

RESEARCH ARTICLE TEMPLATE

[Insert a clear, concise, and informative research paper title]

CoCr₂O₄@GeO₂@ZnO Core-Shell Nanoparticle as a Novel Recoverable Catalyst: Preparation and Photocatalytic Degradation of Basic Fuchsin Dye

Sachin Shivaji Kushare*

Research Centre, Department of Chemistry, MVP Samaj's K.K. Wagh Arts, Science and
Commerce College, Pimpalgaon (B), 422209, Maharashtra, India

Corresponding author: sachinkushare7@gmail.com

Formatting checklist

- Font: Times New Roman, 12 pt.
- Line spacing: 1.5 throughout, including headings and references.
- Margins: left-hand side 3.85 cm and all sides 2.85 cm.
- Reference style: APA 7th edition. Maximum 20-25 references.
- Plagiarism strictly: Similarity below 10% and AI 5%.
- Pages and words: Maximum 10 pages and Maximum 3500 Words.

Abstract

[Write a concise summary of the research background, characterization methods, key photocatalytic results, catalyst recovery/reusability, and main conclusion. Replace all placeholders with verified experimental results.]

Keywords: Core-shell nanoparticles; Photocatalysis; Basic Fuchsin

1. Introduction

[Introduce dye pollution and the need for efficient photocatalysts. Summarize relevant research on CoCr₂O₄, GeO₂, ZnO, and core-shell nanostructures. Identify the research gap and state the objectives of this work [1].

2. Materials and Methods

[List chemicals and their purities, synthesis procedure for CoCr₂O₄@GeO₂@ZnO, reaction conditions, washing/drying/calcination steps, and characterization techniques (e.g., XRD, FTIR, SEM/EDX, TEM, UV–Vis/DRS, and BET where actually performed). Describe photocatalytic experiments, dye concentration, catalyst dose, pH, irradiation source,

sampling intervals, analytical method, degradation calculation, and recovery/reuse protocol.]

3. Results and Discussion

[Report and interpret only measured results. Discuss phase structure, morphology, elemental composition, photocatalytic performance, possible degradation mechanism, and catalyst recyclability. Compare with published work using appropriate citations.]

Table 1. Example layout for photocatalytic degradation results (enter measured data).

Time (min)	Absorbance	Degradation (%)	Notes
0	[value]	0	Initial solution

Figure 1. [Insert a high-resolution figure and write a self-contained caption.]

4. Conclusions

[State the principal findings about synthesis, characterization, dye degradation, and recovery/reusability. Include quantitative performance only when supported by experimental data.]

Acknowledgements

[Add acknowledgements if applicable.]

Funding

[State the actual funding source or “This research received no external funding,” if accurate.]

Conflict of Interest

[Declare any conflicts, or state that there are no conflicts if accurate.]

Author Contributions

[Describe the author’s actual contributions.]

References

APA 7th edition format:

- [1]. Kushare, S. S., Bobade, V. D., Tope, D. R., & Borhade, A. V. (2021). CoCr₂O₄@GeO₂@ZnO core-shell nanoparticle as a novel recoverable catalyst: Preparation, characterization and photocatalytic degradation of basic fuchsin dye. Journal of the Indian Chemical Society, 98(12), Article 100239. <https://doi.org/10.1016/j.jics.2021.100239>