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Reaction Kinetics in Chemical Looping Processes

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Message from the Guest Editor

Chemical looping processes are based on splitting a chemical process into two or more steps in a cyclic way. In the beginning, chemical looping was proposed as an advanced combustion process with the potential to increase energy efficiency in the thermochemical conversion of fuels using the principles of thermodynamics to reduce exergy loss. Thus, an oxygen carrier was used to split the combustion process into two stages. Chemical Looping Combustion (CLC) was characterized by obtaining a CO₂ stream separated from the depleted air used for fuel combustion. Due to this, CLC was shown to be one of the most promising technologies for combustion with CO₂ capture at low energy and economic costs. These processes may be based on the transference of one atom or compound for fuel oxidation, reducing a compound, gas separation, chemical synthesis, or circumvent thermochemical equilibrium limitations in chemical reactions.

I look forward to receiving your contributions.



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Special issue