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Thibault Cantat

► **To cite this version:**

Thibault Cantat. Transformation et utilisation du CO<sub>2</sub>: Que peut apporter la chimie?. PhD-Day Université de Brest, Dec 2018, Brest, France. cea-02340788

**HAL Id: cea-02340788**

**<https://cea.hal.science/cea-02340788>**

Submitted on 31 Oct 2019

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# TRANSFORMATION ET UTILISATION DU CO<sub>2</sub> : QUE PEUT APPORTER LA CHIMIE ?

DR. THIBAUT CANTAT

CEA - Saclay, Basic Research Division, France

## ABSTRACT

While greenhouse gases emissions are reaching alarming levels, fossil fuels still represent 80% of the world energy portfolio and 95% of our chemical commodities rely on non-renewable resources, namely hydrocarbons. In this context, utilizing CO<sub>2</sub> as a C1 building block to produce platform chemicals as an alternative to petrochemistry has a double advantage of reusing CO<sub>2</sub> while sparing fossil resources and avoiding CO<sub>2</sub> emissions from their use.<sup>[1]</sup> We have developed a strategy relying on the simultaneous use of a functionalizing reagent and a reductant that can be independently adjusted to perform the reductive functionalization of CO<sub>2</sub>. The so-called diagonal approach will be discussed and exemplified with novel catalytic processes to convert CO<sub>2</sub> to formamides, N-heterocycles, methylamines and methanol, using hydroboranes, hydrosilanes or formic acid as reductants.<sup>[2]</sup> Extension of this methodology to SO<sub>2</sub> enables the facile conversion of this gaz to sulfones, under metal-free conditions.

## REFERENCES

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