



Reservoir Science: One Year On – Achievements, Challenges, and Future Prospects

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Abstract

Since its launch in 2025, *Reservoir Science* (RS) has completed its first year of development. This editorial reviews the journal's progress over the past year, analyzes current challenges, and outlines future strategic directions. In the past year, RS has published 18 high-quality papers contributed by 63 authors from 7 countries and regions (as of May 30, 2026). The journal has been indexed in CAS. Adopting an Open Access model (CC BY), RS has established an international editorial board and published research covering reservoir exploration, characterization, CCUS, geothermal energy, underground hydrogen storage, reservoir materials science, environmental science, and artificial intelligence applications. While these early achievements are encouraging, as a young journal RS faces challenges in enhancing international visibility, attracting high-impact submissions, and maintaining quality across multidisciplinary fields. Looking ahead, the journal will focus on securing broader indexing, improving publication quality, embracing responsible AI tools, cultivating flagship research themes, and supporting early-career researchers. RS aims to

become a leading global platform for reservoir science, fostering interdisciplinary innovation for sustainable subsurface energy systems. We warmly invite scholars worldwide to contribute to this shared vision.

Keywords: *Reservoir Science*, journal editorial, one-year progress, international open access journal, CAS.

1 Introduction

The global energy system is undergoing a profound transition. The pursuit of carbon neutrality, sustainable energy development, and digitalization is fundamentally reshaping the exploration, reservoir characterization, development, and lifecycle management of subsurface resources [1]. Traditionally rooted in petroleum engineering and geosciences, reservoir science has undergone significant expansion in scope. It now encompasses carbon capture, utilization and storage (CCUS), geothermal energy extraction, underground hydrogen storage, natural gas hydrates, intelligent reservoir management systems, as well as reservoir-related exploration, materials science, and environmental science. Against this backdrop, *Reservoir Science* (RS, ISSN: 3070-2356) was launched in 2025 to establish an international, high-impact interdisciplinary platform dedicated to disseminating cutting-edge scientific and engineering advances related to subsurface reservoirs



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and energy-related technologies.

As Editors-in-Chief, we are pleased to take this opportunity to reflect on the journal's progress during its inaugural year. Although still in its early stages of development, *RS* has steadily evolved into an emerging international forum, attracting contributions from researchers, engineers, and industry professionals worldwide. Through the collective efforts of the editorial board, reviewers, authors, and readers, the journal has established a solid foundation for sustained growth and enhanced international recognition.

2 Progress and Achievements

Over the past year, *RS* has remained committed to publishing rigorous, innovative, and high-impact research across a broad spectrum of topics in reservoir science and engineering [2, 3]. These include reservoir exploration, characterization and modeling, fluid flow and transport processes, enhanced recovery techniques, CCUS, geothermal reservoirs, unconventional resources, digital reservoir technologies, reservoir materials science, environmental impacts and sustainability, as well as integrated reservoir management [4–6]. Key Quantitative Achievements Include:

- Publication of 18 high-quality papers, with contributions from 63 authors across 7 countries and regions (as of May 2026).
- Total article views exceeding 81,193, and downloads surpassing 16,314 (as of May 2026).
- Recent inclusion in Chemical Abstracts Service (CAS). Several articles have demonstrated notable citation impact.
- Establishment of an international editorial board comprising experts from diverse academic and industrial backgrounds, fostering interdisciplinary collaboration and global scientific exchange.
- Adoption of an Open Access publishing model (CC BY license), ensuring that research findings are freely accessible to researchers, practitioners, and policymakers worldwide, thereby maximizing societal impact.

The published papers address a wide range of contemporary challenges in reservoir science and engineering. These include reservoir exploration and characterization, numerical simulation, enhanced oil and gas recovery technologies, CCUS and

geological carbon sequestration, geothermal reservoir development, natural gas hydrates, underground hydrogen storage, reservoir geomechanics and multiphysics coupling, reservoir materials, environmental aspects of reservoir operations, as well as artificial intelligence and machine learning applications in reservoir engineering. An encouraging trend is the increasing number of submissions related to energy transition technologies, reflecting the evolving priorities of the global energy community.

3 Challenges Facing the Journal

While these early achievements are encouraging, we recognize that *RS* remains a young journal operating in an increasingly competitive scholarly publishing landscape. Sustained development requires a clear understanding of the challenges ahead, which primarily include the following:

- **Enhancing International Visibility:** Compared with well-established journals in petroleum engineering, geosciences, and energy systems, *RS* still has considerable room for improvement in global visibility and its ability to attract high-impact submissions. It is essential to attract a greater number of contributions from leading research institutions worldwide.
- **Attracting High-Impact Research:** Although submission volume continues to increase, the journal must further strengthen its ability to attract groundbreaking studies, authoritative review articles, and innovative interdisciplinary research with enduring scientific significance. The journal's future reputation will depend more on the originality, scientific significance, and citation impact of the research it publishes than on publication volume alone.
- **Maintaining Quality Consistency Across Disciplines:** Reservoir science is becoming increasingly interdisciplinary in nature. While this diversity offers opportunities for innovation, it also presents challenges in maintaining consistent peer-review standards and ensuring scientific rigor across diverse disciplines.
- **Responding to Rapid Technological Change:** Artificial intelligence, digital twin technologies, big data analytics are fundamentally transforming scientific and engineering research paradigms. The journal must adapt rapidly while upholding the highest standards of publication ethics and scientific integrity.

4 Strategic Roadmap for Future Development

In response to these challenges, the editorial board has developed a strategic vision to guide the journal's future development.

4.1 Advancing Toward International Indexing and Academic Recognition

In the coming years, our priorities include enhancing publication quality and scientific impact, expanding the international authorship and readership, improving citation performance and research visibility, strengthening editorial and peer-review standards, and establishing a stable and sustained record of excellence. We will actively pursue inclusion in major databases such as Scopus, Web of Science, and EI, with the aim of achieving JCR indexing and progressively improving both the Impact Factor and CiteScore.

4.2 Embracing Artificial Intelligence in Scholarly Publishing

Artificial intelligence offers unprecedented opportunities to enhance the efficiency and effectiveness of scholarly publishing. *RS* will actively explore the responsible application of AI-assisted technologies in areas such as reviewer selection, manuscript classification, language quality assessment, plagiarism detection, and editorial workflow optimization. At the same time, all editorial decisions will remain subject to human oversight to ensure sound scientific judgment and uphold ethical integrity.

4.3 Cultivating Distinctive Research Themes

To establish a distinct academic identity, *RS* will focus on developing flagship research directions aligned with global scientific priorities and emerging industrial needs, including the following:

- Reservoir exploration and characterization;
- CCUS and geological carbon sequestration;
- Natural gas hydrates and unconventional energy resources;
- Geothermal reservoir engineering;
- Underground hydrogen storage;
- Reservoir geomechanics and multiphysics coupling;
- Reservoir materials science;

- Environmental science and sustainability in reservoir operations;
- Artificial intelligence, digital twins, and intelligent reservoir systems;
- Integrated subsurface energy systems for carbon neutrality.

Through special issues, invited review articles, and international collaborations, the journal aims to establish itself as a leading platform in these rapidly evolving fields.

4.4 Supporting the Next Generation of Researchers

The future of scientific advancement depends on early-career researchers who contribute fresh ideas, perspectives, and technological innovations. *RS* is committed to fostering an inclusive academic environment through constructive peer review, mentorship, and opportunities for international collaboration, thereby nurturing the long-term vitality and innovation of reservoir science.

5 A Vision Beyond Publication

The mission of *Reservoir Science* extends beyond the mere publication of papers. We aspire to cultivate a vibrant international community in which innovative ideas emerge, interdisciplinary collaborations flourish, and scientific discoveries make meaningful contributions to society. Our vision is to establish *RS* as a globally recognized leading platform for advancing the frontiers of reservoir science and subsurface energy research. Through scientific excellence, editorial integrity, openness, and international collaboration, we aim to contribute to a more sustainable, innovative, and resilient energy future.

This vision cannot be realized without the dedication and support of the authors, reviewers, editorial board members, and readers. On behalf of the entire editorial team, we express our sincere gratitude to all those who have supported the journal since its inception. Let us work together to establish a trusted, influential, and forward-looking global platform for the reservoir science community.

6 Conclusion

In the inaugural year, *Reservoir Science* has established a strong foundation as an international, interdisciplinary forum for reservoir research. Although challenges remain, we are confident that collective efforts to

improve quality, visibility, and innovation will support the journal's continued growth. In turn, the journal will make meaningful contributions to subsurface energy science and sustainable development. We sincerely thank all authors, reviewers, editorial board members, and readers for their valuable support. *Reservoir Science* looks forward to welcoming high-quality submissions and working together with the global research community to advance reservoir science in the years ahead.

Data Availability Statement

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Conflicts of Interest

Qingchao Li served as an Editor-in-Chief of the *Reservoir Science* at the time of manuscript submission. To ensure the integrity of the peer-review process, Qingchao Li was not involved in the editorial handling, peer review, or decision-making process for this manuscript, which was handled independently by another editor.

AI Use Statement

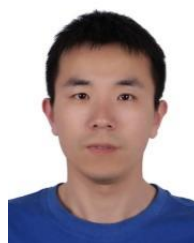
The author declares that no generative AI was used in the preparation of this manuscript.

Ethical Approval and Consent to Participate

Not applicable.

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