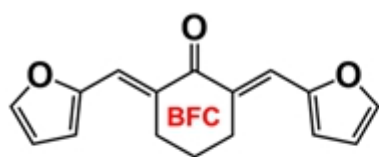


DESIGN OF KETENE DERIVATIVES AS LED LIGHT PHOTOINITIATORS FOR FREE RADICAL PHOTOPOLYMERIZATION

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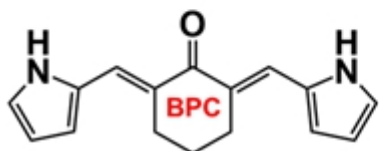
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Two ketene derivatives designed as type II photoinitiator for LED-induced polymerization were reported. The first one called **BFC**¹ was synthesized by one-step reaction of furan and cyclohexanone. In the presence of coinitiator **TEOA**, **BFC** could perform high efficiency for free radical photopolymerization under LED irradiation. Moreover, initiating system **BFC/TEOA** exhibits well water solubility and photobleaching character. A novel characterization method based on the special fluorescence behavior of **BFC** to monitor both free radical and cationic photopolymerization was also proposed.² The second one called **BPC**³ was synthesized by pyrrole-2-carboxaldehyde and cyclohexanone. **BPC** performed much higher efficiency, better water solubility and photobleaching character than **BFC**. Both **BFC** and **BPC** could be potential for LED-induced polymerization.



✓ Visible light absorption

✓ High Efficiency



✓ Water Solubility

✓ Photobleaching Character

[1] Dyes and Pigments., 2019, 165, 467-473

[2] Journal of Photochemistry & Photobiology A: Chemistry., 2019, 389, 112225.

[3] Progress in Organic Coatings., 2021, 151, 106099