

Advances in Science, Technology & Innovation  
IEREK Interdisciplinary Series for Sustainable Development

Attila Çiner · Stefano Naitza · Ahmed E. Radwan · Zakaria Hamimi ·  
Federico Lucci · Jasper Knight · Ciro Cucciniello · Santanu Banerjee ·  
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Matteo Gentilucci · Dionysia Panagoulia · Helder I. Chaminé ·  
Maurizio Barbieri · Zeynal Abiddin Ergüler *Editors*

# Recent Research on Sedimentology, Stratigraphy, Paleontology, Geochemistry, Volcanology, Tectonics, and Petroleum Geology

Proceedings of the 2nd MedGU, Marrakesh 2022  
(Volume 2)

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# Advances in Science, Technology & Innovation

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**ASTI series has now been accepted for Scopus (September 2020). All content published in this series will start appearing on the Scopus site in early 2021.**

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# Recent Research on Sedimentology, Stratigraphy, Paleontology, Geochemistry, Volcanology, Tectonics, and Petroleum Geology

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2022 (Volume 2)



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## About the Conference

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### About MedGU



### **Steps Toward the Creation of a Mediterranean Geosciences Union (MedGU)**

Mediterranean Geosciences Union (MedGU) aims to create a unique federation that brings together and represents the Mediterranean geoscience community specializing in the areas of Earth, planetary, and space sciences.

MedGU will be structured along the lines of American Geophysical Union (AGU) and European Geosciences Union (EGU).

The plan is to establish a large organization for the Mediterranean region that is more influential than any one local geoscience society with the objective of fostering fundamental geoscience research, as well as applied research that addresses key societal and environmental challenges.

MedGU's overarching vision is to contribute to the realization of a sustainable future for humanity and for the planet.

The creation of this union will give the Earth sciences more influence in policy-making and in the implementation of solutions to preserve the natural environment and to create more sustainable societies for the people living in the Mediterranean region. It is hoped that the union will also provide opportunities to Mediterranean geoscientists to undertake interdisciplinary collaborative research. MedGU plans to recognize the work of the most active geoscientists with a number of awards and medals.

Although MedGU has not yet been officially inaugurated, its first annual meeting was organized in November 2021 in Istanbul (MedGU-21). This has provided a forum to achieve a consensus for the formation of this non-profit international union of geoscientists. Membership will be open to individuals who have a professional engagement with the Earth, planetary, and space sciences and related studies, including students and retired seniors.

Nabil Khélifi (MedGU Founder, Germany) and Attila Çiner (MedGU Interim President, Turkey) in collaboration with Abdelaziz Mridekh (MedGU-22 Local Chair, Morocco) have taken an ambitious approach to the launch of the second MedGU Annual Meeting 2022 and hope to develop it in the near future into the largest international geoscience event in the Mediterranean and the broader MENA region. Its mission is to support geoscientists based in this region by establishing a Global Geoscience Congress.

It is expected that hundreds of participants from all over the world will attend this second MedGU Annual Meeting 2022, making it one of the largest and most prominent geosciences events in the region. So far, over 1300 abstracts have been submitted from 95 countries. The meeting's sessions will cover a wide range of topics with more details available on the conference tracks.

This second 2022 Annual Meeting will have a "hybrid" format, with both in-person and virtual participation. Springer, its official partner, will publish the proceedings in a book series (indexed in Scopus) as well as a number of special issues in diverse scientific journals (for more details, see Publications). The official journal of MedGU is *Mediterranean Geoscience Reviews* (Springer).

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## Conference Tracks

The scientific committee of the MedGU invites research papers on all cross-cutting themes of Earth sciences, with a main focus on the following 18 conference tracks:

- Track 1. Atmospheric Sciences, Meteorology, Climatology, Oceanography
- Track 2. Biogeochemistry, Geobiology, Geoecology, Geoagronomy
- Track 3. Earthquake Seismology and Geodesy
- Track 4. Environmental Earth Sciences
- Track 5. Applied and Theoretical Geophysics
- Track 6. Geo-Informatics and Remote Sensing
- Track 7. Geochemistry, Mineralogy, Petrology, Volcanology
- Track 8. Geological Engineering, Geotechnical Engineering
- Track 9. Geomorphology, Geography, Soil Science, Glaciology, Geoarchaeology, Geoheritage
- Track 10. Hydrology, Hydrogeology, Hydrochemistry
- Track 11. Marine Geosciences, Historical Geology, Paleoceanography, Paleoclimatology
- Track 12. Numerical and Analytical Methods in Mining Sciences and Geomechanics
- Track 13. Petroleum and Energy Sciences and Engineering
- Track 14. Sedimentology, Stratigraphy, Paleontology, Geochronology
- Track 15. Structural Geology, Tectonics and Geodynamics, Petroleum Geology
- Track 16. Special Session on Astrogeology, Impact Craters and Meteorites
- Track 17. Special Session on climate and sea-level change during the Cenomanian-Turonian Anoxic Event: Synthesis of sedimentological, micropaleontological and geochemical records
- Track 18. Special Session on hydrogeological and climatic risks, their management and the effect of climate change on groundwater quality.

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## Preface

The proceedings of the 2nd Mediterranean Geosciences Union (MedGU-2) held in Marrakesh onsite and online in November 2022 consisted of four volumes titled:

Proceedings Volume 1: Recent Advancements from Aquifers to Skies in Hydrogeology, Geoecology, and Atmospheric Sciences

Proceedings Volume 2: Recent Research on Sedimentology, Stratigraphy, Paleontology, Geochemistry, Volcanology, Tectonics, and Petroleum Geology

Proceedings Volume 3: Recent Research on Geotechnical Engineering, Remote Sensing, Geophysics and Earthquake Seismology

Proceedings Volume 4: Recent Research on Environmental Earth Sciences, Geomorphology, Soil Science and Paleoenvironments

These volumes are based on the accepted conference papers for either oral/poster presentations or selected for online publication during the MedGU-2.

This second volume contains 76 papers related to (1) Sedimentology Stratigraphy and Paleontology, (2) Mineralogy and Petrology, (3) Geodynamics, Tectonics, Structural Geology, Petroleum Geology, (4) Geochemistry and Volcanology, and (5) Geoenergy Science and Engineering. The content of these research studies would provide new scientific knowledge to further understand recent advances in the above-mentioned fields. The proceedings of the MedGU-2 are of interest to all researchers, specialists, and students in all areas of geosciences.

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