UNIVERSITÀ DEGLI STUDI DI PADOVA

PhotoCatData - Development of Data-assisted Photo-Organocatalytic Transformations

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Organophotoredox catalysis has gained significant attention in sustainable chemistry. This method uses affordable, metal-free dyes that can be tailored for specific reactions. However, predicting how these dyes will behave in different systems is challenging. Traditional approaches often rely on trial-and-error methods that are time-consuming and costly. With the support of the Marie Skłodowska-Curie Actions programme, the PhotoCatData project aims to apply a data-driven solution to streamline photocatalyst design and reaction discovery. The study will utilise machine learning to correlate photocatalyst structures with their performance. Next, the proposed photochemical methodologies will be adapted for flow processes, enabling the efficient, large-scale production of valuable compounds. Project methodologies should help save time, cut costs and expand the potential of organophotoredox catalysis.

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