
Next Generation of Innovative Materials Specialists Project Description and Implementation

Overview: The "Next Generation of Innovative Materials Specialists" project aims to create a multidisciplinary professional program to train future workers in the civil and infrastructure sector. The primary goal is to prepare and utilize innovative materials for soil improvement, quantifying and reducing their environmental impact.

Partners:

- **GEEG - Geotechnical and Environmental Engineering Group, Italy**
- **DTU - Technical University of Denmark, Denmark**
- **SAPIENZA University of Rome, Italy**

Objectives:

- Train participants in laboratory settings for practical applications of innovative materials
- Provide a critical understanding of the environmental impact of traditional and innovative construction materials
- Equip participants with the skills to evaluate optimal solutions for specific cases, considering environmental consequences

Activities overview:

- Start Date: 15/09/2024 - End Date: 15/07/2025
- 10 selected participants
- 60 hours of blended in person / online session
- 2 Laboratory practical training (4 days each) in Rome (Italy) and Copenhagen (Denmark)
- All travel and accommodation costs covered
- Attendance certificate

1. Blended Interactive Sessions

- **Duration:** 60 hours
- **Estimated Dates:** 15/09/2024 - 31/12/2024

The blended interactive sessions will cover theoretical and practical aspects. **Six sessions and two virtual lab tours will be organized, conducted by researchers and professors from Sapienza, GEEG, and DTU. The sessions will include:**

- General introduction of the project and partners (1.5 hours each)
- Virtual tour of the DTU lab (7 hours)
- Virtual tour of the GEEG lab (7 hours)
- Binder and aggregate production (4 hours)
- Technical lectures and laboratory tests on aggregates and mechanical properties (36 hours in total, divided between DTU and GEEG)

2. Laboratory Practical Training at DTU

- **Duration:** 4/5 days
- **Estimated Dates:** 31/01/2025 - 16/02/2025

This activity includes **organizing practical training for participants at DTU's geotechnical laboratory in the field of characterization and mechanical testing of innovative materials**. The goal is to provide detailed knowledge on the physical and mechanical properties of innovative materials, as an alternative to cement. The practical training will allow participants to gain hands-on experience with these materials through small-scale laboratory tests.

3. Laboratory Practical Training at GEEG-lab

- **Duration:** 4/5 days
- **Estimated Dates:** 09/06/2025 - 14/07/2025

This activity includes **organizing practical training for participants at the GEEG geotechnical laboratory in the field of applications of innovative materials and efficacy testing in soil improvement**. The goal is to provide detailed knowledge on the physical and mechanical properties of innovative materials and their effective use on-site by simulating medium-scale injection tests in the laboratory.

Target Groups:

- 10 participants will be selected on the basis of spontaneous applications
- participants should be +18 with at least a vocational high school certificate and basic English knowledge
- The project aims for 40% male and 60% female participation, dedicated places are provided for foreigners and second-generation immigrants.

Participation and Enrollment:

- Interested people can **apply by sending an email to projects@geeg.it** with a cover letter, a reference letter, and their CV.
- The selection process includes resume evaluation and interviews conducted by a scientific committee comprising representatives from the partner organizations.

Expected Outcomes:

- Participants will gain practical experience in material preparation, environmental impact assessment, and soil stabilization techniques.
- Enhanced employability in the civil and infrastructure sector with specialized knowledge in innovative materials.

Project Benefits:

- Promotes inclusivity by providing training opportunities to underrepresented groups.
- Fosters collaboration between academia and industry to address environmental challenges in construction.
- Supports the European Union's sustainability goals by reducing the environmental impact of construction materials.