



Methane

---

an Open Access Journal by MDPI

---

Indexed in Scopus

Special Issue Reprint

## Methane Release

**Edited by: Gabriel Barberes and Nuno Lamas Pimentel**

Trace gases constitute a minor fraction of our atmosphere, yet they exert a disproportionate influence on global climate control. Among them, methane ( $\text{CH}_4$ ) stands out as a potent greenhouse gas. Its presence in the atmosphere is driven by a complex interplay of mechanisms, ranging from ancient geological processes to recent biological activities. While geological seepage and subsurface reservoirs represent the "old" origins of methane, "recent" production is dominated by biogenic sources, most notably enteric fermentation in livestock. The latter, widely classified by the IPCC as a significant anthropogenic source, presents both a challenge and an opportunity for climate change mitigation.

This Reprint compiles cutting-edge research that addresses the full spectrum of methane occurrences. It bridges the gap between disciplines, moving from the micro-scale visualization of methane hydrates in subsurface sands and the detection of gas field leakages to the complex biochemistry of the rumen.

