



# Forging the Future of Chemical Engineering and Renewable Fuels

Jorge Ancheyta<sup>1,\*</sup>

<sup>1</sup> Higher School of Chemical Engineering and Extractive Industries, Instituto Politécnico Nacional, Mexico City 07700, Mexico

## Abstract

As the Editor-in-Chief of this pioneering journal, it is with immense enthusiasm that a journey is embarked upon to explore the confluence of chemical engineering and renewable fuels. This journal aims to serve as a nexus for groundbreaking research, innovative methodologies, and transformative discussions that address the world's pressing energy challenges. Our focus on renewable fuels underscores the urgent need for sustainable solutions that mitigate climate change while fostering economic and technological growth.

**Keywords:** chemical engineering, renewable fuels.

## 1 The Role of Chemical Engineering in Energy Transition

Chemical engineering has always been at the forefront of technological advancement, from refining crude oil to synthesizing novel materials. As the transition from conventional fossil fuels to renewable energy

sources continues, the discipline must evolve to meet the challenges of this paradigm shift. Renewable fuels, including biofuels, hydrogen, synthetic fuels, and others, represent a critical component of this transition. Their development and commercialization require interdisciplinary approaches, in which chemical engineering is recognized as playing a pivotal role in scaling up processes, optimizing efficiency, and ensuring environmental compliance.

This journal will champion research that bridges theoretical concepts with practical applications. Whether it is the kinetics of catalytic reactions in biofuel synthesis or the thermodynamics of hydrogen storage, a platform is intended to be provided for studies that push the boundaries of knowledge and application.

## 2 Opportunities and challenges in renewable fuels

The pursuit of renewable fuels is fraught with both opportunities and challenges. On one hand, the advancements in bio-based feedstocks, electrochemical conversion technologies, and CO<sub>2</sub> utilization present immense possibilities for innovation. On the other hand, there are hurdles such as feedstock sustainability, economic feasibility, and the integration of renewable fuels into existing energy infrastructures.



**Academic Editor:**  
Jorge Ancheyta

**Submitted:** 20 April 2025  
**Accepted:** 21 April 2025  
**Published:** 21 May 2025

**Vol. 1, No. 1, 2025.**  
**doi:** 10.62762/JCERF.2025.333899

**\*Corresponding author:**  
✉ Jorge Ancheyta  
jancheyta@ipn.mx

### Citation

Ancheyta, J. (2025). Forging the Future of Chemical Engineering and Renewable Fuels. *Journal of Chemical Engineering and Renewable Fuels*, 1(1), 1–2.



© 2025 by the Author. Published by Institute of Central Computation and Knowledge. This is an open access article under the CC BY license (<https://creativecommons.org/licenses/by/4.0/>).

This journal seeks to address these challenges head-on, offering insights into cost-effective production methods, lifecycle assessments, and policy frameworks that support the adoption of renewable fuels. We encourage submissions that explore novel approaches, such as utilizing waste materials for fuel production or developing catalysts that enhance reaction efficiencies.

### 3 Global collaboration and knowledge sharing

The development of renewable fuels is not confined to any single region or nation. It is a global endeavor that requires collaboration across borders, industries, and disciplines. As a journal, a strong commitment is made to fostering a spirit of cooperation and providing a platform for researchers from diverse backgrounds to share their findings and insights.

The importance of partnerships between academia, industry, and government is fully acknowledged. By highlighting case studies, collaborative projects, and best practices, inspiration is intended to be provided for readers to think beyond traditional boundaries and to embrace the interdisciplinary nature of renewable fuels research.

### 4 Vision for the journal

The vision for this journal is to be more than a repository of research articles; it is aspired that it will serve as a catalyst for change. By disseminating cutting-edge research, facilitating discussions, and showcasing innovations, it is hoped that policy decisions will be influenced, technological advancements driven, and meaningful contributions made toward a sustainable energy future.

As the inaugural editorial of this journal, an invitation is extended to researchers, practitioners, and policymakers to participate in this endeavor. Through collective efforts, the transition to a cleaner, greener, and more resilient energy landscape can be accelerated.

### 5 Conclusion: The Road Ahead

The journey toward sustainable energy is a marathon, not a sprint. It requires perseverance, creativity, and a commitment to excellence. Chemical engineering and renewable fuels are at the heart of this journey, providing the tools and solutions needed to address the complexities of energy transition. As this journal is launched, the words of renowned chemical engineer George E. Keller come to mind: "Innovation in chemical engineering is not just about solving problems; it's about envisioning a better future." In this spirit, contributions, engagement, and inspiration are warmly invited through the pages of this journal.

Let us forge ahead, united in our mission to shape the future of energy.

### Data Availability Statement

Not applicable.

### Funding

This work was supported without any funding.

### Conflicts of Interest

The author declare no conflicts of interest.

### Ethical Approval and Consent to Participate

Not applicable.



**Ancheyta J** received the Ph.D degree in chemical engineering from Autonomous Metropolitan University, Mexico, in 1998. Jorge Ancheyta has over 35 years of experience in research, development, scaling-up, and the semi-commercial and industrial application of process technologies, catalysts, kinetic models, and reactor models for various petroleum refining processes. He has authored 10 books published by John Wiley and Sons and CRC Press, and over 300 articles in internationally referred journals. His H-index is 60 (Scopus) and 70 (Google Scholar), with more than 17,000 citations to his work. (Email: jancheytaj@ipn.mx)