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Editors

Selected Papers from ICIR EUROINVENT - 2023

International Conference on Innovative
Research

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Foreword

This volume contains selected peer-reviewed articles presented at the International Conference on Innovative Research ICIR EUROINVENT 2023 Conference. The event was held in Iași, România, from the 11th to the 12th of May 2023.

The organizers are the Romanian Inventors Forum; Faculty of Materials Science and Engineering, The “Gheorghe Asachi” Technical University of Iasi, Romania; ARHEOINVEST Platform, Alexandru Ioan Cuza University of Iasi; Centre of Excellence Geopolymer and Green Technology (CEGeoGTech), Universiti Malaysia Perlis (UniMAP) and Department of Physics, Czestochowa University of Technology, Czestochowa, Poland, with the support of University Malaysia Terengganu.

The ICIR Conference is organized under the auspices of EUROINVENT. This is a joint event promoting creativity in a European context, by displaying the contributions of consecrated schools from higher education and academic research and also of individual inventors and researchers.

The EUROINVENT International Conference on Innovative Research (ICIR) brings together leading researchers, engineers and scientists who will present actual research results in the field of Materials Science and Engineering.

The conference aims to provide a high-level international forum for researchers, engineers and scientists to present their new advances and research results in the field of materials science and engineering.

The volume covers all the aspects of materials science, from synthesis and characterization of materials to procedures and technologies for materials engineering, as well as materials application and their involvement in the life sciences.

All the papers have been reviewed by at least two expert referees in their relevant topic disciplines, and only 18 were accepted. The papers selected for the volume depended on their quality and relevancy to the conference. All articles were checked with plagiarism software.

The conference was very dynamic with many questions and replies from the participants. At the conference closure ceremony, on the decision of the Scientific Board, Best Oral Presentation Award was presented next to two Best Poster Awards.

The editors hope that this volume will provide the reader with a broad overview of the latest advances in the field of materials science and engineering and that they will be a valuable reference source for further research.

The editors would like to express their sincere appreciation and thanks to all the committee members of the ICIR 2023 for their tremendous efforts.

Finally, the editors would like to thank all the authors for their contribution to this valuable volume.

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Mapping of Geological Structures: Potential Geohazards in Tropical Highlands

[Nurfirdaus Sapawie](#) , [Afikah Rahim](#), [Nazri Ali](#), [Hamzah Hussin](#), [Nor Shahidah Mohd Nazer](#), [Agus Winarno](#), [Deddy Tanggara](#) & [Asmawi Hisham](#)

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Abstract

Landslides in tropical hilly terrain have become a threat to the community. The difficulty of predicting future landslides can be overcome by detecting signs of past landslides especially in tropical hilly terrain like Cameron Highland, Pahang Darul Makmur. Basic skills in geomorphology and remote sensing are needed in detecting and mapping past landslides due to its geomorphological features that have been modified because of erosion, weathering, and development. However, an approach by using remote sensing and Geographic Information System techniques, the detection of geomorphological features can be done. Among the features that can be seen is hummocky topography, existence of articulating head scarps, crowns, main scarp, side scarps and convex hillslopes followed by concave hillslopes. The activation of inactive landslides is usually caused by natural factors and human factors. Natural factors consist of high rainfall distribution which weakens the soil structure and causes physical and chemical weathering process or rate to increase. About 40% of slopes in the study area with the steepness of 25° which is identified as the main natural factor to slope failures. Human factors comprise of the construction of permanent and large-scale infrastructure which exerts load hence weakening the slope strength. This causes a growth of tension cracks which are perpendicular to the slope face and is expanding up to this day.

Keywords

Landslide **Geohazard** **Slope failure**