

# SUMMIT

## RESEARCH

### Book of Abstracts

Book of abstracts of the Research Summit 2022  
July 13-15 2022  
University of Aveiro, Portugal

# Research Summit 2022

## Universidade de Aveiro

Book of abstracts of the Research Summit 2022  
under the theme "Open Science"

held in Aveiro, Portugal  
13-15 July 2022

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A publication of:

**UNIVERSIDADE DE AVEIRO**

Aveiro, Portugal

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### Ficha técnica

Título: Research summit 2022 - Book of abstracts  
Coordenadores: Artur M.S. Silva, António L. Teixeira, A. Gil Andrade Campos  
Editora: UA Editora – Universidade de Aveiro  
1ª edição – julho 2022

ISBN: **978-972-789-795-7**  
DOI: <https://doi.org/10.48528/6dz9-d129>

## **Preface**

The Research Summit 2022 took place on the 13th, 14th and 15th of July, under the theme "Open Science". It is a forum to foster an important debate among the research community of the University of Aveiro and to increase collaboration, advancing the state of the art and enhancing research efforts on campus.

Assuming a greater return to academia, Research Summit 2022 also adopts a face-to-face model on the first day (plenary) and essentially face-to-face on the following days (presentations by PhD students and 1st and 2nd cycle students).

This book of abstracts and proceedings, of the Research Summit 2022, are the result of remarkable contributions of young scientists and PhD students working in the topics of the doctoral programs of the University of Aveiro.

Although the Research Summit 2022 is aimed at young scientists, senior scientists have contributed to the success of the conference by their contributions and promoted discussions as well as collaboration in the research works, incorporated in the book of abstracts and proceedings. The presence of senior scientists and thesis supervisors is very fruitful for all participants, and it is hoped that young researchers and PhD students can take profit from this experience.

The organizers hope that this Research Summit 2022 can represent a remarkable opportunity for a fruitful exchange of ideas between the participants, and a landmark in the history of the Forums in the University of Aveiro.

A. Silva

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Aveiro, Portugal, July 2022.

## Constitutive models for numerical analysis of the short- and long-term behavior of geosynthetics and mechanical damage

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**Abstract.** *The objective of this research is to analyse the tensile response of geosynthetics, apply constitutive equations, and propose values for model parameters to represent the nonlinear behaviour of these materials in the short-term and the long-term. Data for specimens submitted to mechanical damage, abrasion damage, and mechanical damage followed by abrasion damage will be analysed. Nonlinear regressions of the experimental results will be performed to fit the load-strain curves to constitutive equations. For each geosynthetic, the results of damaged specimens will be statistically compared to those of the undamaged specimens to observe the influence of the induced damage on the tensile behaviour of the materials over time. Experimental results will be statistically compared with those obtained by the constitutive models to verify if the tensile properties and the model parameters are properly estimated.*

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