

Kathryn Toffolo

Prof. Sandoval

Optimal Design and Control of a Packed Bed Chemical-Looping Combustion Reactor.

Chemical-Looping Combustion (CLC) is a novel technology which can be implemented in existing fossil-fired power plants in order to separate the air and fuel, making it easier to isolate and capture CO₂ to reduce the carbon footprint of combustion. A multiscale model for CLC in a packed bed reactor was developed in order to simultaneously optimize the design and control of this process to make it more economically feasible to implement.