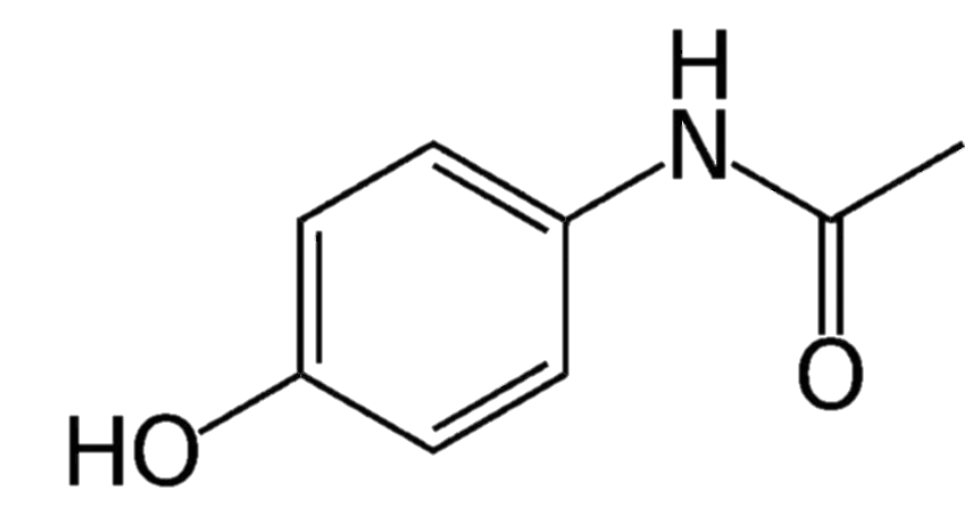


Optimization of Photocatalytic Removal Of Paracetamol Using Sulfur Doped Graphitic Carbon Nitride (SGCN)

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Background of Research

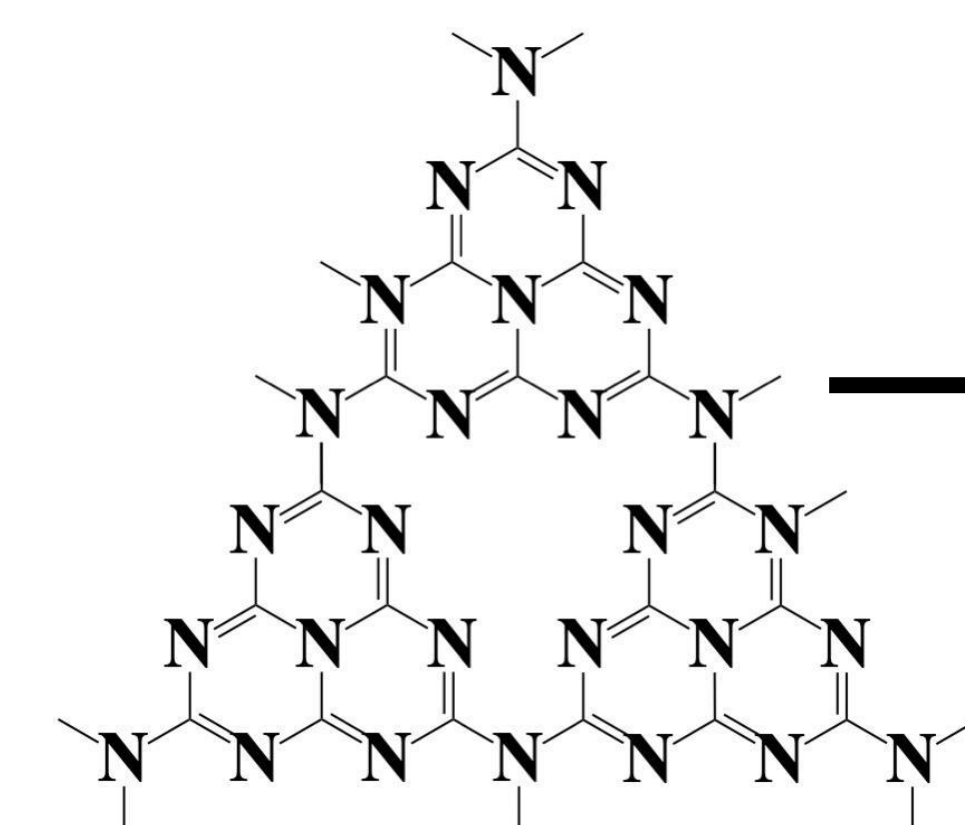


Widely used as

- Antipyretic
- Analgesic

Excessive usage

- Accumulation in ecosystem
- Resist to removal by conventional wastewater treatment

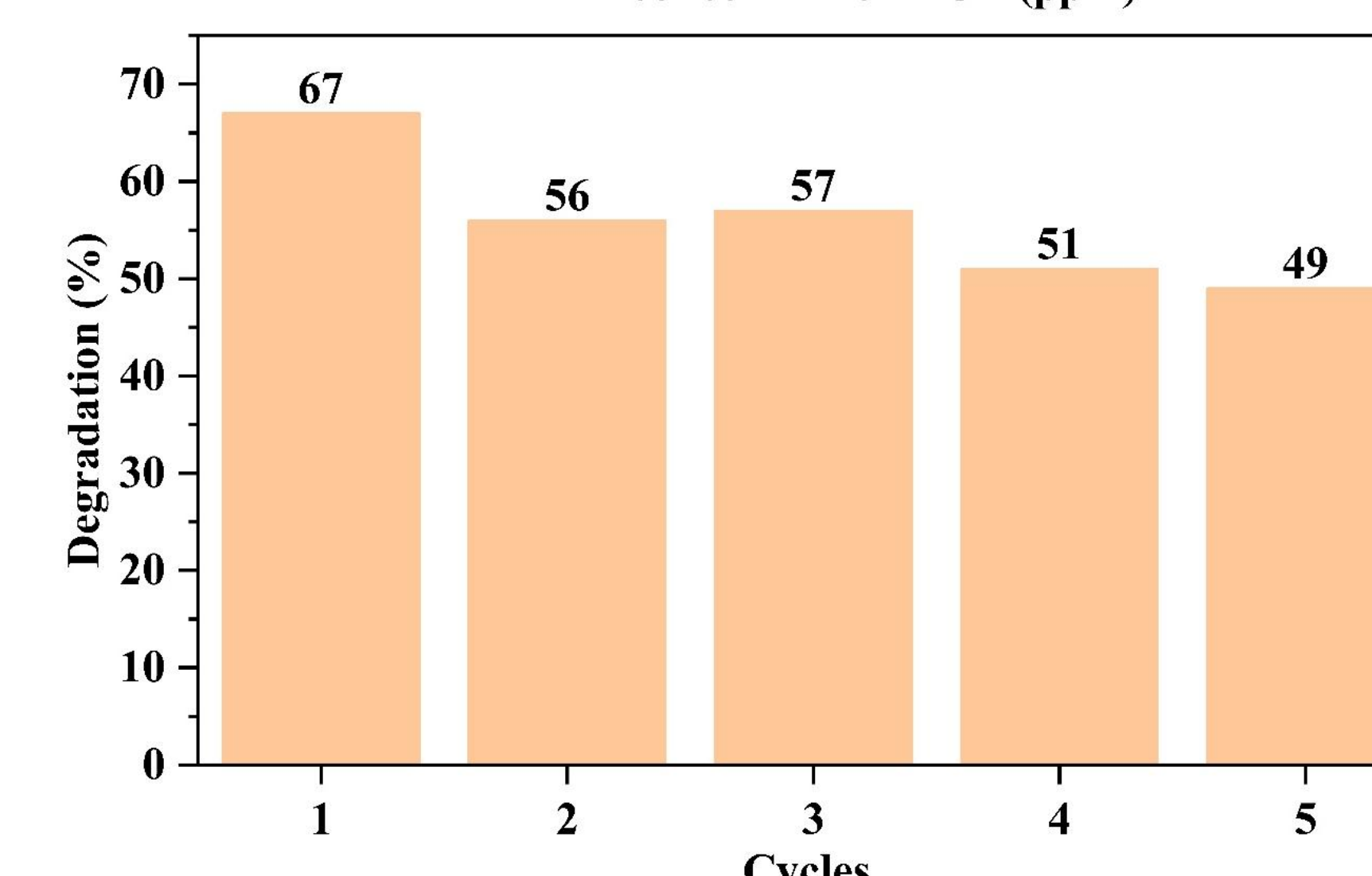
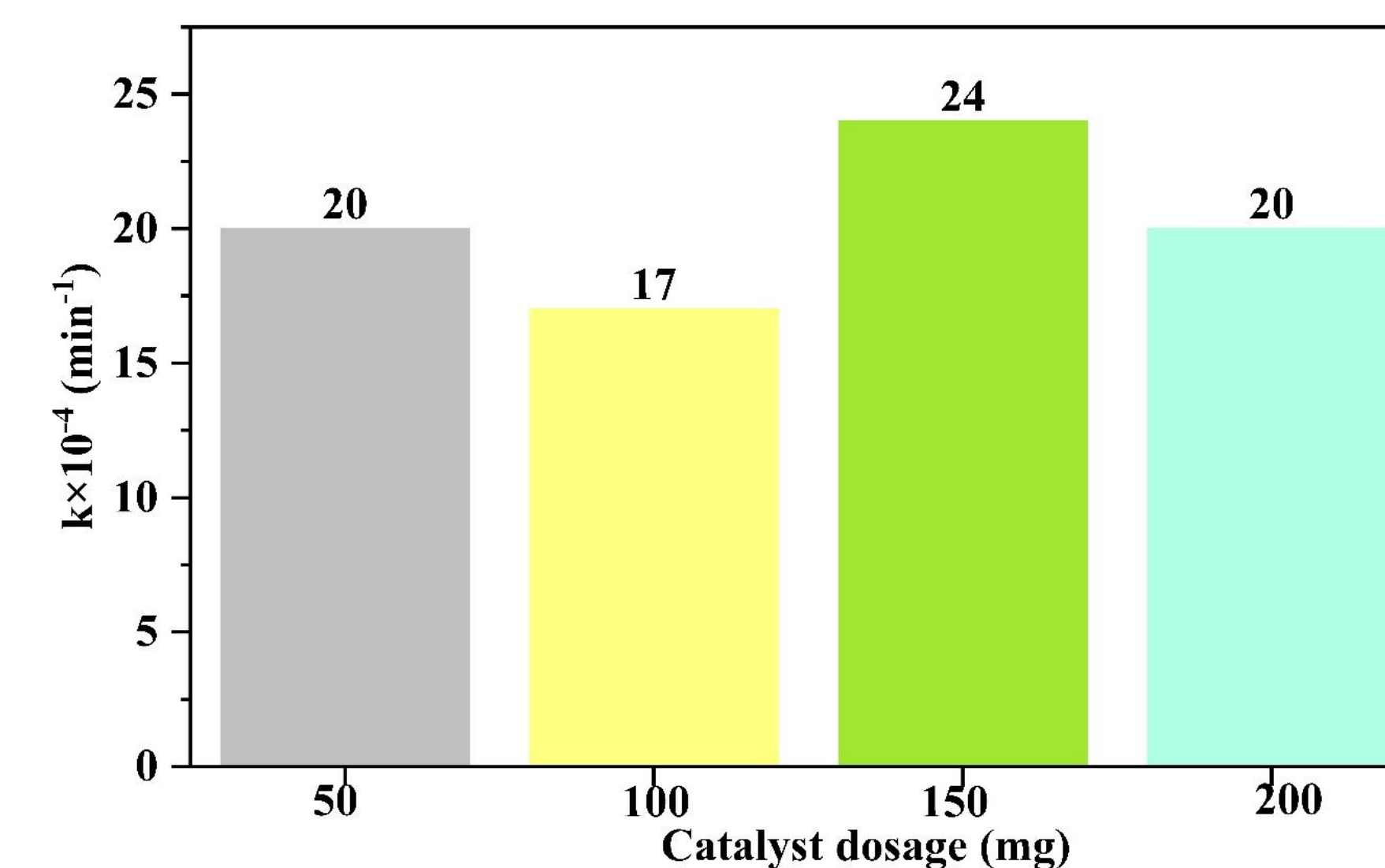
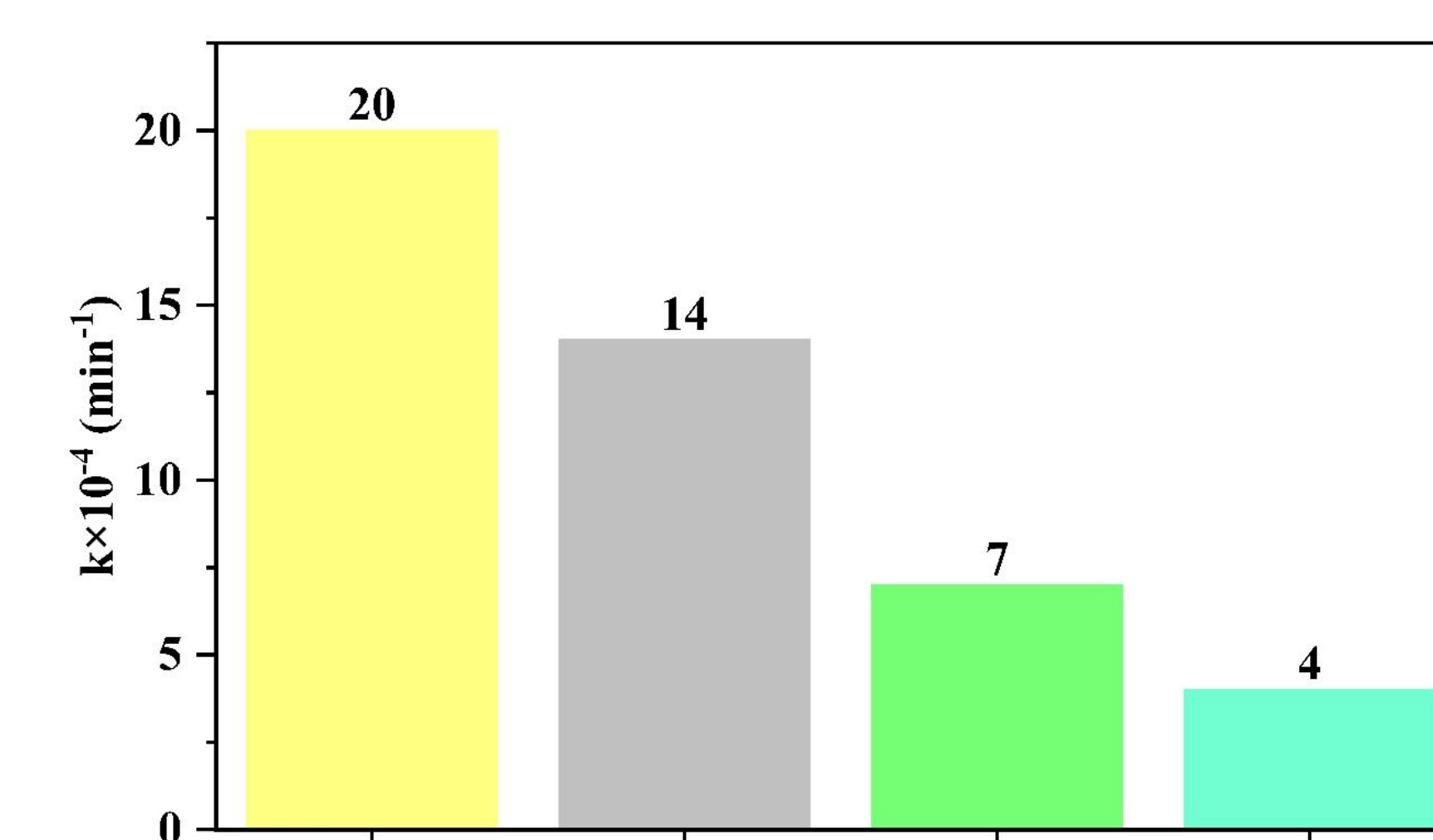
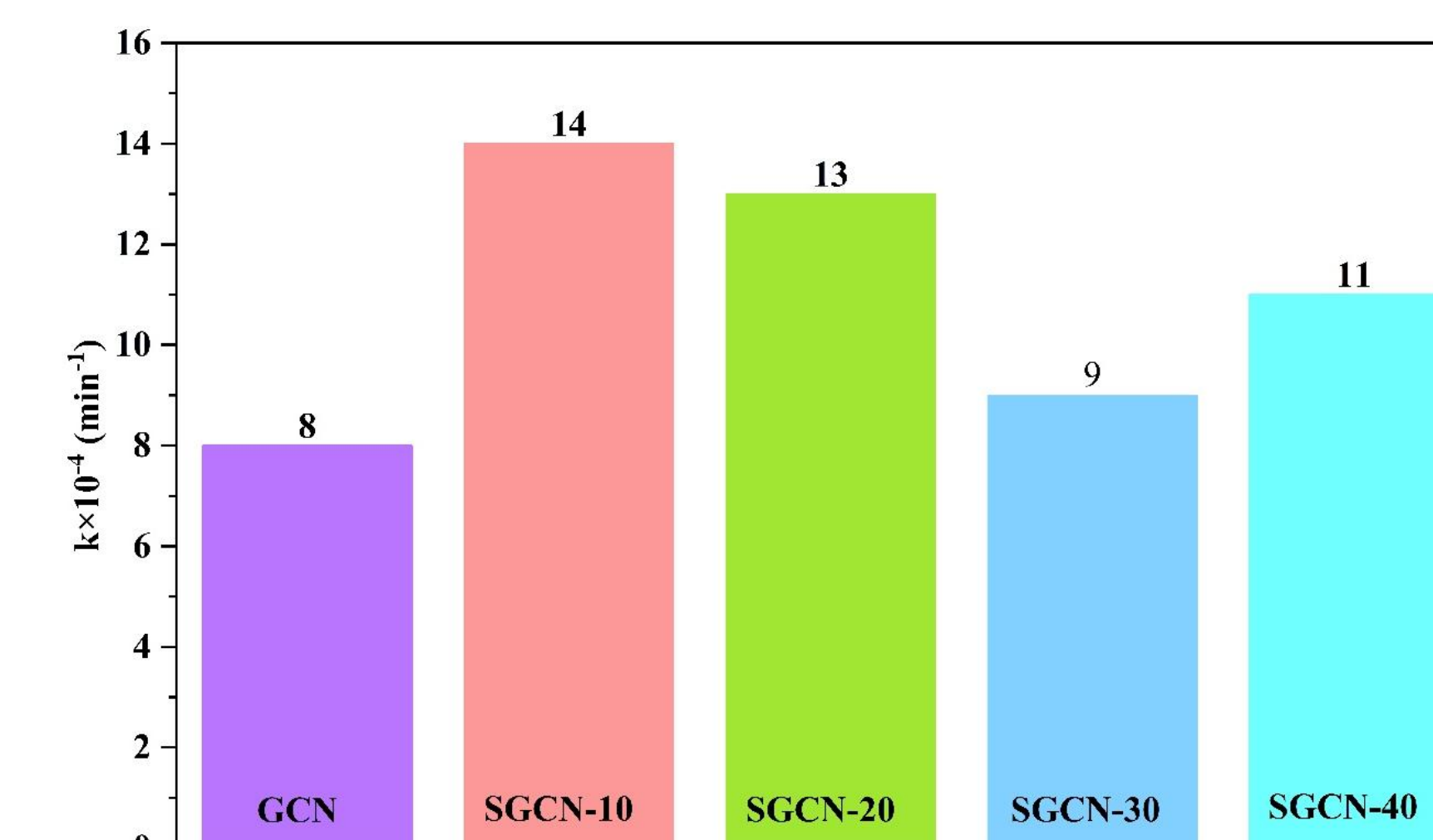


Advantages

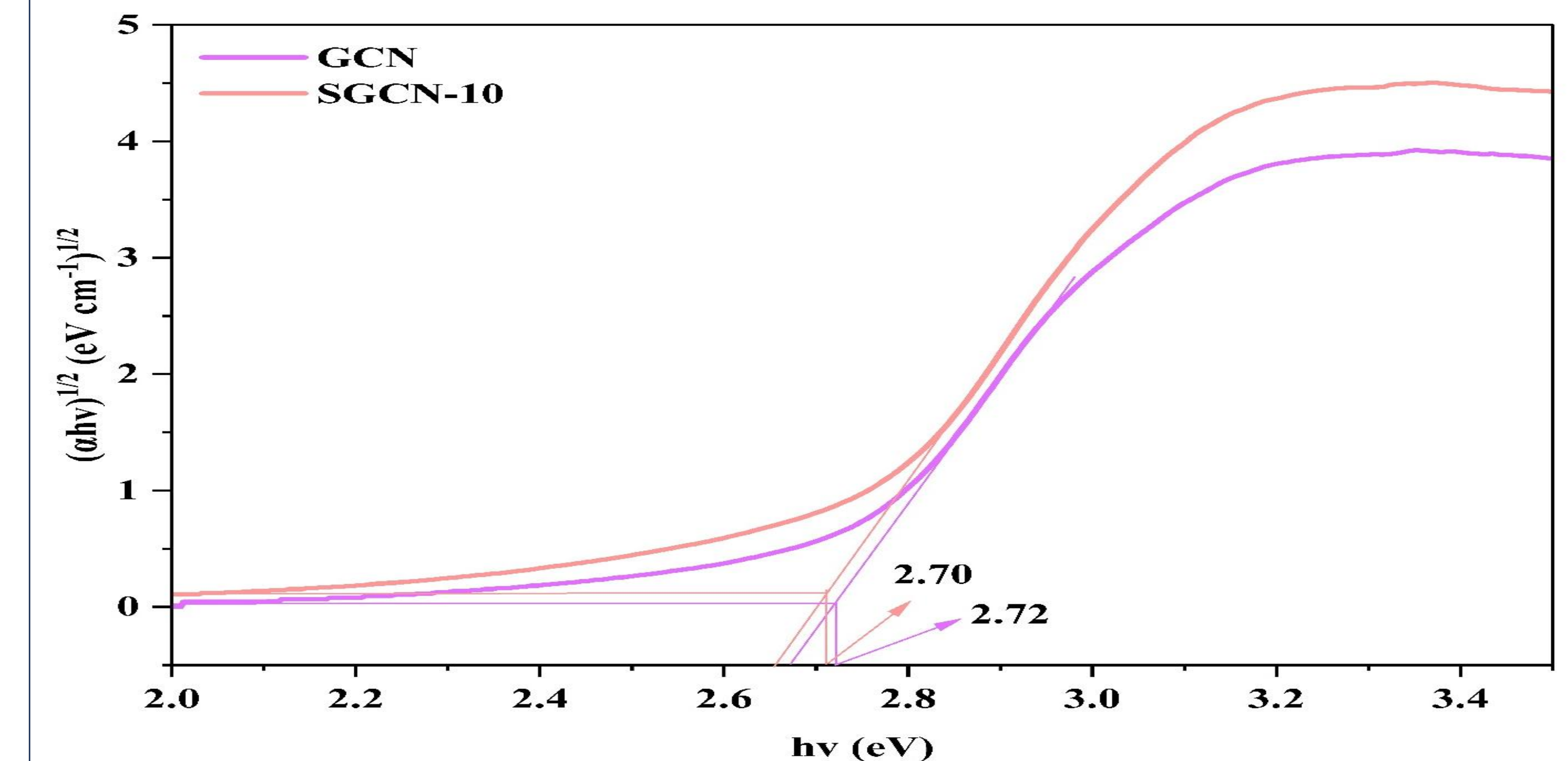
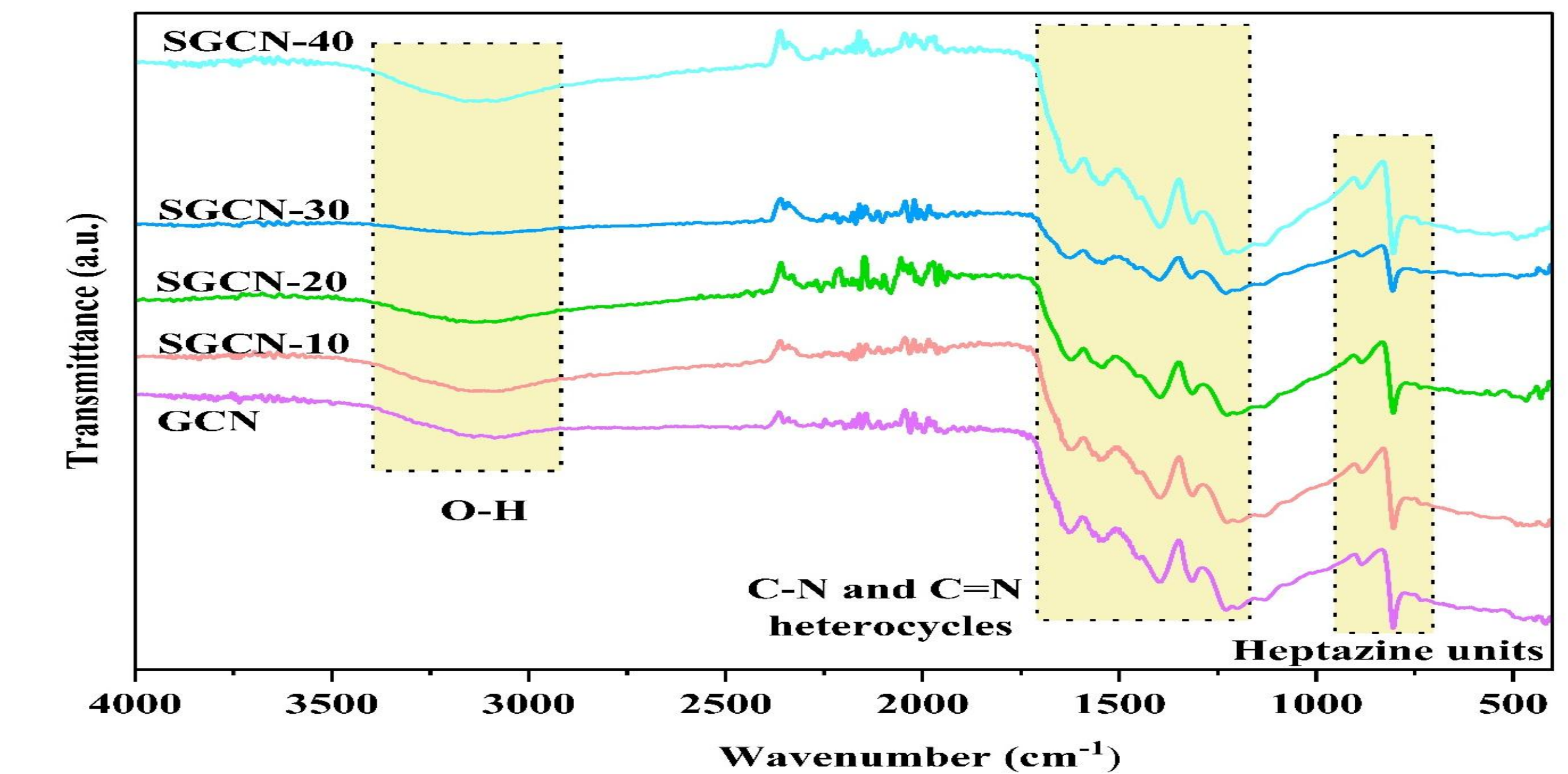
Limitations

- Metal-free
- Ease of synthesis
- Bandgap ~2.7 eV
- Fast e^-/h^+ recombination
- Low light harvesting
- Slow redox potential

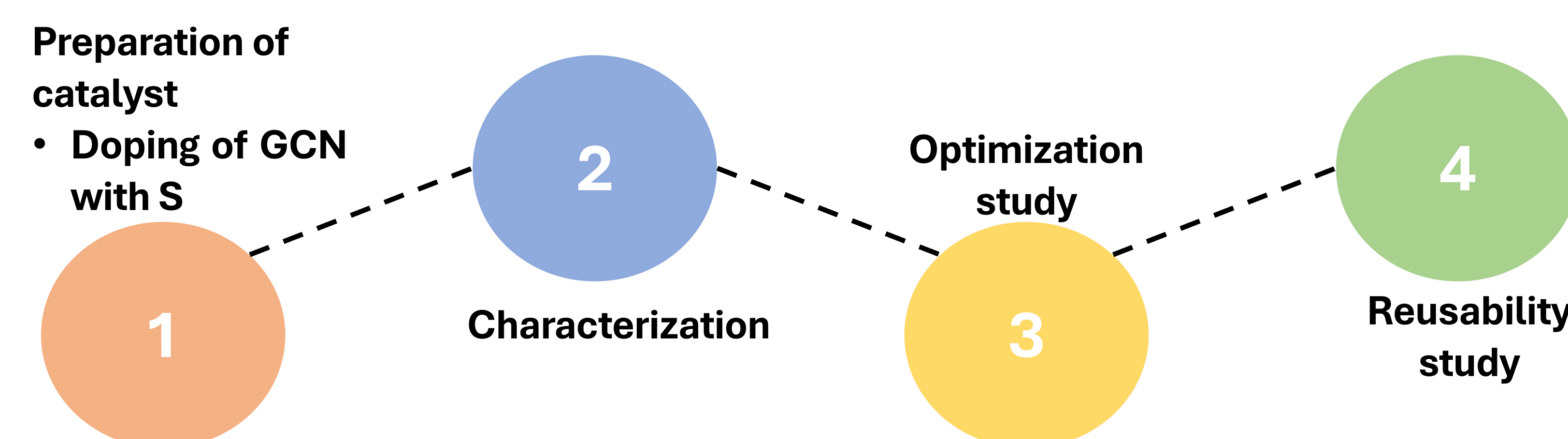
Photocatalytic Study



Characterizations



Methodology



Conclusion

- Best performance using 150 mg of SGCN10 with 5 ppm PCT at pH 5
- 3-folds increase in kinetic rate after doping with S

References

1. E. Kharatzadeh and M. Khademalrasool, 2024, 50, 16540-16552.
2. M. Zuo, X. Li, Y. Liang, F. Zhao, H. Sun, C. Liu, X. Gong, P. Qin, H. Wang, Z. Wu and L. Luo, Separation and Purification Technology, 2023, 308.
3. H. Chauhan and R. Gupta, 2025, 75.

Catalyst	GCN	SCN-10
Surface area	11.44 m ² /g	7.98 m ² /g
Pore radius	1.92 nm	2.16 nm
Pore volume	0.06 cm ³ /g	0.04 cm ³ /g