

SUPPORTING INFORMATION

Fabrication of core-shell structured organic-inorganic hybrid nanocatalyst for the expedient synthesis of Polysubstituted Oxazoles *via* tandem oxidative cyclization pathway

Sriparna Dutta,[†] Shivani Sharma,[†] Aditi Sharma[†] and Rakesh K. Sharma^{,†}*

[†]Green Chemistry Network Centre, Department of Chemistry, University of Delhi, New Delhi-110007, India. Fax: +91-011-27666250; Tel: 011-276666250 Email: rksharmagreenchem@hotmail.com

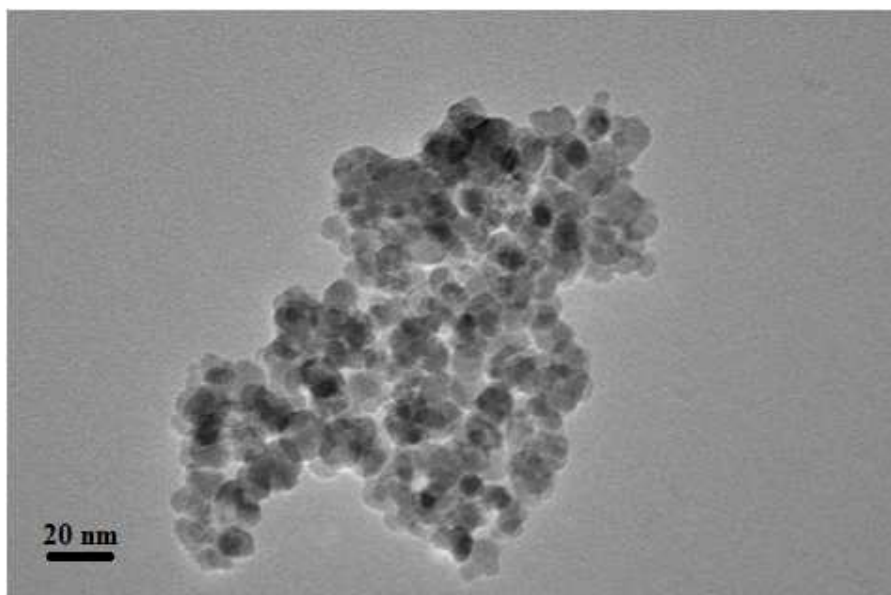


Figure S1. TEM image of the final Cu-BPy@Am-SiO₂@Fe₃O₄ nanocatalyst.

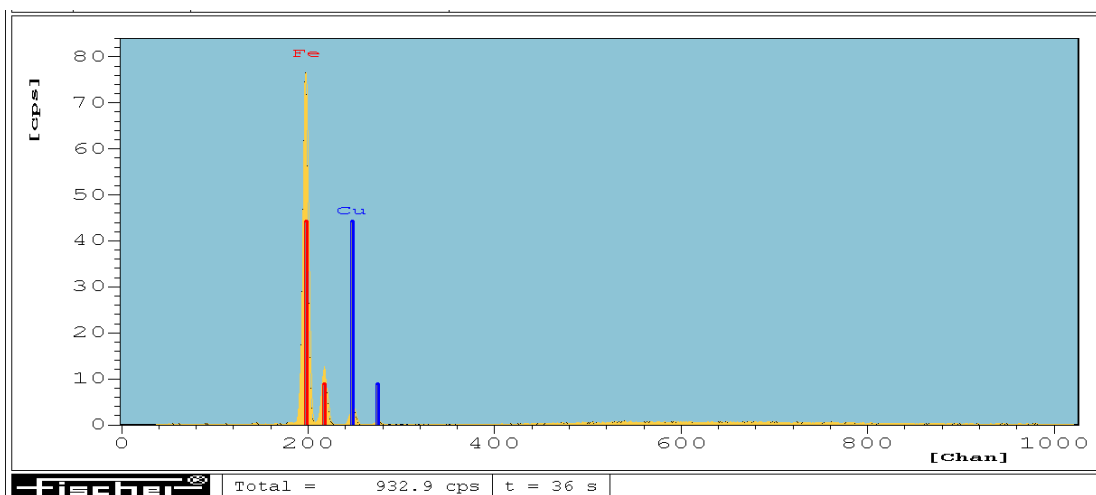


Figure S2. ED-XRF spectrum of the Cu-BPy@Am-SiO₂@Fe₃O₄ nanocatalyst.

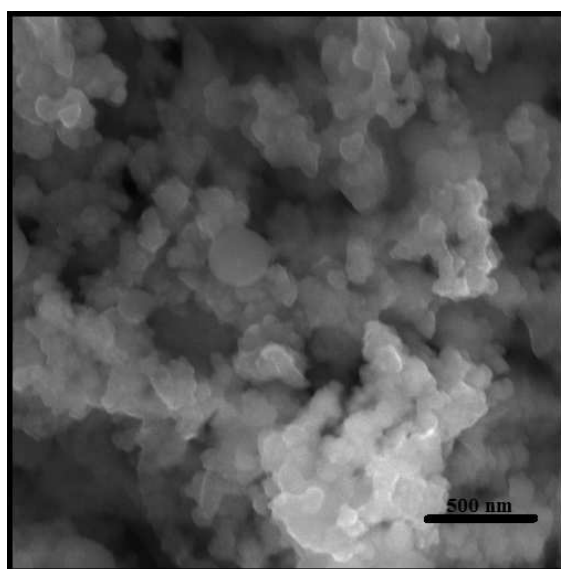
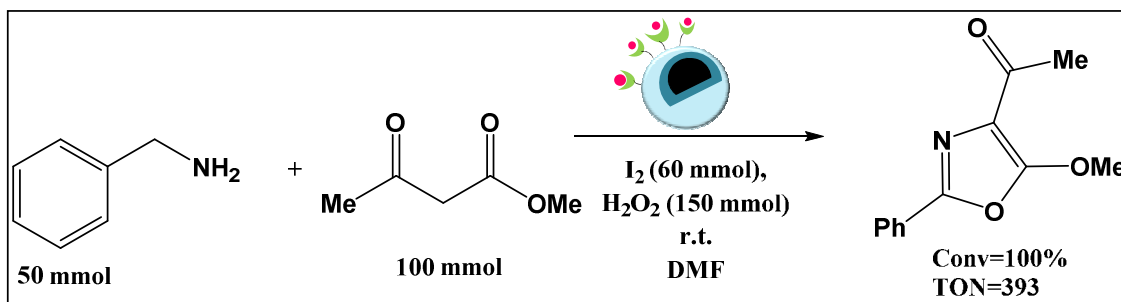


Figure S3. SEM image of the recovered Cu-BPy@Am-SiO₂@Fe₃O₄ nanocatalyst (obtained after 8 runs).

Table S1. Influence of additives on tandem oxidative cyclization of amines and 1,3 dicarbonyls

Entry	Additive	Conversion % ^[b]	TON ^[c]	TOF ^[d]
1.	No additive	48	187	62
2.	NIS	75	295	148
3.	I ₂	100	393	197
4.	KI	55	216	72
5.	TBAI	52	204	68
6.	NBS	50	196	65

[a] Reaction conditions: Methylacetoacetate (1 mmol), benzylamine (2 mmol), Cu-BPy@Am-SiO₂@Fe₃O₄ catalyst (30 mg), H₂O₂ (2 mmol), additive (1.2 mmol), DMF (3 mL), 3h; [b] Conversion percentages determined *via* GC-MS, [c] TON is the number of moles of product per mol of catalyst, [d] TOF=TON/hour



Scheme S1. Scale-up synthesis of product 3a.

Table S2. Comparison with the earlier reports on TOC approach for oxazole synthesis

Entry	1,3-dicarbonyl compound	Benzylamine	Reaction conditions	Isolated Yield%	Ref
1.			Cu(OAc) ₂ ·H ₂ O, I ₂ , TBHP, rt, DMF	79	11
2.			Cu(OAc) ₂ ·H ₂ O, I ₂ , TBHP, rt, DMF	76	11
3.			Electrolysis, rt	87	14
4.			Electrolysis, rt	85	14
5.			Cu-BPy@Am-SiO ₂ @Fe ₃ O ₄ nanocatalyst, I ₂ , H ₂ O ₂ , r.t., DMF	89	This work
6.			Cu-BPy@Am-SiO ₂ @Fe ₃ O ₄ nanocatalyst, I ₂ , H ₂ O ₂ , r.t., DMF	86	This work