

Conference Experience Report: ICC2025 – Clay Science and Its Applications

I had the valuable opportunity to present my research at the **International Clay Conference (ICC2025)**, where I shared findings from my study titled “*Valorisation of Natural Iron-Rich Kaolin Clays for Enteric Methane Mitigation in Cattle*”. Though I participated virtually, the experience was enriching, inspiring, and highly rewarding.

My research presentation highlighted how natural kaolin clays, particularly iron-rich variants (KaoFe), can effectively reduce enteric methane emissions from ruminant livestock—achieving reductions of up to 37%—without negatively affecting rumen digestion or fermentation. The study suggests that the structural iron in clays, along with other naturally occurring minerals like Al^{3+} , Si^{4+} , and K^+ , plays a significant role in methanogen suppression and hydrogen utilization, offering a cost-effective, biocompatible, and sustainable strategy for both GHG mitigation and mineral resource valorisation in the livestock sector.

Despite presenting virtually, I was encouraged by the interactive and supportive audience during my session. The engagement and positive feedback I received reinforced the relevance and potential impact of my research and provided me with renewed motivation to continue exploring environmentally focused clay science.

Beyond my own presentation, I greatly benefited from the diverse scientific talks delivered by mid to senior-level researchers from around the world. Their insights into emerging applications of clays in fields such as soil science, catalysis, environmental remediation, and agriculture broadened my understanding of the discipline and sparked new ideas for interdisciplinary collaboration. Importantly, the conference also served as a valuable networking platform, especially for early-career researchers like myself.

I would like to sincerely acknowledge the Clay Minerals Group (CMG) for awarding me a grant of 400 EUR, which covered my registration and abstract submission costs. This generous support made my participation possible and is deeply appreciated.

Attending ICC2025 has truly deepened my appreciation for clay science and its role in sustainability and climate-smart agriculture. It has also reinforced my commitment to contribute meaningfully to this field and take the next steps in my academic and professional development.

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