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# Manganese Silicate based Redox Catalysts for Greener Ethylene Production via Chemical Looping – Oxidative Dehydrogenation of Ethane

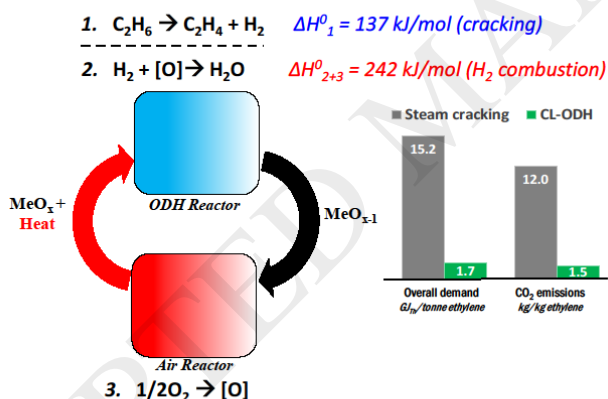
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## Graphical abstract



## Highlights

- Ethane to ethylene conversion via chemical looping oxidative dehydrogenation (CL-ODH) is studied;
- Sodium tungstate promoted manganese silicates are effective redox catalysts for CL-ODH of ethane;
- Sodium tungstate promoter suppresses CO<sub>x</sub> formation by inhibiting ethane activation on the surface;
- CL-ODH can potentially reduce CO<sub>2</sub> emissions for ethylene production by 89%.

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