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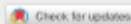
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Detoxification

# Metal-free and stable dye-sensitized polymer matrix for the detoxification of antibiotic drug levofloxacin under visible light illumination

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## ABSTRACT

Herein, we developed novel malachite green (MG), crystal violet (CV), methyl orange (MO) sensitized Polymethylmethacrylate (named as MG@PMMA, CV@PMMA, and MO@PMMA) through the simple solution casting method. The successful formation was confirmed by various analytical and spectroscopic techniques. For the first time, the as-prepared MG@PMMA, CV@PMMA, and MO@PMMA were utilized as photocatalysts for the degradation of levofloxacin (LEV) drug under visible light. The UV-visible spectroscopy results revealed that the above 90%, 94%, and 95% of LEV degradation efficiency was achieved over MG@PMMA, CV@PMMA, and MO@PMMA, respectively. Furthermore, the dye-sensitized PMMA matrices demonstrated good repeatability and reusability even after the fifth usage.

**KEYWORDS:** [Antibiotics](#) [photodegradation](#) [dye](#) [visible light](#)

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