

New photoinitiating systems and strategies for high performance materials

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Abstract: Photopolymerization technology has been developing steadily benefiting from the characteristics of spatial and temporal controllability, environmental protection, and efficient processes.[1,2] However, the polymerization in shadow areas remains a huge challenge. In this work, new photoinitiating systems for radical, cationic or hybrid polymerization will be presented for different spectral ranges: near UV, visible, Near Infrared. This work will be extended to dual-cure processes as well as photopolyaddition reactions. Better depths of cure can be obtained. Some applications for coatings, 3D printing and photocomposites will be provided. The mechanical properties of the generated polymers/composites will be also investigated.

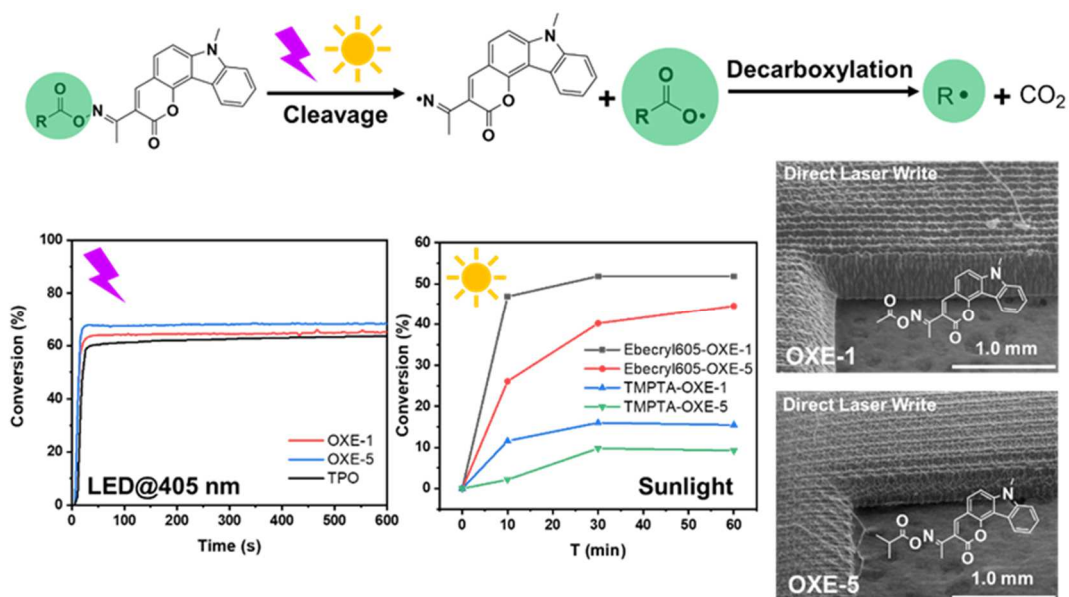


Figure. Example of new high performance photoinitiating systems.

References:

[1] : Photoinitiators - Structures, Reactivity and Applications in Polymerization, J.P. Fouassier, Jacques Lalevee Wiley-VCH, Weinheim, 2021

[2] : Dietlin C. ; Schweizer S. ; Xiao P. ; Zhang. J. ; Morlet-Savary F. ; Graff B. ; Fouassier J-P. ; Lalevée J. *Polymer Chemistry*, **2015**, 6, 3895-3912.