Session Title:

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Abstract title: Energy-saving production of organic urea and carbamates from atmospheric CO2: Life Cycle Perspectives on Combined Carbon Capture and Conversion Approaches

Abstract text (within 100 words):

The carbon neutrality quest, a collective transition of production and consumption methods, requires exploiting only the limited renewable resources. Atmospheric CO2 is a renewable carbon resource that the chemicals industry must utilize therein. Still, its direct capture and utilization need unleashing the unique characteristics that align well with an envisioned carbon-neutral society. Here, I present the combined carbon capture and conversion to produce organic urea and carbamates, characterized by energy-saving and safer production. The presentation focuses on how we attempt to cope with the gap between the current and future and unknowns in the early phases of LCA-informed technology development.