

## Synthesis and Studies of Noble Free Photocatalytic Dyad for H<sub>2</sub> Evolution Applications

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In the context of increasing global energy demand, the development of photoelectrochemical (PEC) devices for H<sub>2</sub> evolution through water-splitting is a highly active field of research. This technology is indeed recognized as a promising and sustainable solution to store sunlight energy under a chemical form that can then be used on request. In particular, the construction of PEC devices by the dye-sensitized approach requires combining efficient molecular photosensitizers or photocatalysts with a suitable electrode material.<sup>[1]</sup>

Our strategy for the construction of H<sub>2</sub>-evolving molecular photocathodes (Figure 1)<sup>[2]</sup> will be presented together with recent results on the synthesis of new noble metal free dye-catalyst dyads dyes and their use to sensitize nanostructured mesoporous NiO films.<sup>[3]</sup>

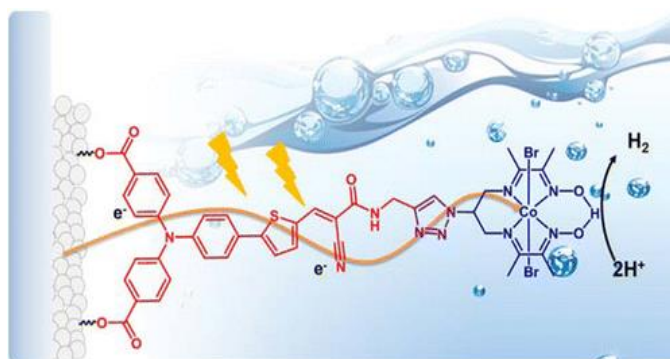


Figure 1: Illustration of a molecular photocathode based on dyad resulting from the coupling of an organic push-pull dye with cobalt diamine-dioxime catalyst.

**Funding:** This work was supported by the European Research Council under the European Union's Seventh Framework Programm (FP/2007-2013) ERC Grant Agreement n.306398

### References:

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