导师简介

<table>
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博士生导师</td><td>民族</td><td>汉</td><td>籍　　贯</td><td>山东烟台</td></tr>
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<tr><td>研究方向</td><td colspan="5">复合材料、功能材料、纳米材料等材料的宏微观物理力学性能及应用，先进结构（超材料）的设计和增材制造（3D 打印）、冻土微观传质传热与宏观致灾表征及其高聚物注浆修复理论与技术等</td></tr>
<tr><td>学术头衔/
兼职</td><td colspan="6">河南省侨联青年委员会委员、The executive member of the Marine Engineering Geology Commission (C34)-The International Association for Engineering Geology and the Environment (IAEG)（国际工程地质与环境协会海洋工程地质委员会执委）、中美联合非开挖工程研究中心专家委员会委员、第十三届管道工程与非开挖技术国际研讨会组织委员会秘书长和学术委员会委员、DACOMA-2023 国际会议组委会委员、中国土工合成材料工程协会青年工作委员会委员、中国岩石力学与工程学会海洋工程地质灾害防控分会理事、大坝工程学会混凝土与岩石断裂力学专委会委员、中国岩石力学与工程学会极地岩土力学与工程专业委员会、中国土木工程学会土力学及岩土工程分会青年工作委员会委员、中国水利学会会员、中国土木工程学会会员、中国力学学会会员、国际土力学及岩土工程学会、中国建筑学会新材料结构学术委员会委员等。</td></tr>
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作经历</td><td colspan="6">2004.09-2008.06 西北农林科技大学 水利与建筑工程学院 土木工程 工学学士
2008.09-2011.06 西北农林科技大学 水利与建筑工程学院 结构工程 工学硕士
2011.11-2018.11 德国魏玛包豪斯大学 结构力学研究所 结构工程（计算力学）工学博士
2018.11-2019.08 德国魏玛包豪斯大学 助理研究员
2019.09-2020.06 郑州大学水利科学与工程学院 讲师
2019.10-2022.01 郑州大学水利工程博士后流动站 合作导师：王复明 院士
2020.06-2024.12 郑州大学水利与交通学院 直聘副教授
2024.12 至今　　郑州大学水利与交通学院、黄河实验室（郑州大学） 教授</td></tr>
<tr><td>代表性
科研成果</td><td colspan="6">一、科研项目（部分）
[1] 国家自然科学基金：多因素耦合作用下混凝土排水管道紫外光固化修复材料与结构的全过程工作性态研究，主持；
[2] 国家自然科学基金：非水反应类高聚物注浆材料强度机理的多尺度模拟与试验研究，主持；
[3] 中原英才计划—中原青年拔尖人才：寒区排水管道复合修复理论与技术，主持；</td></tr>
</table>

	[4] 河南省自然科学基金：紫外光固化复合材料性能提升及其修复排水管道理论与技术研究,主持； [5] 河南省高校科技创新人才：非开挖修复材料与技术，主持； [6] 河南省重点研发专项课题：极端低温天气地下管道灾变机理及复合修复材料理论研究与技术，主持； [7] 中国博士后基金特别资助项目：基于高聚物注浆修复的冻土路基冻胀演化机理研究，主持； [8] 中国博士后基金面上资助项目：基于高聚物注浆材料修复的冻土路基冻胀演化机理研究，主持； [9] 河南省留学人员科研择优资助项目：排水管道紫外光固化修复材料与结构的综合性能研究，主持； [10] 河南省科技厅科技攻关项目：高聚物注浆材料成型稳定性的试验与模拟研究，主持； [11] 河南省博士后科研启动项目一等资助：发泡高聚物材料成型稳定性的多尺度试验与理论研究，主持； [12] 省部共建交通工程结构力学行为与系统安全国家重点实验室开放基金：交通工程基础修复高聚物注浆材料静动态力学性能的多尺度研究，主持； [13] 天津大学水利工程仿真与安全国家重点实验室开放基金项目：水利工程高聚物注浆材料修复机理及其力学性能的多尺度研究，主持； [14] 国家自然科学基金联合基金重点项目：高拱坝混凝土循环应力-温-湿耦合模型与长期性能提升方法研究，参与； [15] 安徽省自然科学基金水科学联合基金：混凝土坝渗漏机理及其诊治关键技术研究，参与； [16] 河南省卓越青年创新研究群体项目：城市地下管网安全防护，参与； [17] 中铁七局集团有限公司：复杂工况下冻结暗挖清障辅助盾构下穿既有结构及接收关键技术研究与应用,主持。 二、奖励（部分） [1] 第一届全国博士后创新创业大赛金奖； [2] 全国创新创业优秀博士后； [3] 2022 年 2 月河南省人力资源和社会保障厅个人记功； [4] 2021 年河南省教学成果特等奖：基于“实践育人共享平台”大土木人才培养

	模式探索与实践； [5] 2021 年郑州大学教学成果奖特等奖； [6] 2021 年郑州大学学生评选的“我心中的指导教师”； [7] 华维杯第二届全国大学生农业水利工程及相关专业创新设计大赛特等奖； [8] 华维杯第二届全国大学生农业水利工程及相关专业创新设计大赛优秀指导教师； [9] 2023 年度河南省教育厅科技成果奖优秀科技论文奖一等奖； [10] 2024 年河南省工程建设科学技术成果特等奖。 二、标准和工法（部分） [1] 河南省工程建设标准：城市轨道交通工程盾构始发与接收冻结法端头加固技术规程，主编； [2] 河南省工程建设标准：河南省城镇排水管道非开挖修复标准，主编； [3] 河南省工法：地铁联络通道冻结法施工复合注浆填充工法，主编； [4] 中国市政工程协会团体标准：市政排水管道紫外光固化修复施工技术规程，参编； 三、论文论著（部分,以中科院二区以上为主） [1] Wang Pan, Yongbo Wang, Weiliang Gao, **Chao Zhang***, Cuixia Wang, Hongyuan Fang, Pengjia Zhu, Fuming Wang. Compressive fatigue resistance and damage evolution model of foamed polyurethane grouting materials under different loading characteristics and densities. Construction and Building Materials, 2025, [2] Yongshen Wu, Cuixia Wang*, Caihong Zhang, Yongbo Wang, **Chao Zhang***, Pengjia Zhu, Hongyuan Fang. Redefining surface dynamics: Advanced insights into nanoindentation and morphological variability of foamed polyurethane. Surfaces and Interfaces, 2025 [3] Hongwei Guo, **Chao Zhang**, Hongyuan Fang, Timon Rabczuk, Xiaoying Zhuang. Deep learning to evaluate seismic-induced soil liquefaction and modified transfer learning between various data sources, Underground Space, 2025 [4] 张茜;**张超***;夏洋洋;王翠霞;方宏远. 基于数据驱动与可解释性分析的堤防管涌灾害预测模型. 华北水利水电大学学报（自然科学版）, 2025（网络首

	发） [5] Cuixia Wang, Shi Qiao, **Chao Zhang***, Yangyang Xia, Yongshen Wu. Novel negative Poisson's ratio structure for pipelines' local trenchless rehabilitation: Experimental and simulation study. Engineering Structures, 2025, 326,119531. [6] **Chao Zhang**, Yi Li, Yongshen Wu, Cuixia Wang*, Jian Liang, Zihan Xu, Peng Zhao, Jing Wang. Key Role of Cross-Linking Homogeneity in Polyurethane Mechanical Properties: Insights from Molecular Dynamics, The Journal of Physical Chemistry B, 2024, 128, 12612-12627 [7] Jie Wen, **Chao Zhang***, Yangyang Xia, Cuixia Wang*, Xinxin Sang, Hongyuan Fang, Niannian Wang. UV/thermal dual-cured MWCNTs composites for pipeline rehabilitation: Mechanical properties and damage analysis. Construction and Building Materials, 2024, 450, 138602 [8] **张超**，孙迎娣，夏洋洋，王翠霞*，张晓光，朱钢，赵鹏，方宏远. 埋地管道修复技术碳足迹评价与减排策略研究. 环境工程学报，2024（accepted） [9] Cuixia Wang, Zihan Xu, Yangyang Xia, **Chao Zhang***, Hongyuan Fang*, Kangyan Sun. Water transport mechanism and performance evaluation in polyurethane materials: A state-of-the-art review. Polymer Testing, 2024, 108554 [10] **Chao Zhang**, Kangyan Sun, Yongshen Wu, Cuixia Wang*, Hongyuan Fang, Zihan Xu. Molecular dynamics simulation of water permeation mechanism in polymer grouting material. Materials Today Communications, 2024, 40, 109933. [11] **Chao Zhang**, Shiming Liu, Yangyang Xia, Cuixia Wang*, Shi Qiao, Hongyuan Fang. Experimental and numerical investigations of an auxetic support structure used for local repair of buried pipelines. Construction and Building Materials, 2024, 438, 137127. [12] **Chao Zhang**, Wenbo Zhai, Yangyang Xia*, Cuixia Wang*, Peng Zhao, Bin Li, Yanhui Pan, Hongyuan Fang, Okumura Ummin, Wei He, Nan Deng, Ruitao Zhao, Pengjia Zhu, Xutao Chen. Analysis of the stability of a novel assembled working shaft support structure during pipe jacking

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四、专利（部分）

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注：可加页