

## Copper(I) and Zinc(II) metal complexes as photosensitizers for small molecules activation

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Solar light energy presents an enormous potential and its exploitation is essential in order to face the increase of global energy demand.<sup>[1]</sup> Solar chemical generation is a philosopher's stone of many researchers nowadays. Important milestones have been recently achieved on artificial photosynthesis, nevertheless investigation of efficient and robust photosensitizers has to be still pursued.<sup>[2]</sup> In terms of applicability, these photosensitizers should be easily available and cost-effective.

Our work deals with earth-abundant metal complexes, based on copper(I) and zinc(II). We will present mononuclear and binuclear organometallic complexes, which photophysical and electrochemical properties make them suitable as photosensitizers (PS in Figure 1). Synthetic procedures will be presented together with a thorough analysis of their electrochemistry and photophysics. We will show also some results on the photocatalytic CO<sub>2</sub> reduction, selecting among our novel organometallic complexes the most promising photosensitizers.

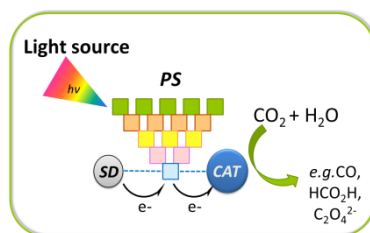


Figure 1. Schematic representation of artificial photosynthetic components.

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