# Special Issue

# Advances in Petroleum Exploration and Application

### Message from the Guest Editors

With global petroleum exploration extending into deep water, ultra-deep regions, and complex basins, and the rise of shale oil and gas, the industry has seen significant technological and methodological innovations. These advances enhance efficiency, accuracy, and environmental sustainability, reflecting the industry's adaptation to evolving energy demands and environmental challenges. The integration of advanced technologies and sustainable practices is vital for the industry's future and its role in global energy. This Special Issue will explore a range of theoretical and technological advances in petroleum exploration and development, including: (1) Earth System Science and Deep-Time Digital Earth (DDE)-based basin evolution, focusing on deep mantle/crustal processes and sedimentary basin evolution, (2) deep learning and big data in reservoir modeling, (3) innovative unconventional resource development, (4) novel reservoir simulation and modeling, (5) carbon capture, utilization, and storage (CCUS), and (6) energy transition and integration, emphasizing the role of renewable energy sources and hydrogen in the future energy mix.

### Guest Editors

Prof. Dr. Keyu Liu

Dr. Mingming Tang

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### Deadline for manuscript submissions

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## Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

## Editor-in-Chief

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