

## **CHEMICAL LOOPING COMBUSTION OF DIFFERENT TYPES OF COALS**

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Chemical Looping Combustion (CLC) is a novel technology that could be applied to the combustion of gaseous, liquid, or solid (coal, biomass) materials. Since all oxygen in this process is delivered by a material called oxygen carrier, the combustion process proceeds analogously to combustion in pure oxygen (oxy-combustion); therefore fumes are composed mostly of carbon dioxide and water, without the presence of thermal nitrogen oxides and atmospheric nitrogen, which considerably simplifies the further process of carbon capture and storage.

In this research, different types of hard coal and lignite were tested as fuel, and spinel-based material was used as an oxygen carrier. The process was conducted in conditions similar to a fixed-bed reactor and monitored using a thermogravimetric analyser and quadrupole mass spectrometer.

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