

*Editorial*

## Editorial for First Issue of *Combustion and Emission Control*

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We are delighted to present the inaugural issue of *Combustion and Emission Control (CEC)*, a journal dedicated to the field of clean combustion and emission control. Combustion serves as a vital energy conversion process, transforming chemical bond energy into heat and power with high intensity and energy density. It plays a central role across a wide range of industrial and civil applications—including power plant boilers, internal combustion engines, jet engines, gas turbines, and sectors such as metallurgy, cement, glass manufacturing, heating, and cooking—driving forward societal progress.

However, the combustion of traditional fossil fuels generates gaseous and solid pollutants, such as particulate matter,  $\text{SO}_2$ ,  $\text{NO}_x$ , CO, hydrocarbons, VOCs, PAHs, and soot etc. In the context of global warming,  $\text{CO}_2$  emissions have also become a worldwide concern. Nevertheless, combustion still remains critically important especially with the emergence of new carbon-free and carbon-neutral fuels i.e., hydrogen, green ammonia, green methanol, biomass, biodiesel, and sustainable aviation fuels (SAF) etc. These new types of fuels are particularly attractive as they can be used in the existing facilities with limited modifications. However, these new type fuels bring new challenges for combustion process like very fast burning velocity of  $\text{H}_2$  bring risk of flash back, very high  $\text{NO}_x$  emission of  $\text{NH}_3$  fuel if not well organized.

Although several respected journals already cover combustion science, such as *Combustion and Flame*, *Fuel*, and *Energy & Fuels* etc., but none integrate a dedicated focus on both combustion and emission control. Therefore, there is a clear need for a new journal that bridges energy and environmental perspectives in combustion processes. CEC aims to fill this gap.

### Scope of CEC

CEC provides a forum for exchanging innovative ideas and research advances in combustion and emission control. Topics include, but are not limited to:

- Development and reduction of reaction kinetics for combustion
- Laminar and turbulent flame structure and dynamics
- Gaseous fuel combustion (e.g., natural gas,  $\text{H}_2$ ,  $\text{NH}_3$ )
- Liquid fuel combustion (e.g., gasoline, diesel, kerosene, biodiesel, methanol, SAF)
- Solid fuel combustion (e.g., coal, biomass, solid waste, metal fuels)
- Emission control technologies (e.g., particulate matter,  $\text{SO}_2$ ,  $\text{NO}_x$ , VOCs, heavy metals)
- Carbon capture and storage
- Oxy-fuel combustion
- Chemical looping combustion
- Advances in combustion diagnostics for species and temperature measurement
- Applications of combustion and emission control technologies

CEC will publish high-quality, peer-reviewed articles that contribute novel ideas and innovations to the field. We warmly invite researchers, scientists, and engineers worldwide to join us in this endeavor. Your contributions will inspire students, early-career researchers, and the broader community, helping to advance the energy transition toward a cleaner, more efficient, and environmentally sustainable future.



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**Conflicts of Interest**

The author declares no conflict of interest.

**Use of AI and AI-Assisted Technologies**

No AI tools were utilized for this paper.