Regenerable composites for chemical looping combustion and HCl adsorption

Overview

Hydrogen chloride (HCl) in fuel gas (syngas) produced from gasification of biomass and solid waste results in the corrosion of heat recovery system during downstream applications.

Regenerable catalyst-sorbent composites are developed to simultaneously combust fuel gas (syngas) and remove HCl from gas at high temperature.

Key features

- Nearly full combustion for the fuel gas (syngas) produced from biomass and solid waste.
- Efficient HCl removal at high temperature (800-900 ºC) and high moisture content condition.
- The sorbent component is regenerable in line.
- Stable combustion and HCl removal ability during chemical looping process.

Applications

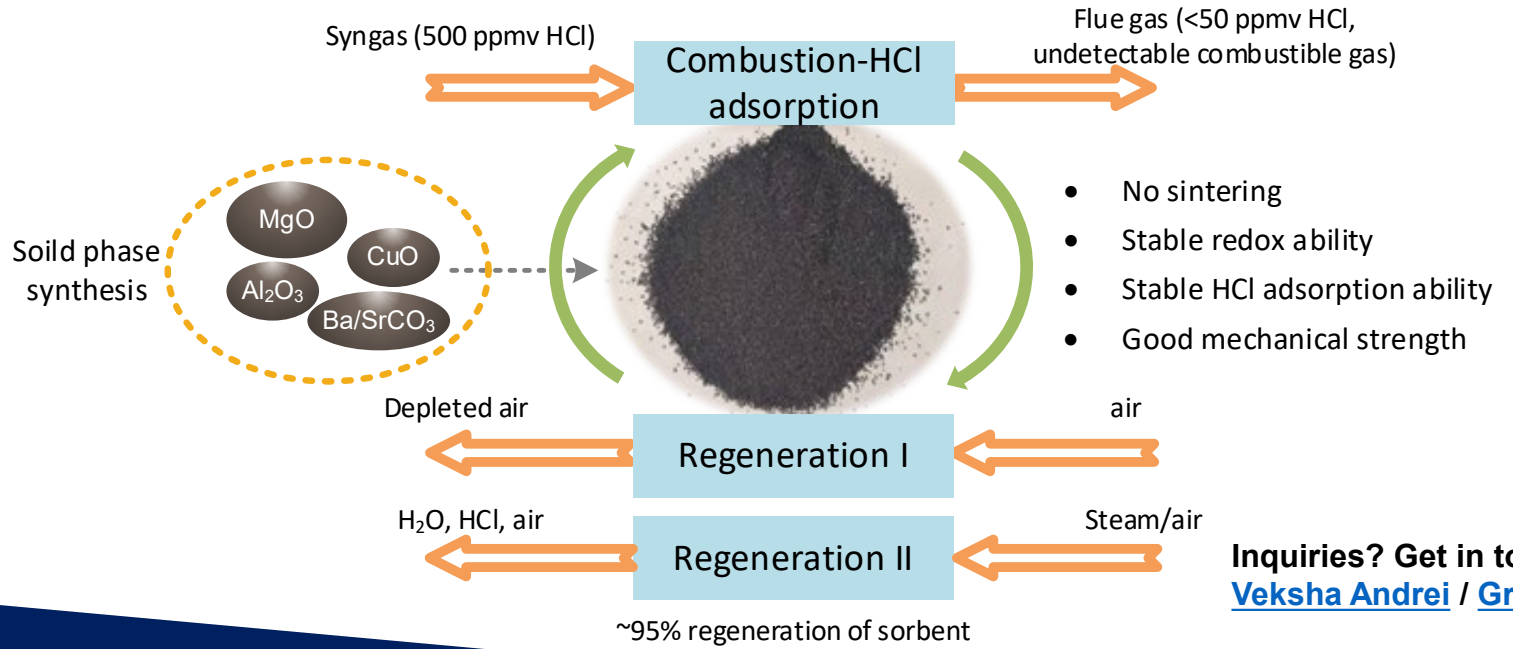
- Chemical looping combustion and HCl removal of fuel gas (syngas) produced from biomass, municipal solid waste, etc.

Market opportunities

- Biomass, municipal solid waste gasification plants integrated with power generation.

Advantages and benefits

- High mechanical strength for fluidized bed application.
- High resistance to sintering during chemical looping cycles.



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