

Cyclic oxygen exchange capacity of Ce-doped V₂O₅ materials for syngas production via high temperature chemical looping reforming of methane

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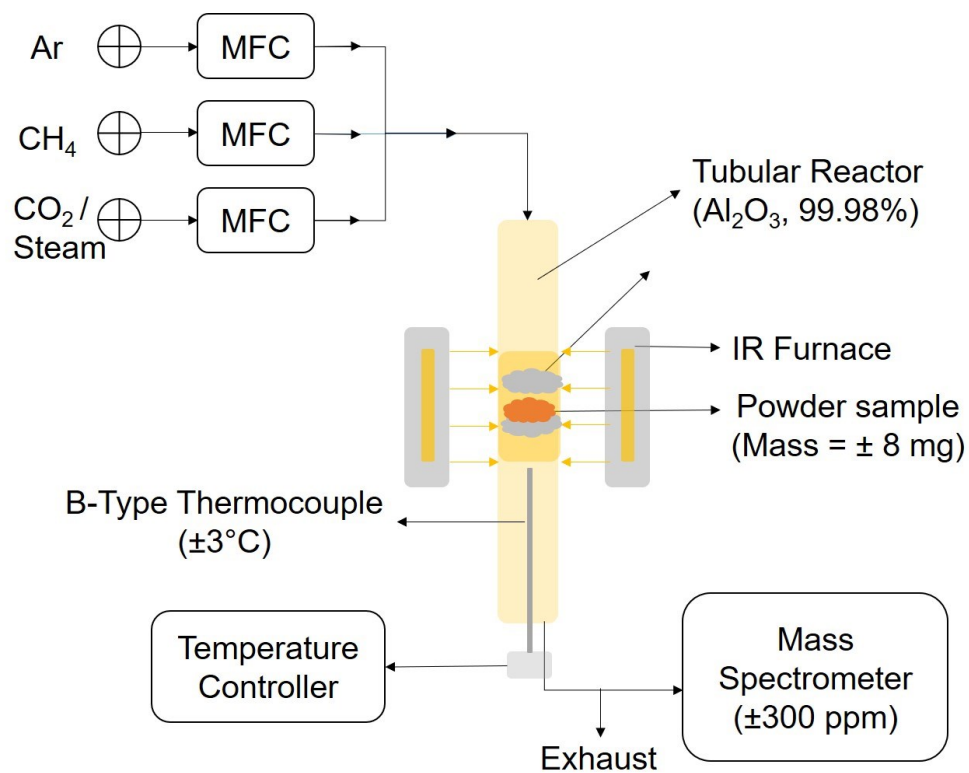


Figure SI 1. Schematic diagram of thermochemical testing setup.

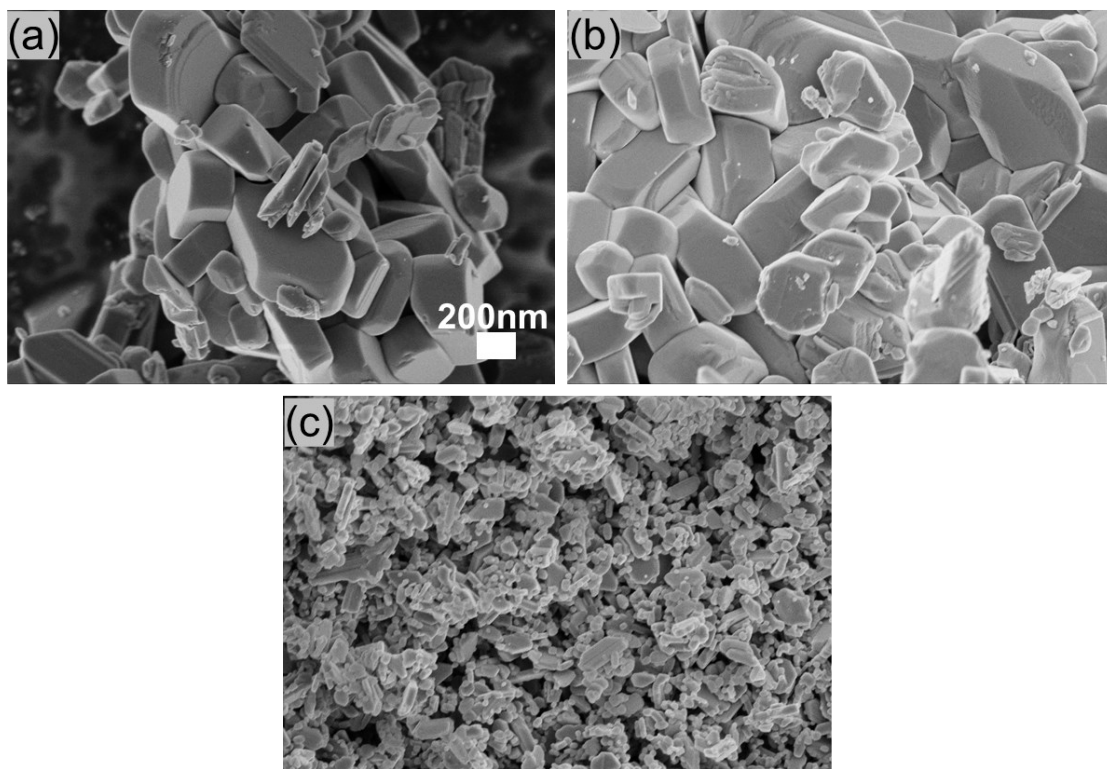


Figure SI 2. FESEM micrographs of as-prepared (a) pure V_2O_5 , (b) 3CeV and (c) 9CeV powders.

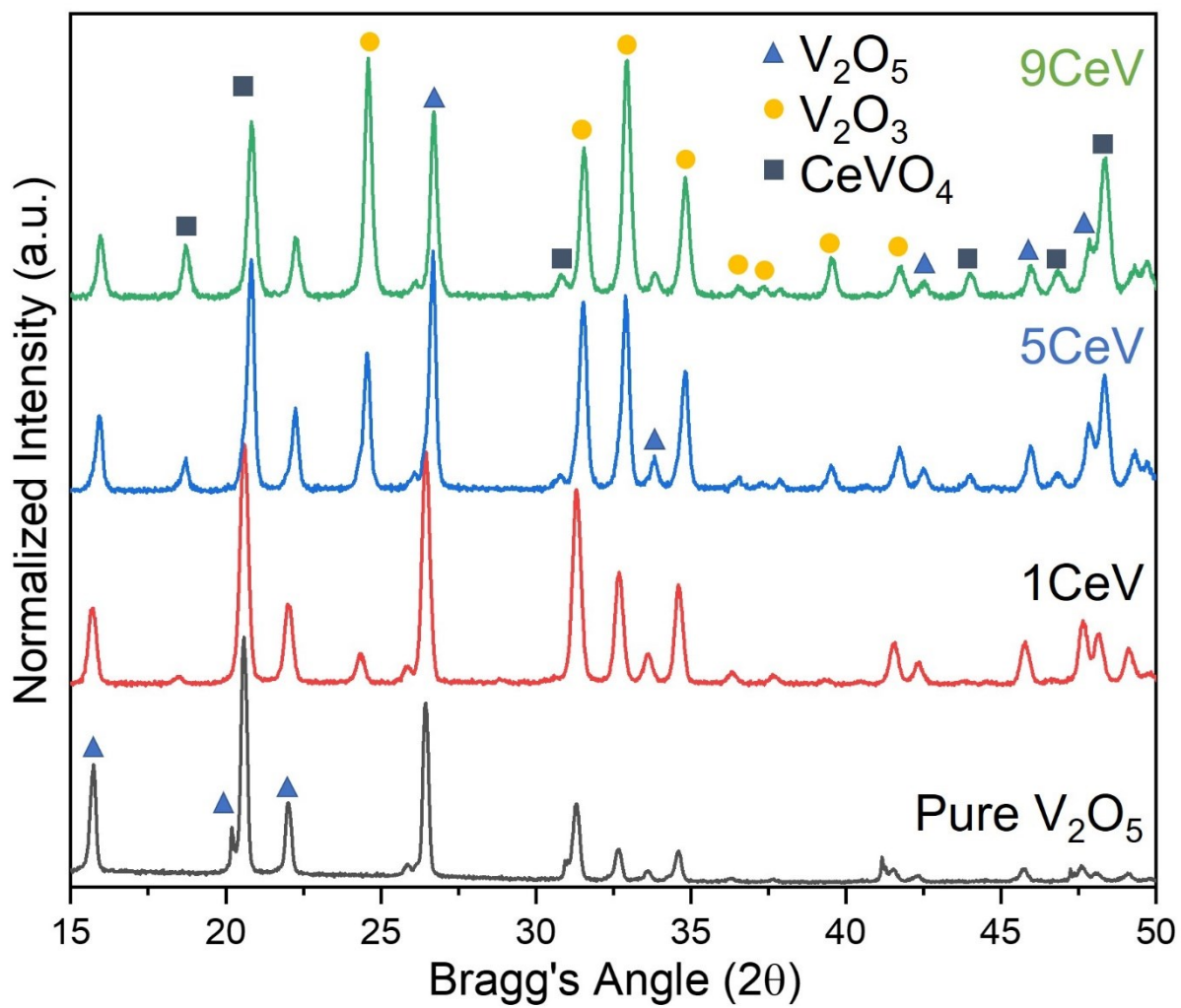


Figure SI 3. XRD patterns of as-prepared pure and Ce-doped V_2O_5 powders

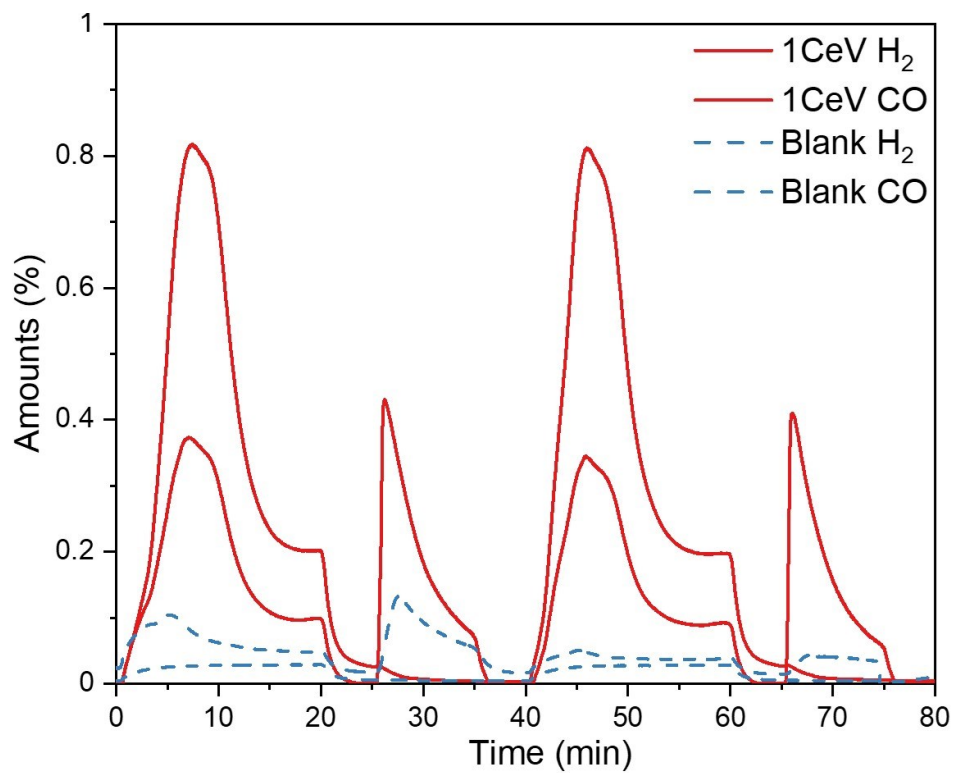


Figure SI 4. Mass-Spectrometer signals for H₂ and CO recorded during MPO-CDS redox cycles for blank and 1CeV samples.

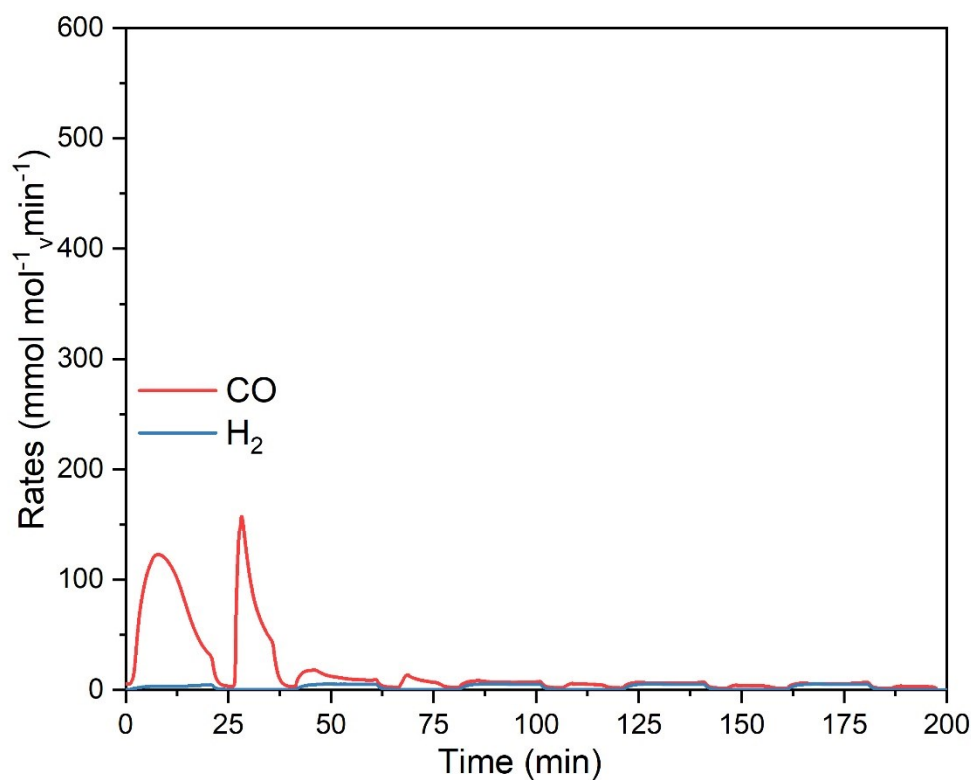


Figure SI 5. Syngas production rates produced by pure V₂O₃ powders during 5 continuous MPO-CDS redox cycles.

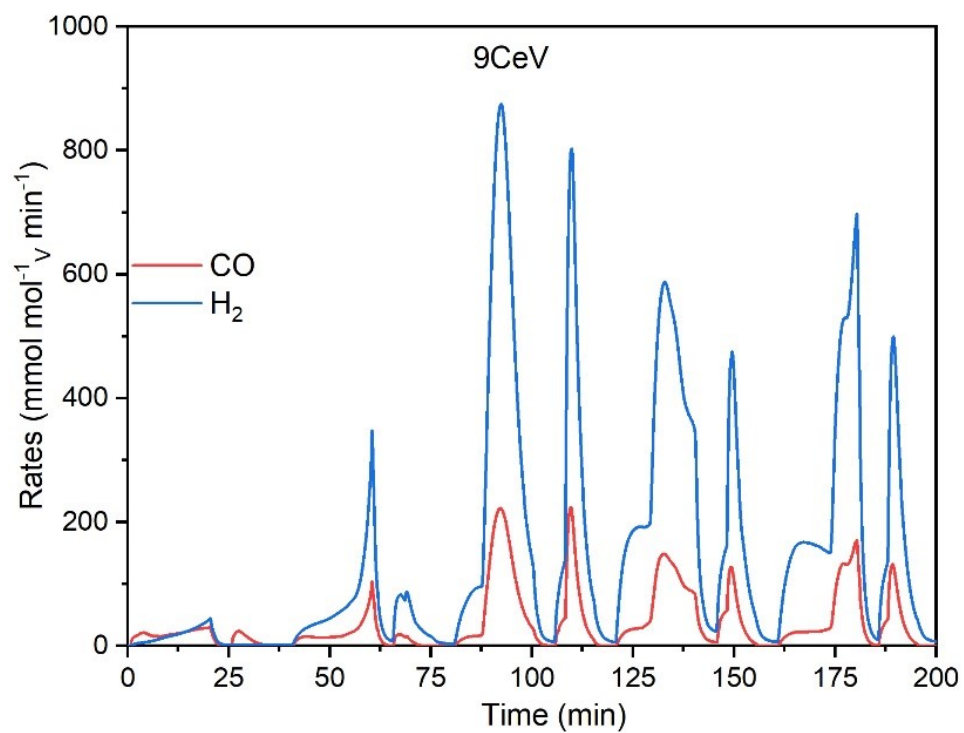


Figure SI 6. Syngas production rates produced by 9CeV powders during MPO–WS cycles.

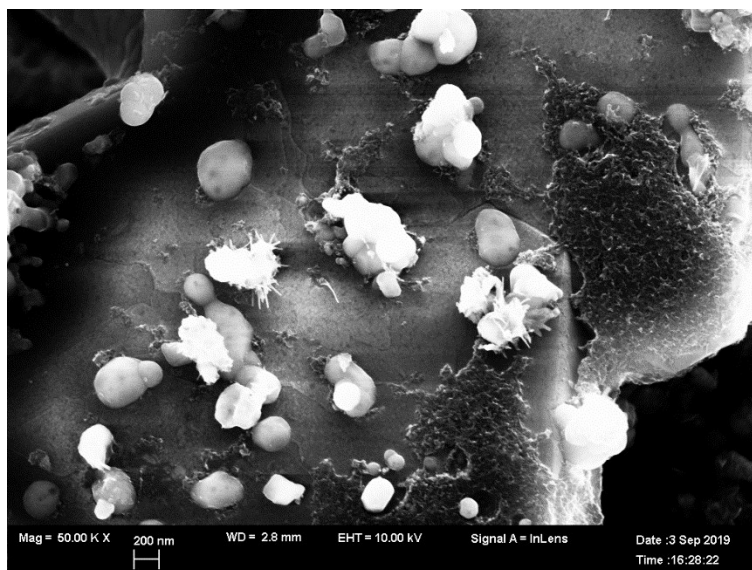


Figure SI 7. Back scattered SEM images of 3CeV powders, acquired after the MPO-CDS cycling.