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GEOINFORMATICS, REMOTE SENSING, AND ARTIFICIAL  
INTELLIGENCE (AI)**  
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## FOREWORD

It is our honor to present the 25<sup>th</sup> edition of the *SGEM GeoConference Proceedings 2025*. These peer-reviewed proceedings reflect the scientific work presented at the SGEM GeoConference - an international platform where **Geosciences and STEM** unite to create knowledge that supports a more sustainable and responsible future. SGEM stands on a foundational belief: science is valuable not because it is new, but because it is **true, useful, and serving society**.

**This volume 25 / issue 2.1: *Geoinformatics, Remote Sensing, and Artificial Intelligence (AI)* - brings together research studies on AI-based modeling, predictive analytics, Earth observation, geomatics, GNSS-based accuracy, drone and satellite data processing, remote sensing, geodetic infrastructure, and GIS solutions for monitoring Earth systems. The contributions directly support the United Nations Sustainable Development Goals, including SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), and SDG 15 (Life on Land).**

In the era where digital transformation meets sustainability, **Geoinformatics and AI are redefining how we understand the planet**. High-precision surveying supports resilient infrastructure; remote sensing enables environmental protection; spatial modeling anticipates risk; and AI transforms data into decision-making tools. From shoreline dynamics and land deformation monitoring, to renewable energy forecasting and climate-related modeling, the technologies featured in this volume demonstrate how data science accelerates sustainable development. **Where STEM offers innovation, Geosciences give it direction - anchoring progress in responsibility and respect for Earth.**

All manuscripts included in these proceedings underwent a rigorous **double-blind peer-review** conducted by independent experts. Only papers demonstrating scientific integrity, originality, and meaningful contribution were accepted for publication. Every accepted manuscript receives an individual **Crossref DOI** and is permanently archived

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**Demonstrating geographical and disciplinary diversity**, the SGEM GeoConference unites researchers, professionals, and emerging scholars from **over 25 countries across multiple continents, including developed and developing nations and diverse research traditions**. What makes SGEM unique is its profound commitment to its core mission - **promoting Sustainability, fostering progress in Geosciences and Education, and supporting continuous scientific development**. Here, **the Earth** is not only studied - **it is respected**.

On behalf of the Editorial Board and the SGEM Scientific Committee, we express our sincere gratitude to all authors for their trust, to the reviewers for safeguarding scientific quality, and to all institutions supporting this global scientific initiative. Together, we transform knowledge into impact and ideas into progress.

We wish you inspiring reading and meaningful scientific achievements.

**Sincerely yours,**

**Prof. Dr. hab. oec. Baiba Rivza**

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