

# Special Issue

## Thermal Evolution of Sedimentary Basins: From Temperature Analysis to Applications

### Message from the Guest Editors

The thermal evolution of sedimentary basins has been studied in various geoscientific fields and is associated with the interplay of geodynamic, tectonic, structural and sedimentological processes. The major mechanisms of sedimentary basin formation are derived from changes in the lithospheric thermal structure, including crustal-scale thinning and thickening. Temperature variation at all stages of basin evolution is considered a critical parameter in geoscientific research. These processes are crucial to exploration campaigns for hydrocarbon accumulation and mineral deposits. Temperature analysis in sedimentary basins has received attention due to its implications on potential targets for the temporary or long-term storage of geothermal energy, carbon dioxide (CO<sub>2</sub>) and nuclear waste. This Special Issue aims to present and integrate our knowledge on different aspects in all fields of the temperature and thermal evolution of sedimentary basins, which include geoscientific investigations as well as industrial applications. We welcome contributions to discuss the observations, modeling, case studies and challenges derived from geological and geophysical datasets.

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### Guest Editors

Dr. Eun Young Lee

Department of Geology, University of Vienna, 1090 Vienna, Austria

Dr. Darko Spahić

Institute for Multidisciplinary Research, University of Belgrade, Kneza Višeslava 1, 11000 Belgrade, Serbia

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### Deadline for manuscript submissions

closed (31 December 2024)



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Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[geosciences@mdpi.com](mailto:geosciences@mdpi.com)

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### Message from the Editor-in-Chief

Understanding the Earth's origin and its bio-geological evolution, the multiple implications of the geosciences (as a coherent set of interconnected disciplines), and the sociocultural and ethical interdisciplinary approaches, will be crucial for a better understanding of Nature, and also for undertaking scientifically based political decisions.

We are committed to drive *Geosciences* to a position in which it is recognized for its high-quality, cutting-edge research and scientific influence, and strongly encourage and invite your participation and manuscripts.

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### Editor-in-Chief

Prof. Dr. Alberto G. Fairén

1. Centro de Astrobiología, CSIC-INTA, Madrid, Spain
2. Department of Astronomy, Cornell University, Ithaca, NY, USA

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