Catalytic approaches for a site-selective functionalization of sugars

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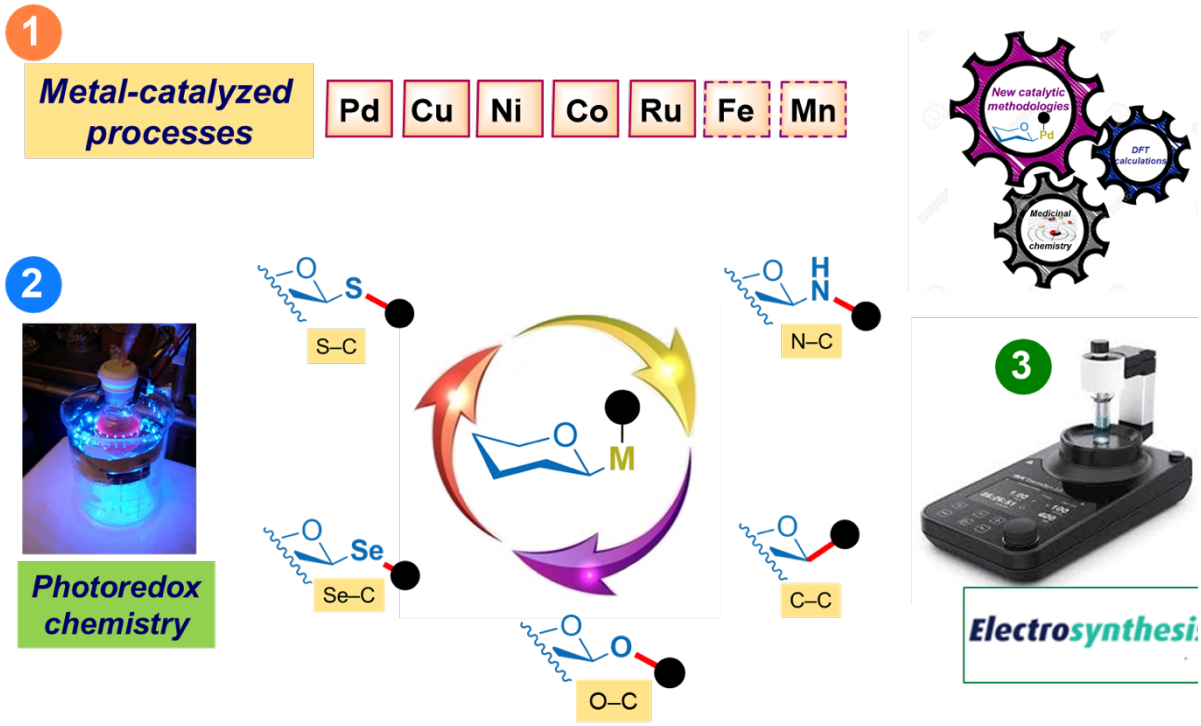
The glycosylation reaction is one of the most important and well known method to functionalize sugars. In this context, a significant research has been directed toward the development of new glycosylation methodologies. However, designing new transition metal-catalyzed transformations in glycochemistry is still one of the highly challenging task. In fact, the translation of scientifically well-established cross-coupling reactions to sugars often does not lead to the desired products.

Over the past few years, our laboratory has been embarked in the development of selective catalytic approaches to functionalize sugars regardless of the protecting groups and the nature of the sugar. To this end, different strategies were explored including (*i*) transition metal-catalyzed cross-coupling transformations, (*ii*) C-H activation processes with or without the use of a directing group, (*iii*) photoredox dual catalysis as well as (*iv*) electrocatalysis (Figure 1).

In this presentation, we will give an overview of our synthetic methodologies (1) related to C-C and C-heteroatom bond forming reactions, and we will discuss some applications in medicinal chemistry programs.



Bibliographic references:

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