

Introduction

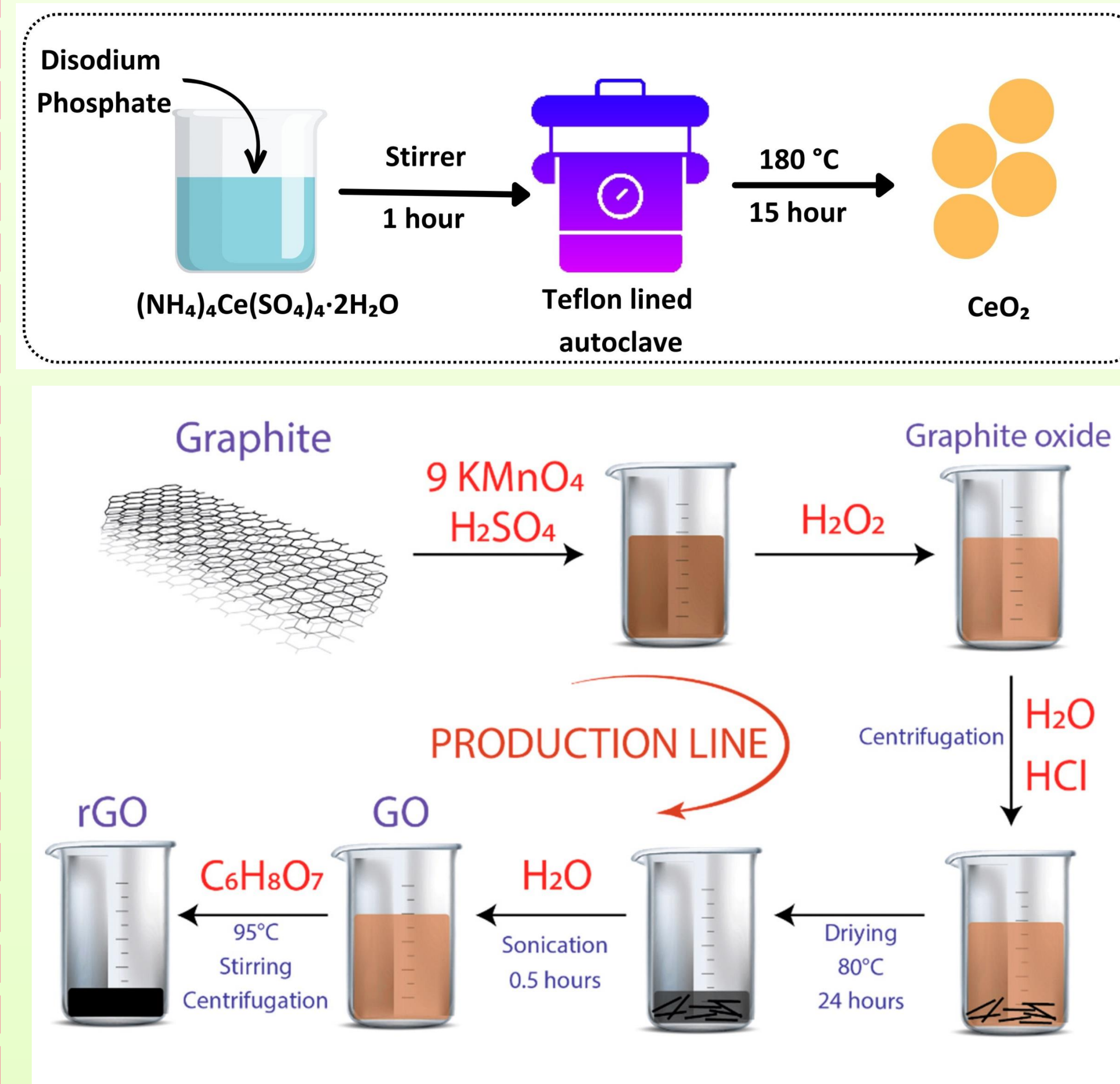
- Oil-water impurities and organic dye contaminants threaten freshwater resources.
- These pollutants mix from urban oil sewage, oilfield production, and textile industry.
- The adsorption, coagulation, and addition of demulsifiers are inadequate for removing such pollutants.
- Modified polymeric membranes are widely utilized to remove such type of pollutants.
- Polymeric membranes are modified with two types of materials :

a. Superhydrophobic

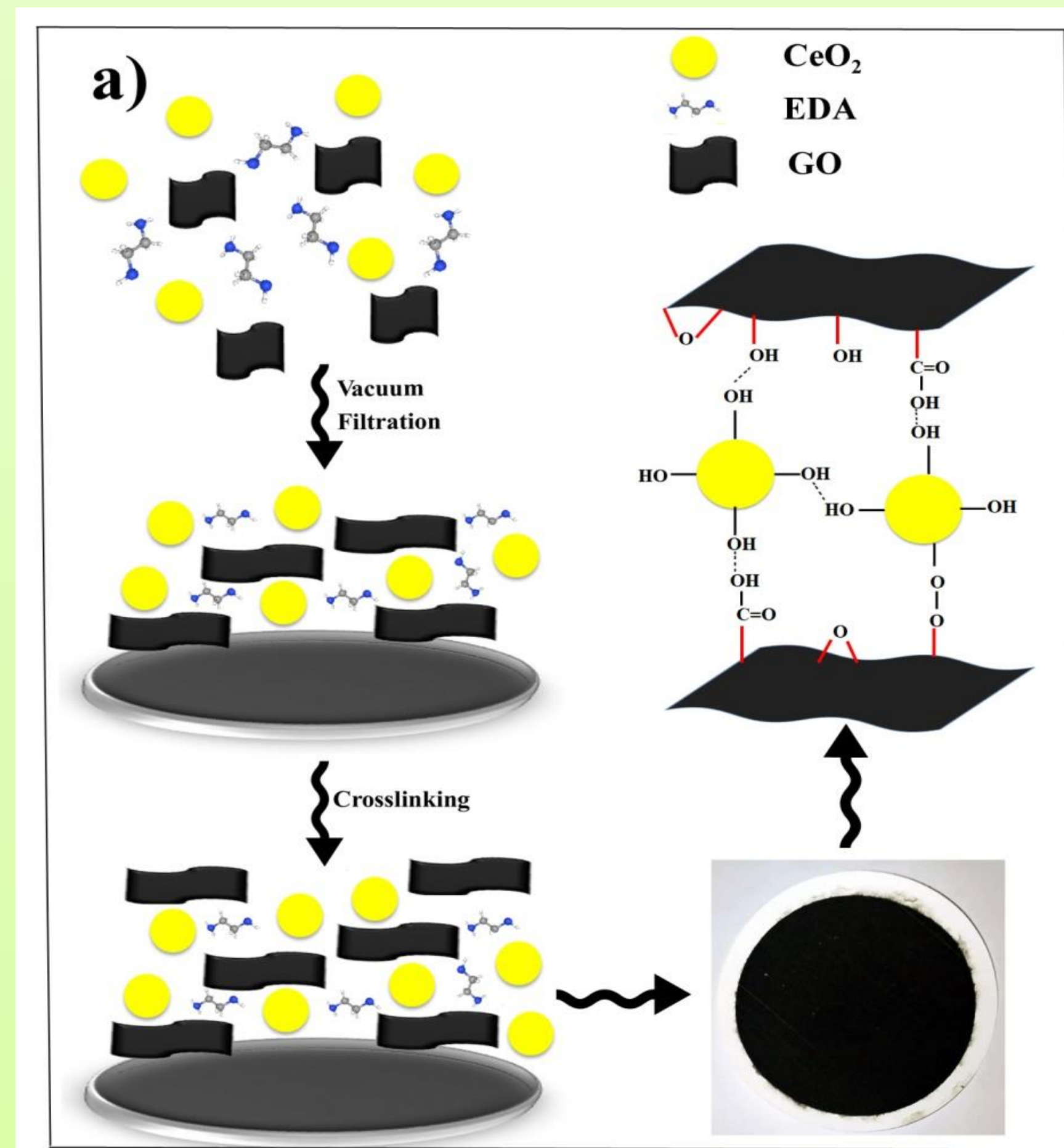
b. Superhydrophilic

- The underwater superoleophobic surfaces inspired by fish scales.
- Superhydrophilic membranes possess a promising separation performance for oil and soluble organic dye removal.

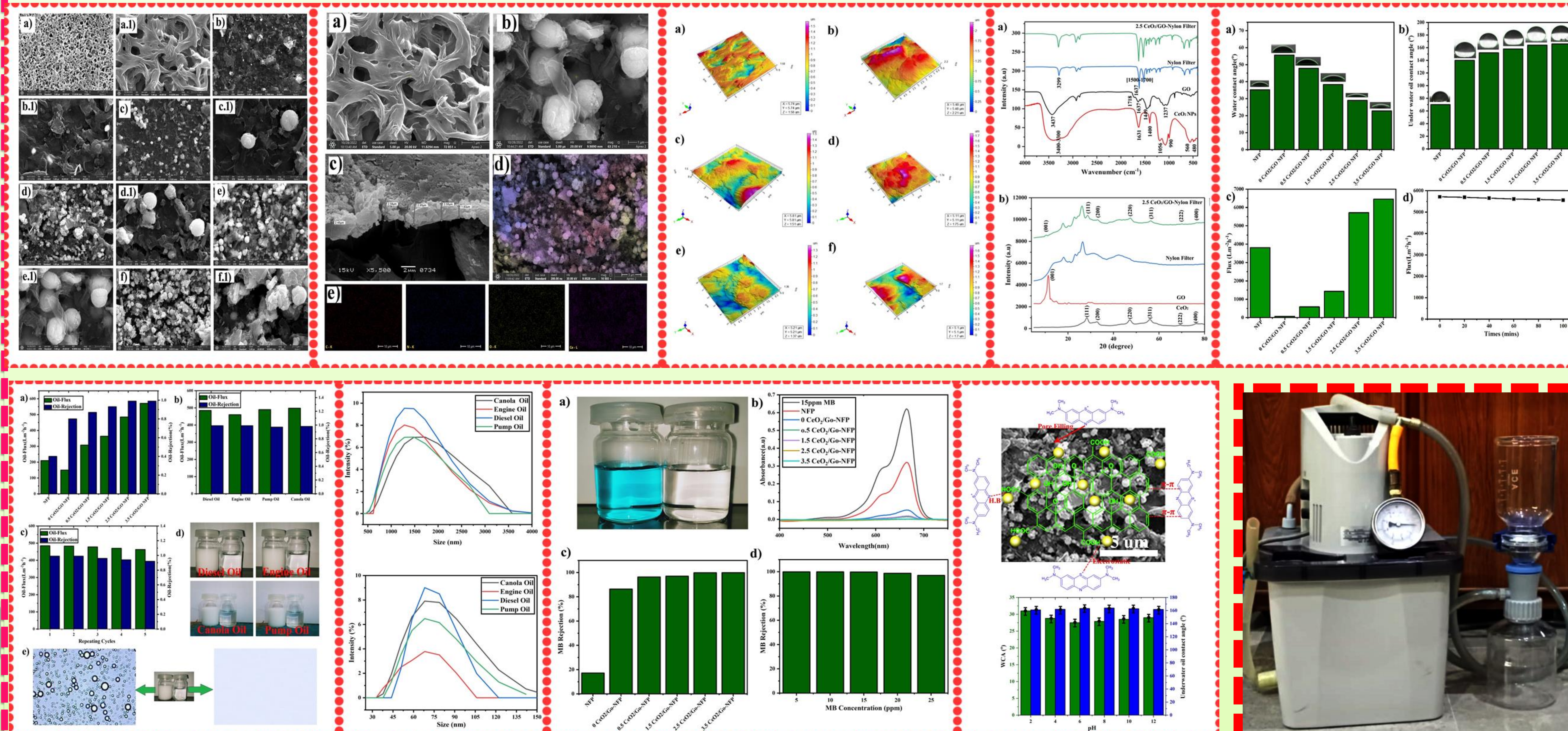
Materials and Method



Preparation of CeO₂/GO-nylon Filter



Results and Discussion



Conclusion

- The CeO₂/GO-nylon filter is prepared by vacuum coating process using EDA as a crosslinker.
- The CeO₂/GO-nylon filter have good underwater superoleophobic characteristics.
- It has high water flux of 6451 Lm⁻²h⁻¹ and 484 Lm⁻²h⁻¹ oil flux.
- It can reject 99% of oil and 99.9% of dye.

References

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