

# Rapid in Air Low Power UV-Light Induced Reduction of Graphene Oxide for Robust Oil Recycling

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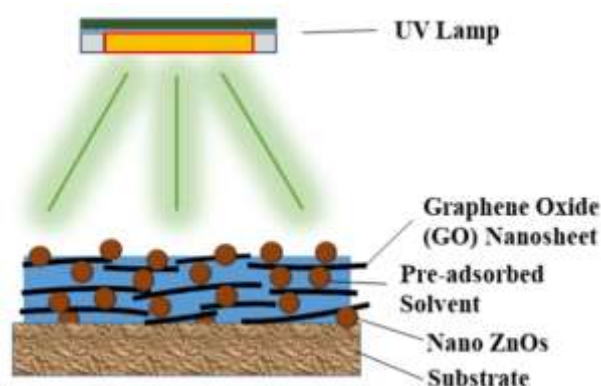
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Graphene oxide is a type of two dimensional material with a single-atom thickness which exhibits remarkable properties can be reduced to form a graphene like sheet by removing oxygen-functional groups. To date, three main GO-reduction strategies have been used: Chemical, thermal and photocatalytic strategies. A clean and environmental friendly reduction method to convert GO to rGO using  $\text{TiO}_2$  and  $\text{ZnO}$  as photocatalysts under UV light irradiation at room temperature was demonstrated. This process is usually carried out in solvent suspension with low power UV-light usually required long exposure time. Since the early days of the field, it has been recognized that one of the main obstacles to the realization of large-scale applications for graphene is the lack of a simple and cost effective reduction process. Therefore, recently, a significant interest has been and still is, devoted to the development of reductions methods by adopting alternative strategy using UV-reduction. Herein, we developed a super-fast technique to achieve reduction of graphene oxide in air with a short time using photocatalytic reactions. Notably, this method was successfully transferred to 2D membrane material with exposure time only 15 minutes. Hence, we explored the performance of UV-reduced GO-ZnO@MF sponge for oil adsorption from oil/water mixtures

## References

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## Figure



**Figure 1:** Illustration the UV-reduction of GO with minimal amount of solvent in the presence of  $\text{ZnO}$  as photocatalyst.