ECP 2024 Conference

The 3rd International Electronic Conference on Processes

29–31 May 2024 | Online

Synthesis, Characterization and Photocatalytic activity of Sb_2O_3 Nanoparticles: A step Towards Environmental Sustainability

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INTRODUCTION

- Environmental pollution associated with toxic organic pollutants due to rapid advancement and industrialization has become a grave concern [1-3].
- Photocatalytic degradation in the presence of visible light has become the most efficient way to remove organic pollutants from water [4,5].
- Sb_2O_3 nanoparticles offer a promising solution to this problem [6] as they have unique properties making them suitable for wastewater treatment.
- High volume ratios allow contact between pollutants and nanomaterials and this coupling leads to effective adsorption and catalytic degradation of pollutants [7-8].

METHODOLOGY

Fig. 1. Synthesis scheme

RESULTS & DISCUSSION

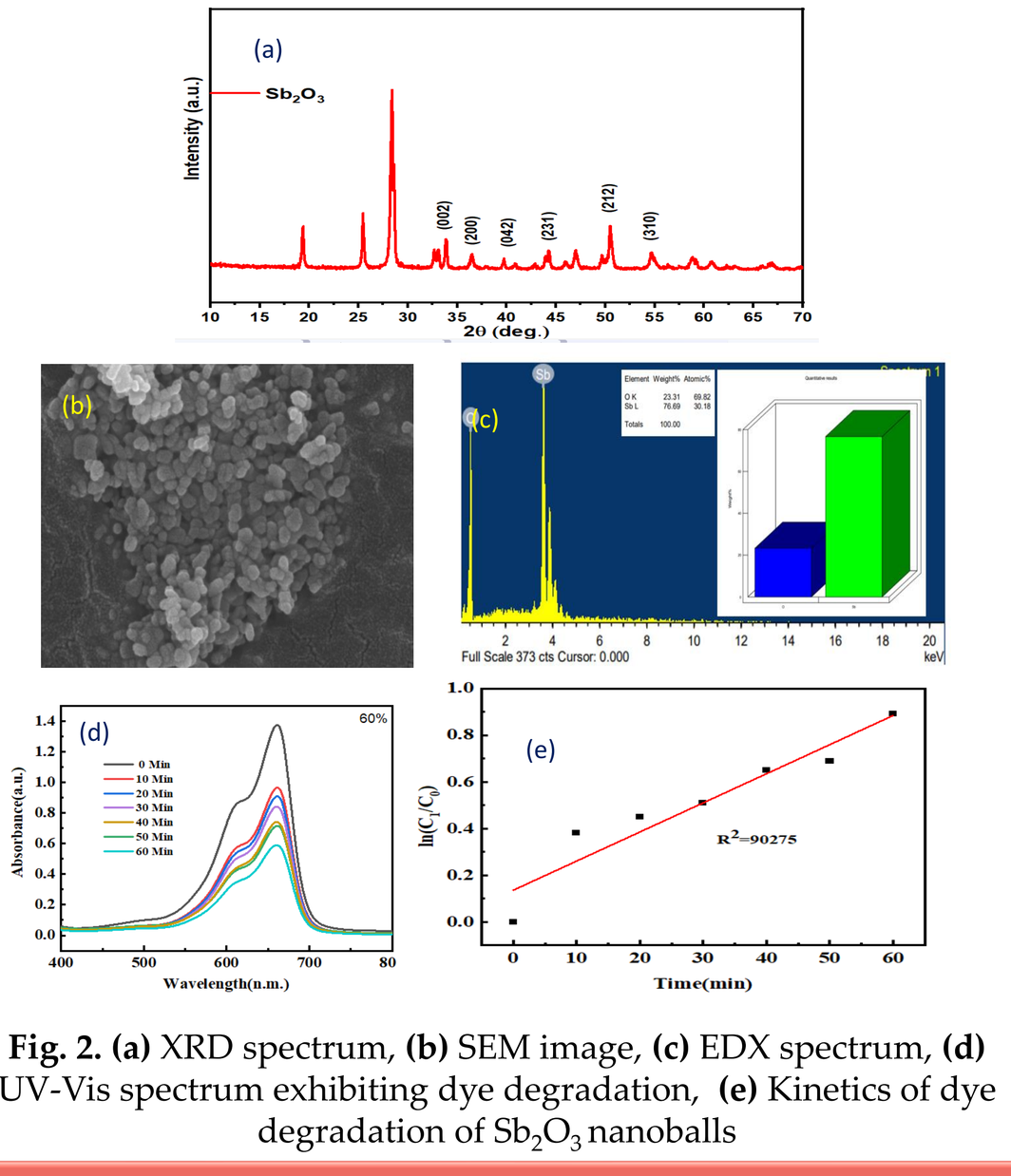

Fig. 2. (a) XRD spectrum, **(b)** SEM image, **(c)** EDX spectrum, **(d)** UV-Vis spectrum exhibiting dye degradation, **(e)** Kinetics of dye degradation of Sb_2O_3 nanoballs

CONCLUSION

- The Sb_2O_3 nanoballs were found to have appreciable dye degradation in 60 minutes, which may be due to the large surface area, small band gap, and fast charge transference character.
- In future Sb_2O_3 nanoballs could be utilized as a nano photocatalyst for wastewater remediation.

FUTURE WORK / REFERENCES

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