

# Postdoctoral Positions on Experimental and Computational Geomechanics at Zhejiang University

## JOB DESCRIPTION

Within the Computing Centre for Geotechnical Engineering, Department of Civil Engineering of Zhejiang University (QS Ranking 2022: 45<sup>th</sup>) located at Hangzhou, China, we are looking for 5 highly motivated and enthusiastic Postdoctoral Research Fellows.

- **Position 1:** Piled foundations and applications in offshore engineering. The fellow will work on numerical simulations of close-ended and open-ended pile installations, improving the current design methods for determining the loading capacity of piles used in offshore geotechnical engineering. The position offers a great opportunity to collaborate with internationally recognized experts on piled foundations.  
collaborator: Prof. [Zhongxuan YANG](#)
- **Position 2:** Multiscale and multiphysics modelling of granular materials using hybrid methods and/or machine learning approaches. The fellow will work on FEM/DEM, SPH/DEM or LBM/DEM coupling approaches, develop deep learning approaches that can be applied to constitutive modelling of soils and geotechnical boundary value problems.  
Collaborator: Dr [Ning GUO](#)
- **Position 3:** Computational geomechanics, simulation of earthquake processes, fossil energy extraction and carbon dioxide storage. The fellow will develop computational models and conduct numerical research in subsurface geomechanics for carbon geological storage. Particular emphasis will be put on characterizing and predicting the performance of caprocks subjected to Thermo-Hydro-Mechanical loadings.  
Collaborator: Dr [Fushen LIU](#)
- **Position 4:** Innovative and advanced laboratory testing and characterizing mechanical properties of geomaterials. The fellow will conduct laboratory investigations to characterize the mechanical properties of geomaterials, and innovative experiments to reveal the mechanism from either micro- or macro-perspectives. Possible topics include but are not limited to soil liquefaction, soil dynamics, ground improvement, *et al.*  
Collaborator: Dr [Xiao WEI](#)
- **Position 5:** Micromechanics of granular materials, constitutive modelling of soils, strain localisation of granular soils, numerical modelling of large-deformation geotechnical problems. The fellow will work on quantifying fabric evolution of granular materials under complex loadings using numerical simulation methods, construct micromechanics-informed constitutive relations and analyse large-deformation geotechnical problems involving strain localization.  
Collaborator: Dr [Chaofa ZHAO](#)

Your major responsibility as Postdoctoral Research Fellow is to perform your own research in our dynamic research group. In addition to solving scientific problems, you are also expected to contribute to working closely with our PhD students (up to 10% of your working hours).

## YOUR PROFILE

As an ideal candidate:

- You have or will have obtained a PhD degree in a relevant field such as geotechnical, civil or resource engineering, with a deep knowledge of geomechanics.
- You have experience in geotechnical laboratory testing such as triaxial compression and simple shear test, or computational methods including FEM, XFEM, SPFEM, MPM, SPH, DEM, LBM, *et al.*
- You are devoted to working in a multidisciplinary team in which fundamental and applied research cross-fertilize.
- You have demonstrated your ability to collaborate effectively with colleagues and sponsors.
- An appropriate qualification in English together with excellent communication (both verbal and written) skills are required.

## YOUR BENEFITS

- **Salary scale:** Competitive annual salary greater than 350,000¥ (~50,000€), depending on your work experience.
- **Funding opportunities:** We will provide a start-up package and support you to apply for Postdoctoral Fellowships and National Natural Science Funds for Young Scientists.
- **Faculty positions:** We will strongly support you to apply for competitive faculty positions.

## CONTRACT DURATION

- The first contract will be for 2 years; extensions are possible if needed.
- The positions can be started immediately.

## APPLICATION

For your application, you are welcome to choose one or more positions. Please send your application to Dr [Chaofa ZHAO](mailto:chaofa.zhao@zju.edu.cn), chaofa.zhao@zju.edu.cn. The application deadline is **May 31, 2022**.

Your application should consist of:

- Cover letter, emphasizing your specific interest, qualifications, and motivation to apply.
- A full Curriculum Vitae, including your education background, research experience, and scientific achievements.
- Contact details of two persons who can provide references.

For any questions, please feel free to contact Dr [Chaofa ZHAO](mailto:chaofa.zhao@zju.edu.cn), chaofa.zhao@zju.edu.cn.

