



# Frontiers of Earth Science

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Call for Papers, Special Issue on

## Advances in CO<sub>2</sub> Geological Storage and Utilization

All over the world, with the intense longing for carbon emission reduction and the demand for clean energy, a promising and far-reaching technology called CO<sub>2</sub> geological storage and utilization (CGSU) has attracted increasing attention. This CGSU technique enjoys huge potential and broad prospect, because it usually enables dual rewarding consequences – to sequester CO<sub>2</sub> and to acquire energy from geological formations, such as geothermal rock, oil and gas reservoirs. In fact, the CGSU has been followed by interest of scientists all around world since geological storage was first proposed in the 1970s as a way to dispose of the CO<sub>2</sub>. Meanwhile, the CGSU technique is not mature enough and usually involves a complicated THMC coupled process, making it necessary to deploy more insightful investigations to boost the development of CGUS technique in a robust, safe and cost-effective manner. Basically, this theme is expected to enhance the knowledge about the crucial role of CGSU in achieving the carbon emission reduction - an issue concerned to the world.

Therefore, this special issue tends to present newest achievements regarding the CGSU, such as the theory expansion, economic analysis, experimental investigation and numerical simulation. We invite prospective authors to submit the original research article and review article related to the CGSU technique.

### **Potential topics of this special issue will include, but are not limited to:**

1. CO<sub>2</sub> storage in geological formation, like coal seam, saline aquifer, and depleted oil/gas reservoir.
2. CO<sub>2</sub> utilization in geological energy system to enhance oil/gas recovery (EOR/EGR), to enhance geothermal system (EGS), and to develop natural gas hydrate (NGH) resources, etc.
3. Novel methodology for CO<sub>2</sub> mineralization and utilization in geological formation.
4. Scientific assessment on the market, economy and risk related to the CGSU process.

The contributions should be original and have not been published or submitted elsewhere. Papers published or submitted for conference publications may be considered subject to significant extension to their original version. Substantive research and relevant-for-practice papers will be preferred. Review articles around the topics are also encouraged.

## **Guest Editors:**

### **Dr. Yanbin Yao**

Professor, School of Energy Resource, China University of Geosciences, Beijing

Email: [yyb@cugb.edu.cn](mailto:yyb@cugb.edu.cn)

### **Dr. Jun Liu**

Associate Professor, Institute of New Energy and Low-Carbon Technology, Sichuan University

Email: [j.liu@scu.edu.cn](mailto:j.liu@scu.edu.cn)

### **Dr. Zhaohui Lu**

Professor Senior Engineer, Chongqing Institute of Geology and Mineral Resources

Email: [luzhaohui929@126.com](mailto:luzhaohui929@126.com)

### **Dr. Peng Zhao**

Associate Professor, College of Architecture and Environment, Sichuan University

Email: [zhaopeng136@scu.edu.cn](mailto:zhaopeng136@scu.edu.cn)

### **Dr. Yunzhong Jia**

Researcher, Department of Earth Sciences, Uppsala University, Sweden

Email: [yunzhong.jia@geo.uu.se](mailto:yunzhong.jia@geo.uu.se)

## **Schedule for this special issue**

1. Announcement circulation: November 1st, 2021
2. Paper submission open: November 1st, 2021 to September 15th, 2022
3. Papers due: September 15th, 2022
4. Reviews back to authors: September 30th, 2022
5. Paper revisions due: October 15th, 2022
6. Notification of final acceptance: October 31st, 2022
7. Publication in Issue 1, 2023

**Online Submission:** <https://mc.manuscriptcentral.com/fesci>

\*Please noted to choose the ‘**Type**’ as ‘Advances in CO<sub>2</sub> Geological Storage and Utilization’ when submitting the manuscript.