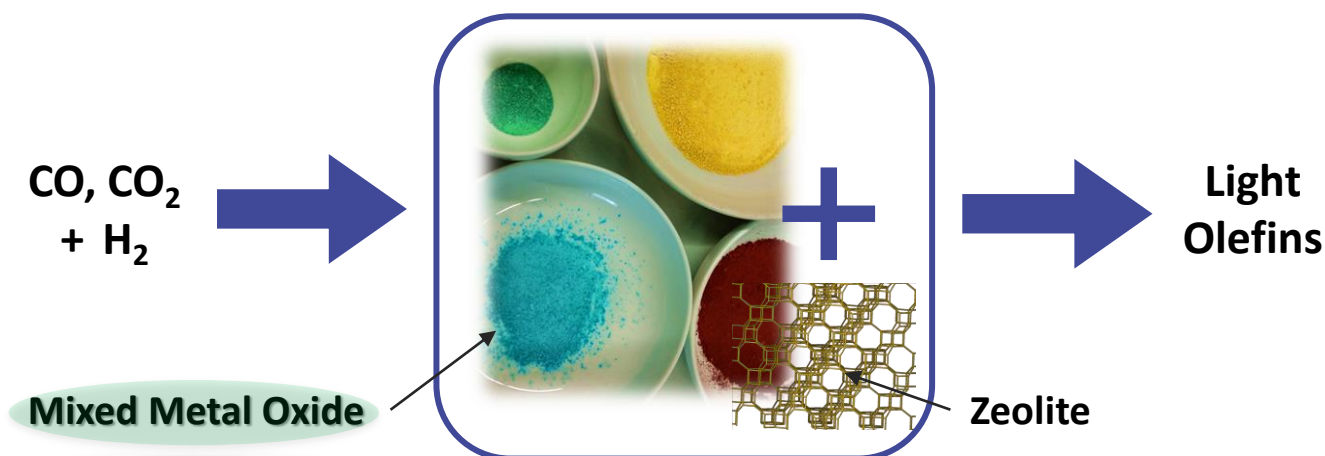


## Design of metal oxides for the conversion of CO<sub>2</sub> and CO into key chemicals with tandem catalysts (Master Thesis)

Syngas is a key ingredient to become independent of crude oil. Olefins are one of the most important industrial building blocks. Syngas can be converted into olefins in gas-phase reactions over special bifunctional catalysts: **mixed-metal oxides particles combined with zeolites**. Both parts of the catalyst are crucial, as they fulfill unique roles in the

underlying tandem reaction mechanism.

In this thesis, these catalysts will be **designed and synthesized** with special focus on the **mixed metal oxide function**. Then, their **catalytic performance** will be evaluated under near industrial conditions in a lab-scale micro-reactor.



- ✓ Synthesis of Cu-based materials
- ✓ Use of inexpensive promoters
- ✓ Catalysts characterization (XRD, TPR...)
- ✓ Measurement of the catalytic performance using a fixed bed micro-reactor

Sustainability – Nano-Tailored Materials  
– Chemical Building Blocks

CADRE website



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