

Towards Greener Photochemistry

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Photochemistry is potentially a very powerful tool for Green Chemistry not least because energy is delivered to reacting molecules far more selectively than by bulk heating. Indeed, more than a century ago, the pioneering Italian chemist, Ciamician, presented a very powerful vision of the where photochemistry could lead us [1]. Since then photochemistry has become a major strand of chemical research in academia. By comparison, its penetration into chemical manufacture remains comparatively modest because of a whole series of issues, mostly centred on the problems of carrying out large-scale photochemical reactions both efficiently and safely. In recent years, our research group has begun addressing some of the challenges of making photochemistry greener, more energy efficient and more widely accessible. This lecture will summarize our progress, in the context of photo-catalytically generated singlet O₂ [2,3] and other reactions [4]; singlet O₂ in particular is a reagent which satisfies many of the principles of Green Chemistry [4].

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