
Position	Lecturer
Academic background	Zhang Yongjun graduated from Xiangtan University with a doctorate degree in general mechanics and Basic mechanics. He is currently a lecturer at the School of Architectural Engineering, Hunan Institute of Engineering. He is a member of Chinese Society of Mechanics. His main research direction is new pavement materials and their rheological properties. In recent years, he has presided over one doctoral research project, participated in three national science projects and one provincial science project. In the past five years, he has published more than 10 academic papers in well-known journals at home and abroad, including 7 EI/SCI papers, and the relevant papers won the 2022 "China Highway Journal". Excellent Paper Award and "National Rheology Academic Conference Youth Excellent Paper Award".
Work Experience	2021.11 -- now, worked as a teacher in Hunan Institute of Engineering
Nearly 5 years of scientific research projects	(1) Participated in the National Natural Science Foundation of China, Surface Project, 12172320, Study on the mechanism and automatic method of capture and separation of circulating tumor cells by porous filter membrane chip in microfluidic technology, 2022-01-01 to 2025-12-31, 620,000 yuan, ongoing research; (2) In the National Natural Science Foundation of China, Mian Project, 12072308, Delayed failure Mechanism and viscoelastic Fracture Analysis of polymer pressure Pipeline, 2021-01-01 to 2024-12-31, 630,000 yuan, research; (3) Participated in the National Natural Science Foundation of China, Youth Science Foundation Project, 11802259, Damage Evolution and time-stress equivalence Principle of Viscoelastic polymers under bidirectional stress, 2019-01-01 to 2021-12-31,

	240,000 yuan, completed.
Nearly 5 years of industry cooperation	
Patents and exclusive rights	
Important publications	Papers: [1] Zhang Yongjun, Luo Wenbo. Permanent deformation of basalt fiber asphalt mixture under repeated load and its fractional-order viscoelastic-plastic model. Materials Review. 2022,36(9):116-122. [2] Yongjun Zhang, Xiu Liu, Boyuan Yin, Wenbo Luo. A nonlinear fractional viscoelastic-plastic creep model of asphalt mixture. Polymers, 2021, 13(8):1278. [3] Yongjun Zhang, Wenbo Luo, Xiu Liu. Experimental studies on dynamic viscoelastic properties of basalt fiber reinforced asphalt mixture. Science and Engineering of Composite Material. 2021, 28(1):489-498. [4] Liu, Xiu, Dingxiang Zhu, Jianguo Lin, Yongjun Zhang. Temperature and Frequency Dependence of the Dynamic Viscoelastic Properties of Silicone Rubber. Polymers. 2023; 15 (14) : 3005. [5] Luo Wenbo, Liang Sheng, Zhang Yongjun. Fractional differential constitutive model of dynamic viscoelasticity of asphalt mixture. China Journal of Highway and Transportation. 2020, 33(2):34-43. [6] Wenbo Luo, Boli, Yongjun Zhang, Boyuan Yin, Jingling Dai. A creep model of asphalt mixture based on variable order fractional derivative. Applied Sciences, 2020, 10, 3862. [7] Luo Li, Ma Yan, Zhang Yongjun, Liu Yijiang, Liu Xiu. Numerical simulation of strength failure of buried polyethylene pipe under the action of foundation settlement. Journal of Building Materials, 2020, 23(02):473-478.

Activities in professional associations in the last 5 years	1. 2020,11.13-18, participated in the 18th International Congress on Rheology (ICR2020), ; 2. 2020.12.4-7, attend the 15th National Conference on Rheology ; 3. 2022.11.3-6, attend the 19th Annual Conference of Rock Mechanics and Engineering of China; 4. 2023.7.24-26 attend the 16th National Conference on Rheology; 5. 2024.8.25-30, attend The 26rd International Congress of Theoretical and Applied Mechanics (ICTAM2024).

Staff Profile

Name	Zhou Kejing
Position	Lecturer
Academic background	Ph. D., research direction: seismic design of connected beams. In recent years, he has presided over one doctoral research project and participated in one national science surface project. In the past five years, he has published 6 academic papers in well-known journals at home and abroad, including 5 SCI papers.
Work experience	2022.8 - now, teaching at School of Architectural Engineering, Hunan Institute of Engineering
Nearly 5 years of research projects	
Nearly 5 years of industry cooperation	
Patents and exclusive rights	
Important publications	
Activity in professional associations in the last 5 years	

Staff Profile

Name	Zhou Zhuo
Duties	Theory teacher
Academic background	2020-2024, Civil Engineering, Changsha University of Science and Technology, PhD candidate 2023-2024 , Universiti Malaya joint training study for one year 2016 to 2019, Master student, majoring in Architecture and Civil Engineering, Changsha University of Science and Technology 2012-2016, undergraduate, majoring in Civil Engineering, Shaoyang University
Work Experience	2024-now, professional teacher, Hunan Institute of Engineering From 2019 to 2020, Structural Engineering Co., LTD., Second Aviation Bureau of China Communications, staff
Nearly 5 years of scientific research projects	Presided over the Key Research and Innovation Project of Hunan Graduate Students: Research on Fatigue life prediction of Welded components considering crack closure Effect (Project No. : CX20210737)
Nearly 5 years of industry cooperation	
Patents and exclusive	
rights	
Important publications	[1] Zhou Z, AndriyanaA, Guan D Q, et al. Combining relative stress gradient and effective notch stress methods to evaluate the fatigue life of steel welded members after TIG dressing. International Journal of Fatigue, 2024, 187:108443. (SCI, TOP Journal of Chinese Academy of Sciences) [2] Zhou Z, AndriyanaA, Guan D Q, et al. Evaluating the fatigue life of notched components based on the stress gradient model with variable support effects. Materials & Design, 2024, 239:112793. (SCI, TOP Journal of Chinese Academy of Sciences)

	[3] Zhou Z, Zhao J W, Guan D Q. A simple and convenient fatigue analysis method considering the effect ofplasticity on fatigue. Journal ofBuilding Engineering, 2023, 65:105625. (SCI, TOP Journal ofChinese Academy of Sciences) [4] Zhou Z, Guan D Q. Considering the Effect ofNon-Propagating Cracks on Fatigue Limit Prediction in the Critical Distance Method Framework. Applied Sciences -- Basel, 2022, 12(21):10994. (Included by SCI)
Activities in professional associations in the last 5 years	

Staff Profile

Name	Wei Xingxing
Position	Lecturer
Academic background	2019.09-2021.09 Department of Civil and Environmental Engineering, University ofDayton (Joint training), USA 2017.09-2022.12 Road and Railway Engineering, Central South University (PhD) 2014.09-2017.06 Nanchang Hangkong University (Master) Architecture and Civil Engineering 2010.09-2014.06 School of Science and Technology, East China Jiaotong University (Bachelor) Automobile Service Engineering
Work Experience	07/2024.-now, Hunan Institute of Engineering
Nearly 5 years of research projects	(1) Independent Exploration and Innovation Project of Graduate Students, Central South University, 2020zzts162, Research on the uncertainty of Quantified Formation Information based on Markov random Field Theory and Bayesian Inference Framework, Conclusion, Host. (2) Science and Technology Project ofHunan Provincial Department ofTransportation, 201909, Research on Key technologies ofdisplacement instability Criterion and disaster range Prediction of High and steep Slope, 600,000 yuan, Conclusion, participation, and responsibility for the research of 3D digital model in the research report; (3) Science and Technology Project ofHunan Provincial Department ofTransportation, 202238, Research on key technologies ofintelligent safety supervision and early warning ofkey high-risk slopes, 780,000 yuan, in research, participation, and responsible for the research ofthree-dimensional digital model in the research report;
Nearly 5 years of industry cooperation	(1) Project of Ohio State Transportation Bureau, Ohio CUY-480 and CUY-490 stratum Geotechnical structure inspection project, 5.6 million yuan, conclusion, participation, responsible

	for the research of geotechnical body information acquisition technology; (2) Jinhua Municipal Transportation Bureau project, Lanxi-Jinhua River Channel shipping development engineering channel ship test and beacon efficiency test, 2.4 million yuan, conclusion, participation, responsible for the field ship trial test.
Patents and exclusive rights	
Important publications	[1] Wei X, Wang H. Stochastic stratigraphic modeling using Bayesian machine learning[J]. Engineering Geology, 2022, 307: 106789. [2] Wei X X, Zou J F, Chen G H. Seismic stability analysis of heterogeneous slopes reinforced by inclined soil nails[J]. European Journal of Environmental and Civil Engineering, 2023: 1-19. [3] Wei X, Chen G. Model Test on Grouting Properties of Alluvial Filler Soil[J]. Applied Sciences. 2023; 13(18): 10395. [4] ZouJ, Wei X. An improved radius-incremental- approach of stress and displacement for strain- softening surrounding rock considering hydraulic- mechanical coupling[J]. Geomechanics and Engineering, 2018, 16(1): 59-69. [5] Qian Z H, Zou J F, Wei X X*. Anovel plastic failure model ofprestressed anchor cables for upper bound stability analyses ofrotational reinforced slopes[J]. European Journal of Environmental and Civil Engineering, 2022: 1-20.
Activities in professional associations in the last 5 years	

Staff Profile

Name	Liu Zhaofeng
Duties	Associate professor, Senior engineer
Academic background	2000.9 - 2004.6, Civil Engineering, Central South University, Undergraduate 2004.9 - 2009.12, Master and PhD candidate in Bridge and Tunnel Engineering, Southwest Jiaotong University Ph. D. Main research interest: bridge structural behavior research. Presided over 6 provincial and ministerial scientific research and teaching research projects, published more than 20 academic papers in well-known journals at home and abroad, and has been authorized more than 10 invention or utility model patents.
Work experience	2010.04-2016.07 Hunan Transportation Planning, Survey and Design Institute 2016,7 -- now Hunan Institute of Engineering
Nearly 5 years of research projects	1. Science and Technology support project of Guizhou Science and Technology Plan. Research and demonstration of ultra-high performance concrete joint technology in negative moment zone of prefabricated bridge. 2. Hunan Natural Science Foundation Joint Fund Project. Research on mechanical performance of long-span steel-UHPC composite bridge deck. 3. Scientific Research Outstanding Youth Project of Hunan Provincial Education Department. Research on key technology of machine-made sand concrete for bridge engineering.
Nearly 5 years of industry cooperation	1. Application of achievements: Research and development of prefabricated multi-direction displacement bridge expansion device technology, host 2. Application of achievements: Research and development of key technology of UHPC steel bridge deck pavement, host 3. Application of achievements: Research and development of local damage repair technology of ultra- high performance

	concrete, host 4. Application of achievements: Technical research and development of bridge expansion joint and its construction technology, host 5. Application of achievements: Research and development of ultra-high performance concrete joints in negative moment area of prefabricated Bridges, host 6. Transformation of achievements: a bridge expansion joint and its construction technology (invention patent technology transfer), host
Patents and exclusive rights	[1] Liu Zhaofeng, Yu Man, Wang Senhai, et al. A kind of maintenance device for Bridge concrete [P]. CN202411170400.7, 2024-11-12. [2] Liu Zhaofeng, Tang Shuming, Wang Tengwen. A testing device for Bridge steel cable [P]. CN202410851953.2, 2024-10-01. [3] Liu Zhaofeng, Jiang Yonglei, HE Jianqiu. A kind of Bridge inspection vehicle walking device for Bridge Inspection [P]. CN202410789001.2, 2024-09-06. [4] Liu Zhaofeng, Yang Ling, Tang Xin. A comprehensive treatment device for highway runoff pollution [P]. CN202410661728.2, 2024-08-09. [5] Liu Zhaofeng, Wu Yousong, Lin Du. A fiber arrangement device for production of ultra-high performance concrete [P]. CN202310740206.7, 2023-08-29. [6] Liu Zhaofeng, Wu Yousong, Lin Du. A kind of dust suppression device for detrital sand production [P]. CN202310592043.2, 2023-08-08. [7] Liu Zhaofeng. A kind of anti-collision storage rebound sliding buffer energy dissipation device for bridge [P]. CN202010550562.9, 2022-02-22. [8] Liu Zhaofeng. A kind of bridge expansion joint and its construction Technology [P]. CN201611117981.3, 2018-06-29.

Important Publications	Market Supervision and Administration of Hunan Province, Technical Regulations for Ultra-High Performance Concrete Pedestrian Bridges (DB43/T 2959- 2024), May 2024, Participated in the editorial.
Activities	Member of the second Structural Professional Committee of Hunan Civil and Architectural Society
in professional associations in the past 5 years	

Staff Profile

Name	Guo Ruijian
Position	Lecturer, full-time laboratory teacher
Academic background	1999.09--2003.06 Hunan University of Science and Technology, majoring in Mathematics and Applied Mathematics, Bachelor of Science degree; 2009.09--2012.06 Lanzhou University, Geological Engineering, master degree 2019.09--2024.06 Guilin University of Technology, Geological Engineering major, doctoral candidate
Work experience	2003.07~2009.08 Zhuzhou No.8 Middle School Teacher 2012.07~2015.05 Engineer of Gansu Provincial Urban and Rural Planning and Design Institute 2015.06~2020.12 Assistant Professor of Hunan Institute of Engineering 2021.01~ Now Lecturer, Hunan Institute of Engineering
Recent 5 years of research projects	[1] Study on disaster mechanism and collective warning and prediction of covered karst cave collapse under gas-water-soil coupling action, Scientific Research Project of Hunan Provincial Department of Education, 20C0497 [2] Research on flexural deformation characteristics of Soft and hard interbedded rock mass and Disaster induced by rock slope dynamics, Hunan Institute of Engineering, General Project of Youth Research
Industry cooperation in the past 5 years	[1] Investigation and Evaluation of Geological Hazards in Urban Underground Air Defense Chamber, 21H174JG, Hunan Dading Engineering Technology Co., LTD [2] Research on Key Technology and Application of Displacement control for pile-anchor foundation pit support, 19HJG218, Hunan Dading Engineering Technology Co.,LTD
Patent and exclusive right	
Important	[1] Xuejun Chen, Ruijian Guo*, Lingming Tang, and Xiaochen

Publications	Zhang. Study on Ground Collapse of Covered Karst Soil Caves by Sudden Drop of Groundwater [J]. Advances in Civil Engineering, 2021, 7796401:1-12. https://doi.org/10.1155/2021/7796401. [2] Guo Ruijian, Chen Xuejun, Duan Jian, Tang Lingming, Zhang Xiaochen. Analysis of precipitation-induced collapse of mulched-karst cavern considering spatial shape [J]. Journal of Southwest Jiaotong University, 2023, 58(2): 453-461. [3] Chen Hong-Bin, Guo Rui-jian *, Chen Xue-jun. Analysis of caving model and influencing factors caused by vacuum erosion in soil cavity of mulch karst cover [J]. Journal of Engineering Geology, 2022, 30(4): 1284-1291. [4] Guo Ruijian, Chen Xuejun. Analysis of precipitation subsidence induced by negative pressure and its morphological influence on covered karst soil caves [J/OL]. Journal of southwest jiaotong university. https://link.cnki.net/urlid/51.1277.u.20240914.1013.017
Activities in professional associations in the past 5 years	Reviewer for Karst Journal in China; As an expert in geotechnical engineering review, he has completed more than 10 special reviews of construction project design and construction.

Staff Profile

Name	ShenYaqian
Duties	Full-time lab teacher
Academic background	2015.09-2019.09 Changchun Institute ofTechnology, majoring in Civil Engineering 2019.09-2021.12 Hunan Institute ofEngineering, Power Engineering major
Work Experience	2022.05~ now Hunan Institute ofEngineering, teacher
Research projects in the past 5 years	1. Science and Technology Department of Hunan Province, Surface Project, 2021JJ50106, Research on the Bearing Capacity and seismic performance of a Newtype of External Prestressed concrete Beam, 2021/01- 2023/12, 100,000 yuan, Conclusion, Participation
Nearly 5 years of industry cooperation	
Patents and exclusive rights	1. Li Shengnan, Ma Kai, Zhang Xinyou, Zhu Yi, Shen Yaqian, Liu Xingpeng, TianYuxin, Tan Helu. A kind of house settlement observation ruler [P].CN202320110087.2,2023-07-28. 2. Zeng Xiantao, Ren Zhenhua, Chi Qinghui, Zeng Yixuan, Huang Zhenzhi, Huang Hanlin, Shen Yaqian. A Design Type Self-locking System for reversible wire nut based on the size of fastener [P].CN202020949099.0,2021-03-30. 3. Ren Zhenhua, Zeng Xiantao, Zeng Yixuan, Chi Qinghui, Shen Yaqian, Huang Hanlin, Huang Zhenzhi. A kind of Self-tightening bolt washer nut system [P].CN202020947416.5,2021-03-30.
Important Publications	1. Zhenhua Ren, Xiantao Zeng, Yaqian Shen, and Huanlin Huang. Experimental Research on Axial Compression of Reinforced Concrete Short Circular Columns Strengthened with Prestressed Semicircular Steel Plates. Advances in Civil Engineering,Volume 2021,Article ID 1992084, 12 pages.

	https://doi.org/10.1155/2021/1992084 2, Zhenhua Ren, Yaqian Shen, Xiantao Zeng, and Yuantian Sun . Axial Compression Test and Bearing Capacity Analysis of Biaxial Prestressed Angle Steel Plate Fully Wrapped Reinforced Concrete Short Column. Advances in Civil Engineering, Volume 2022,Article ID 9801222, 18 pages.https://doi.org/10.1155/2022/9801222
Activities in professional associations over the past 5 years	

Staff Profile

Name	Ouyang Xiangsen
Duties	
Academic background	2012.09-2020.10, Central South University, Civil Engineering, PhD 2003.09 -- 2006.06 Changsha University of Science and Technology, Bridge and Tunnel Engineering, Master 1999.09-2003.06 Changsha University of Science and Technology, Bridge and Tunnel Engineering, Bachelor
Work Experience	2006.07-2022.12 Lecturer, School ofArchitectural Engineering, Hunan Institute ofEngineering 2023.01-now Associate Professor, School of Civil and Architectural Engineering, Hunan Institute ofEngineering
Nearly 5 years of research projects	
Nearly 5 years of industry cooperation	
Patents and exclusive rights	A dust removal gravel device for construction ofcivil and architectural engineering, Invention Patent, ZL 2022 1 0965707.0
Important Publications	(1) Xiang Sen Ouyang; Xiao Yong Luo; Jun Wang ; The fatigue properties and damage ofthe corroded steel bars under the constant-amplitude fatigue load, JOURNAL OF VIBROENGINEERING, 2019, 21(4): 988-997 (Journal Papers) (2) Ouyang Xiangsen; Luo Xiaoyong; Wan Aozhou; Zou Hongbo; Experimental study on fatigue life ofreinforced concrete beams considering durability damage, Journal of China Railway Journal, 2018, 40(11): 112-120 (Journal papers) (3) Ouyang Xiangsen; Luo Xiaoyong; Zou Hongbo; Xiao Ye; Study on static constitutive relationship ofcorroded steel after

	constant amplitude fatigue loading, Journal ofRailway Science and Engineering, 2020, 17(4): 972-979 (Journal papers) (4) Ouyang Xiangsen; Zhang Dongbo; Zou Hongbo; Wang Jun; A simplified calculation method of internal force of prefabricated inclined hollow plate bridge, Highway Transportation Science and Technology, 2014, 31(9): 76- 81 (Journal Papers) (5) XiangsenOuyang; XiaoyongLuo; JieLiu; JunWang; ZouHongbo ; Laboratory tests on the fatigue behavior of damaged reinforced concrete beams under constant-amplitude fatigue loading, Structural Concrete, 2021, 22(6): 3461-3475 (Journal papers)
Activity in professional associations in the last 5 years	

Staff Profile

Name	Liu Jie
Duties	Associate Professor
Academic background	Ph. D. in mechanical rock breaking mechanism. In recent years, he has presided over 1 youth project ofNational Natural Science Foundation, 2 projects of Provincial fund and 2 research projects ofDepartment ofEducation. In the past 5 years, he has published 7 papers, including 6 SCI papers.
Work experience	2016,6 - now teaching at School ofArchitectural Engineering, Hunan Institute ofEngineering
Nearly 5 years of scientific research projects	Research on the mechanism ofhob rock breaking considering the evolution ofrock surface cracks and the method of promoting rock fragmentation, Host, Youth Project of Hunan Natural Science Foundation, 2020-2022. Joint Rock breaking Mechanism of Inserted TBM Hob and pre- cut Groove, Host, Key Scientific Research Project of Hunan Provincial Education Department, 2021-2024. Rock Breaking Mechanism ofHob under laser Attenuation-induction, Host, Project Surface ofHunan Natural Science Foundation Project, 2023-2025.
Nearly 5 years of industry cooperation	no
Patents and exclusive rights	A hob linear rock breaking device and test method considering vertical confining pressure action, National Invention Patent, Authorized, 2024
Important Publications	
Activity in professional associations in the last 5 years	

Staff Profile

Name	Li Shengnan
Duties	Associate Professor
Academic background	2009.09--2013.06 Hunan Institute of Science and Technology, majoring in Civil Engineering, Bachelor of Engineering; 2013.09--2016.06 Guilin University of Technology, Civil engineering major, master degree 2017.09--2021.01 Changsha University of Science and Technology, Civil Engineering major, doctoral candidate
Work Experience	2016.09~2017.06 Assistant of Hunan Urban Construction Vocational and Technical College 2021.01~2022.12 Lecturer, Hunan Institute of Engineering 2023.01~ now Associate Professor, Hunan Institute of Engineering
Research projects in the past 5 years	1. Research on crack propagation evolution and shallow instability mechanism of carbonaceous mudcut slope under dry-wet cycling, National Natural Science Foundation of China, 300,000, 2022-2024,No. 1; 2. Research on improvement mechanism of high water content granite residual soil and Subgrade filling technology, Hunan Provincial Department of Education, 60,000, 2022-2024,No.1; 3. Study on damage evolution and stability of fractured soft rock cutting slope under interaction of moisture and heat, Hunan Science and Technology Department, 50,000, 2022-2024, 1st; 4. Construction Practice of Green and low-carbon Building materials Laboratory in local universities under the background of New engineering, Cooperative Education Project of Ministry of Education, 50,000, 2022-2025,No.1; 5. Quantitative characterization of damage evolution of carbonaceous mudstone under dry and wet cycles and loads, Engineering Research Center for Road Disaster Prevention and

	Traffic Safety, Ministry of Education, 30,000, 2023- 2025,No. 1; 6. Research on quantitative technology of granite residual soil subgrade improvement and ash mixing based on deep learning, Hunan Key Laboratory of Natural Disaster Risk Survey of Highway Engineering, 20,000, 2024-2026,No. 1.
Nearly 5 years of industry cooperation	1. Cooperated with Changsha Nuclear Industry Engineering Survey Institute Co., Ltd. to obtain the first prize of nuclear industry engineering technology achievements; 2. Expert of Hunan Sanjiang Engineering Consulting Co., LTD. 3. Expert of Changsha Nuclear Industry Engineering Survey Institute Co., LTD.; 4.2023 “a house settlement observation scale” patent transfer Hunan Zhongshang Engineering Technology Co., LTD.; 5.In 2024, “A slope retaining wall inclination rate measurement device and method” patent implementation license Hunan Anxing Building Decoration Engineering Co., LTD.; 6.2024 “A flexible energy-absorbing passive rockfall prevention device” patent implementation license Hunan Xianghuang Architectural Design Co., LTD.
Patent and exclusive right	1. Li Shengnan, Ma Kai, Zhang Xinyou, et al. A measuring device for building tilt [P]. Hunan Province :CN202320113750.4,2024- 08-23. 2. Huang Ruohong, Wu Yan, Li Shengnan. A surveying instrument positioning equipment for engineering surveying and mapping [P]. Hunan Province :CN202410678347.5,2024-08-20. 3. Wu Yan, Zhang Cheng, Li Shengnan, et al. A soil covering device for mine slope treatment [P]. Hunan Province :CN202410638320.3,2024-07-30. 4. Li Shengnan, WU Chaofan, WANG Qinyong, et al. A

	flexible passive rockfall prevention device with energy absorption [P]. Hunan Province :CN202311578140.2,2024-06-11. 5. Li Shengnan, Li Yu, PENG Yucheng, et al. A device and method for measuring inclination rate of slope retaining wall [P]. Hunan Province :CN202311535303.9,2024-03-19. 6. Li Shengnan, Ma Kai, Zhang Xin-You, et al. A kind of house settlement observation scale [P]. Hunan Province :CN202320110087.2,2023-07-28.
Important publication	1.Shengnan Li, Zhonghua Huang, Kang Huang, et al. Study on the evolution law and quantitative characterization of micro-crack propagation in the compressive failure process of rocks [J]. Engineering Failure Analysis, 2024, 155.(SCI) 2. Li Shengnan, Xiao Jun, Li Yu, et al. Research on rock damage constitutive model based on microscopic crack growth evolution [J]. Chinese Journal of Rock Mechanics and Engineering,2023,42(03):640-648. (EI) 3. Li Shengnan, Liang Qiao, Liu Xinxi, et al. Stoichiometric method of solution porosity of carbonaceous mudstone under dry and wet cycling [J]. China Journal of Highway and Transport,2023,36(02):89-96. (EI) 4. Li Shengnan, Liu Xinxi, Li Yu, et al. Research on deformation characteristics and damage evolution of carbonaceous mudstone during progressive failure process [J]. China Journal of Highway and Transport,2022,35(04):99-107. (EI) 5.Li Sheng Nan, Peng Zhu, Huang Zhong Hua, et al. Time-Dependent Deformation and Long-Term Strength of Carbonaceous Mudstone under Dry and Wet Cycles[J]. Sustainability, 2022, 14(19). (SCI) 6.Li S. N., Huang Z. H., Liang Q., et al. Evolution Mechanism of Mesocrack and Macrocrack Propagation in Carbonaceous Mudstone under the Action of Dry-Wet Cycles[J]. Geofluids,

	2022. (SCI) 7. Liu Xin-Xi, Li Sheng-nan, Zhou Yan-Ming, et al. Study on creep characteristics and long-term strength of high stress argilly siltstone [J]. Chinese Journal of Rock Mechanics and Engineering, 20, 39(01) : 138-146. (EI) 8. Liu Xin-xi, Li Sheng-nan, Xu Ze-pei, et al. Study on creep model of carbonaceous shales under freeze-thaw cycle [J]. China Journal of Highway and Transportation. Journal of Highway Science and Technology, 2019 (11) : 137-145. (EI) 9. Liu Xinxi, Li Sheng-nan, Xu Zepei, et al. 2. Viscoelastic-plastic creep model of high stress argilly siltstone [J]. Journal of Central South University (Natural Science Edition), 2019,50 (05):1210-1220. (EI) 10.Shengnan Li, Jin Chang, Quan Li, et al. Relationship between chemical and physical orrheological of properties asphalt binder during aging[J].Petroleum Science and Technology, (2020)DOI: 10.1080/10916466.2020.1792490. (SCI)
Activity in professional associations in the last 5 years	1. Member of Chinese Society of Mechanics; 2. In 2024, he was appointed as the Young editorial Board member of the Journal of Transportation Science and Engineering. 3. Appointed to the Young Editorial Board of the Journal of Highway and Automobile Transportation in 2024; 4. In 2024, he was invited to give a report on the "Research on the damage evolution mechanism and constitutive model of carbonaceous mudstone under the action of dry and wet cycles" at the Symposium on special geotechnical and engineering problems. 5. In 2024, he was awarded the Outstanding Young Editorial Board of "Traffic Science and Engineering";