
Hejian Zhu

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EDUCATION

Massachusetts Institute of Technology Cambridge, MA
PhD in Geotechnical and Geoenvironmental Engineering Sep 2016 - June 2023

The University of Hong Kong Hong Kong
BEng in Civil Engineering Sep 2012 - June 2016

RESEARCH & TRAINING EXPERIENCE

Massachusetts Institute of Technology Cambridge, MA
Research Assistant, Department of Civil and Environmental Engineering Sep 2016 – June 2023

- Multiscale modelling of clay behaviour [NSF: CMMI-1702689]

5th Marseille Winter School on Multi-Scale Porous Materials Marseille, France
Graduate student trainee Jan 2017

The University of Hong Kong Hong Kong
Undergraduate Research Assistant Sep 2014 – Jan 2016

- Effect of coefficient of friction on arch network in shearing process under low confinement.

AWARDS & FELLOWSHIPS

Maseeh Annual Award for Excellence in Teaching, MIT 2019

MIT International Science and Technology Initiatives-France Travel Grant, MIT 2017

Goldberg-Zoino Fellowship, MIT 2016

Model Building Competetion 2015 2nd Runner Up 2015

- *held by Institution of Civil Engineers (ICE) Hong Kong Association*

CEDARS Certificate of Appretiation, HKU 2015

- *for service as student volunteer at the Centre of Development and Resources for Students (CEDARS) in the University of Hong Kong*

PUBLICATIONS & PRESENTATIONS

H Zhu, AJ Whittle, Lallit Anand, RJM Pellenq. 2023. *Development of a multiscale constitutive theory for elastic deformation of clay*. [To be submitted to Journal of the Mechanics and Physics of Solids]

H Zhu, AJ Whittle, RJM Pellenq. 2023. *Mesoscale origin of clay plasticity through coarse-grained molecular simulation*. [To be submitted to Géotechnique Letters]

H Zhu, AJ Whittle, RJM Pellenq. 2022. *Potential of Mean Force for Face-Face Interactions between Pairs of 2:1 Clay Mineral Platelets*, Langmuir, 38(43):13065-13074.

H Zhu, AJ Whittle, RJM Pellenq. 2021. *Multiscale Framework for Simulating Mechanical Behaviour of Clay from Nano- and Meso- to Macro-scale*, presented at APS March Meeting 2021, online

H Zhu, AJ Whittle, RJM Pellenq, K Ioannidou. 2019. *Mesoscale simulation of aggregation of imogolite nanotubes from potential of mean force interactions*. Mol Phys. 117(22):3445-3455.

H Zhu, AJ Whittle, RJM Pellenq. 2019. *Multiscale modelling of clay aggregate behaviour*, presented at Euroclay International conference on clay science and technology. Paris, France.

Y Meng, **H Zhu**, CY Kwok, M Kuo. 2018. *Effect of coefficient of friction on arch network in shearing process under low confinement*. Powder Tech. 335:1-10

H Zhu, AJ Whittle, RJM Pellenq. 2018. *Multiscale Simulation of Aggregation of Imogolite Nanotubes*, presented at Multi-scale Materials Under the Nanoscope (GDRI, M2UN), Georgetown University, Washington DC.

TEACHING EXPERIENCE

COE 3001 Mechanics of Deformable Bodies, GeorgiaTech 2023 Fall
Instruct advanced undergraduate course on the mechanics and strength of engineering materials and structures.

1.013 Civil Engineering Design Projects, MIT 2021 Fall & 2022 Spring
Coordinated four undergraduate design groups with corresponding faculty members in charge, provided advice on the progress of the projects, and offered help on finding the necessary resources for the projects.

1.037 Soil Mechanics & Geotechnical Design, MIT 2020 Spring
Led recitations and office hours; gave feedbacks on the assignments and the project reports for the undergraduate students.

1.361 Advanced Soil Mechanics & 1.364 Advanced Geotechnical Engineering, MIT 2018 Fall
Led recitations and office hours; provided necessary guidance for graduate students through assignments and geotechnical design projects.

COMMUNITY SERVICES

Reviewer

Geo-Congress 2023 2022
Computers and Geotechnics 2022
Journal of Colloid and Interface Science 2020

Financial Officer

At Asian Club, MIT 2019

English tutor

2014-2015
In a joint programme led by Centre for Applied English Studies (CAES) and Centre of Development and Resources for Students (CEDARS) at the University of Hong Kong

Buddy mentor

2013-2014
In the Buddy Mentor Programme at the University of Hong Kong, helping first-year undergraduates to get accustomed to lives and studies in Hong Kong.