

# **PLENARY TALK : Sustainable Corrosion and Erosion Control: From Inhibitors to Novel Technologies**

*Wednesday 22 October 2025 14:10 (30 minutes)*

One persistent issue that plagues carbon abatement and energy sectors is infrastructure degradation through corrosion. Currently, the most popular method of internal corrosion control for carbon steel infrastructure consists of the application of corrosion inhibitors which suppress corrosion through surface adsorption. This technology is well-established, being relied upon in both traditional energy industries, as well as emerging areas, such as geothermal and carbon capture, utilisation and storage.

Despite its advantages, the application of corrosion inhibitors has various technical constraints, as well as environmental and economic challenges.

This presentation provides an overview of current activities at the University of Leeds which have supported the optimisation of corrosion inhibitors, as well as alternative, (and in some instances quite speculative) strategies to reduce our reliance on inhibitors. Interestingly these new technologies hold potential to mitigate erosion, as well as corrosion processes.

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**Session Classification:** Tribocorrosion in CO<sub>2</sub> atmosphere

**Track Classification:** Recent research topics