

Postdoctoral Research Opportunities in Energy GeoStructures

Dr. Davide Noè Gorini, Assistant Professor at the University of Trento, and Prof. Marco Broccardo, Associate Professor at the University of Trento, are seeking **two highly motivated Postdoctoral Researchers** to join their research group on **Multi-Physics Analysis, Design and Assessment of Energy Infrastructural Networks**. The project aims to push forward the boundaries of **multi-physics numerical and analytical modeling of Geothermal Energy Structures**, with the goal of developing innovative urban energy solutions that meet evolving **energy efficiency** and **mechanical performance** demands.

The **ideal candidate** will hold a strong background in **Geotechnical/Energy Engineering**, with expertise in **multi-physics analysis** and **numerical modeling**. Experience in **Finite Element Analysis (FEA)** and **AI-driven computational techniques** is highly desirable. Proficiency in tools such as **ABAQUS, COMSOL Multiphysics, MATLAB/Simulink** is particularly valued. More in general, candidates with advanced programming skills are encouraged to apply.

Selected **Postdoctoral Researchers** will be involved in a highly multidisciplinary project and will contribute to:

- i) the development of cutting-edge **multi-physics analytical and numerical models of energy geostructures**;
- ii) **data-driven analysis** and **machine learning applications**;
- iii) the formulation and solution of **optimization problems**.

Candidate Profile

We are looking for candidates with:

- A PhD in **Geotechnical Engineering, Energy Engineering, Structural Engineering**, or related fields;
- Background in **numerical modelling, programming** and **AI-based methodologies**;
- Experience with **multi-physics simulations**;
- Experience with **probabilistic methods, reliability and uncertainty quantification** is considered an asset;
- Advanced level of English and collaborative skills.

Contract & Application

- **Position:** Postdoctoral Researcher
- **Duration:** maximum of two years
- **Location:** Department of Civil, Environmental and Mechanical Engineering, University of Trento, Trento, Italy
- **Start date:** Spring/Summer 2025

For full consideration, please submit your application as soon as possible.

Interested applicants are preliminary invited to send to Dr. Davide Noè Gorini (davidenoe.gorini@unitn.it) the following material:

1. **Cover Letter** – A formal introduction explaining your interest in the position and how your background aligns with the research (no more than two pages).
2. **Curriculum Vitae** – Detailing your academic background, research experience, publications, and industry experience.
3. **List of References** – Names and contact information for individuals (minimum two, maximum three) who would provide letters of recommendation upon request.
4. **List of Published Papers** (if applicable) – Include journal or conference publications.
5. **English Proficiency Test Scores** – IELTS or TOEFL scores, if applicable.

Should you require any additional information, do not hesitate to reach out at: davidenoe.gorini@unitn.it