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Supervisor's name : DAOUADJI

Given names : Ali

Status (prof., assistant prof., ...) : Professor

Laboratory : Civil and Environmental Engineering - Soils-
Materials-Structures Integrity and Durability Website address : N/AInstitution : Institut National de la Recherche Appliquée (INSA)
Lyon Website address : www.insa-lyon.fr

Scientific competence of the supervisor:

Civil engineering, Geomechanics, Soil stability, Constitutive modeling, Design of experiments, granular materials, Mortar and Concrete

Two major publications in the field proposed for the PhD :

1. A Daouadji, PY Hicher, A Rahma (2001) An elastoplastic model for granular materials taking into account grain breakage, European Journal of Mechanics-A/Solids 20 (1), 113-137
2. A Daouadji, F Darve, et al., (2011) Diffuse failure in geomaterials: Experiments, theory and modelling, International Journal for Numerical and Analytical Methods in Geomechanics, 35(16), 1731-1773

Website address of the personal page : ali.daouadji@insa-lyon.fr

Description of the research work proposed for a PhD Topic # (see list) : IV-12

Title : Development of new design method for green concrete

Subject :

The objective of this project is the development of adequate design method of green concrete, which includes selected by-products. The effort will be made on the optimization of the compactness of the granular skeleton and to study instabilities and failure that may occur. An extensive characterization of targeted by-products, in the context of concrete production, will be carried out. From the observed results, specific design methods will be proposed in order to optimize the use of by-products and make the green concrete cost effective. The durability of the designed concretes will be assessed throughout the measurement of few indicators.

Keywords :

Concrete, granular materials, recycling, by-products, durability

Expected collaborations :

Prof. R. ZENTAR from Ecole des Mines de Douai (France)

Background required from the applicant :

Civil engineering, concrete, granular materials

Existence of a PDF file detailing the proposal ("yes" or "no") : yes

(see guidelines on the website www-csc.utt.fr)