

Reacting Surfaces for Clean Combustion

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Reacting Surfaces for Clean Combustion

Combustion of fuel and air mixture produced non-negligible quantities of NO and NO_2

Reacting catalytic surfaces allow complete combustion at low temperatures

Catalytic materials "facilitate" reaction without being consumed

Low temperature combustion avoids the oxidation of N_2 , leading to near-zero emissions of NO and NO_2

Thin-film metal oxide

Inexpensive metal oxides are good candidates for catalytic material





Pros

No emissions of NOx or CO

Straight-forward fabrication: metal-sheet construction + electroplating (thin-films)

Cons

Metal oxide catalyst development is relatively new.

Metal oxide catalysts degrade rapidly at very high temperatures



R&D in metal oxides is necessary