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Supplementary Information

Hybrid Magnetic Irish Moss/Fe_3O_4 as a Nano-Biocatalyst for Synthesis of Imidazopyrimidine Derivatives

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1. Table 3. The Synthesis of imidazopyrimidine derivatives 7, 8, 9.

Entry	Product	Aldehyde	CH acid	Time (min)	Yield (%)	MP (°C)	
						Observed	Reported
1	**7a**	4-F-C_6H_4	**4**	10	94	267-269	270[1]
2	**7b**	4-Cl-C_6H_4	**4**	15	95	235-238	238[2]
3	**7c**	2-Cl-C_6H_4	**4**	20	95	235-237	236-238[3]
4	**7d**	2,4-Cl-C_6H_3	**4**	15	95	250-252	248[2]
5	**7e**	3-Br-C_6H_4	**4**	15	94	237-240	238-240[3]
6	**7f**	4-Br-C_6H_4	**4**	20	94	318-320	317-319[3]
7	**7g**	4-CN-C_6H_4	**4**	25	96	237-238	-
8	**7i**	3-NO_2-C_6H_4	**4**	20	90	232-235	236[2]
9	**7k**	C_6H_5	**4**	35	89	234-236	235-236[2]
10	**7l**	4-Me-C_6H_4	**4**	45	88	205-207	205[1]
11	**7m**	4-OMe-C_6H_4	**4**	65	85	232-234	230-233[4]
12	**7o**	3-OH-C_6H_4	**4**	50	89	233-235	234-235[1]
13	**7p**	4-OH-C_6H_4	**4**	60	90	234-235	234-235[1]
14	**8b**	4-Cl-C_6H_4	**5a**	25	94	>300	337-339[5]
15	**8c**	2-Cl-C_6H_4	**5a**	30	94	>300	>300[4]
16	**8d**	2,4-Cl-C_6H_3	**5a**	25	95	>300	>300[4]
17	**8e**	3-Br-C_6H_4	**5a**	25	93	300-302	294-296[6]
18	**8f**	4-Br-C_6H_4	**5a**	30	90	315-316	312-314[5]
19	**8j**	4-NO2-C_6H_4	**5a**	30	89	>300	>300[7]
20	**8k**	C_6H_5	**5a**	40	87	>300	>300[7]

21	**8l**	4-Me-C_6H_4	**5a**	50	88	>300	>300[8]
22	**8m**	4-OMe-C_6H_4	**5a**	65	89	>300	389[9]
23	**8o**	3-OH-C_6H_4	**5a**	40	91	>300	-
24	**8p**	4-OH-C_6H_4	**5a**	60	87	>300	>300[5]
25	**9b**	4-Cl-C_6H_4	**5b**	20	95	>300	>300[10]
26	**9c**	2-Cl-C_6H_4	**5b**	20	93	>300	>300[4]
27	**9e**	3-Br-C_6H_4	**5b**	25	92	>300	>300[4]
28	**9f**	4-Br-C_6H_4	**5b**	25	94	>300	>300[4]
29	**9j**	4-NO2-C_6H_4	**5b**	25	90	>300	>300[10]
30	**9k**	C_6H_5	**5b**	40	86	309-311	312-313[5]
31	**9l**	4-Me-C_6H_4	**5b**	45	85	295-298	293-295[6]

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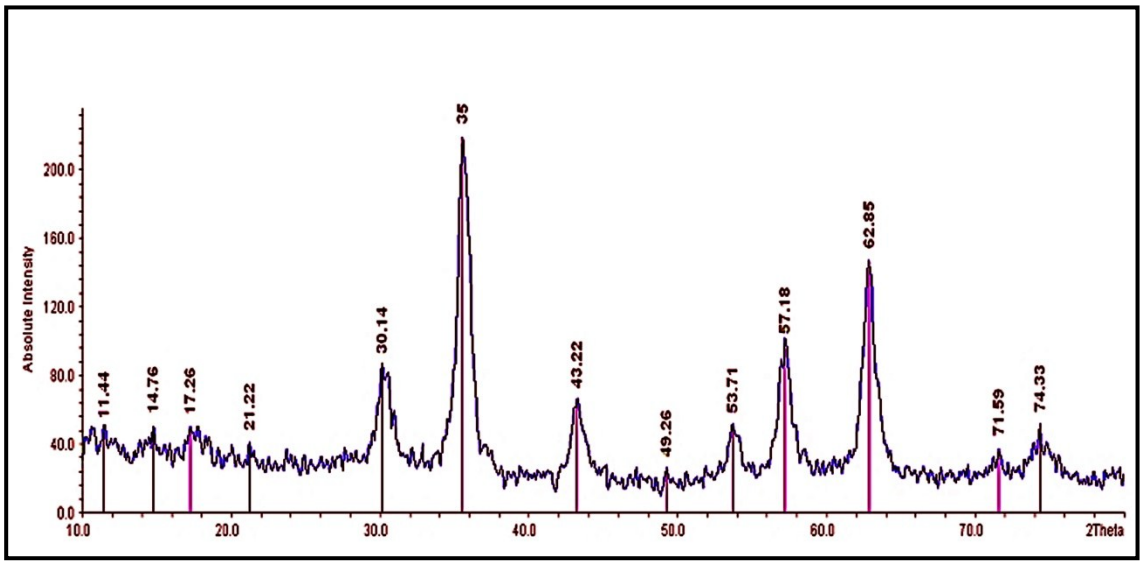
10. G. Liu, Q. Shao, S. Tu, L. Cao, C. Li, D. Zhou and B. Han, *Journal of Heterocyclic Chemistry*, 2008, **45**, 1127-1130.

3. X-ray diffraction pattern of Fe_3O_4@IM



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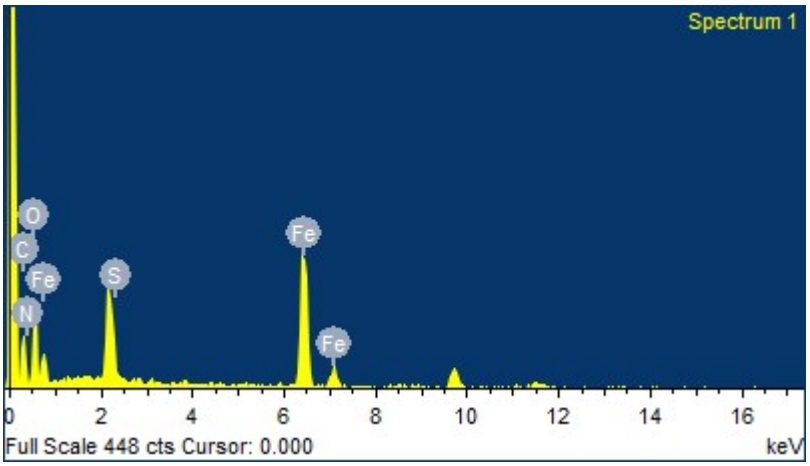
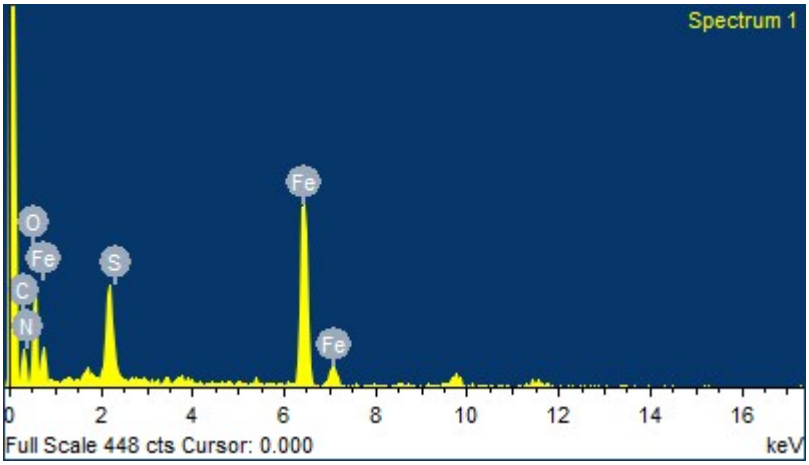
4. EDX analysis of Fe3O4@IM a) before reaction b) after recycling

a)



b)



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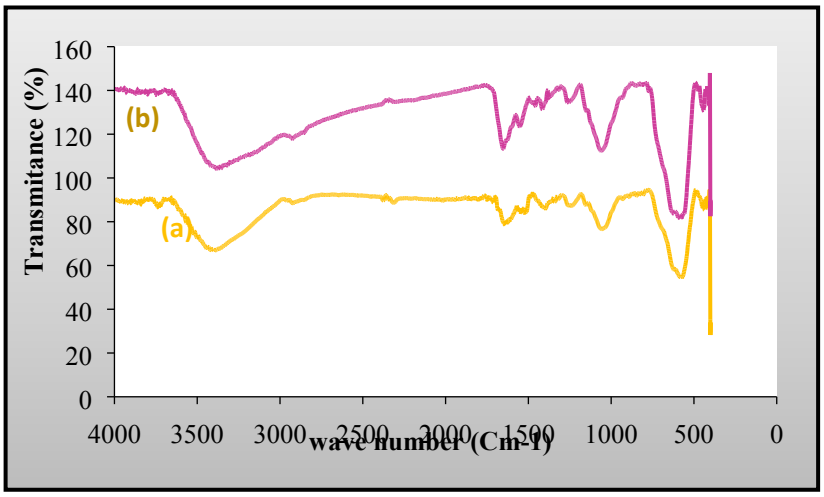
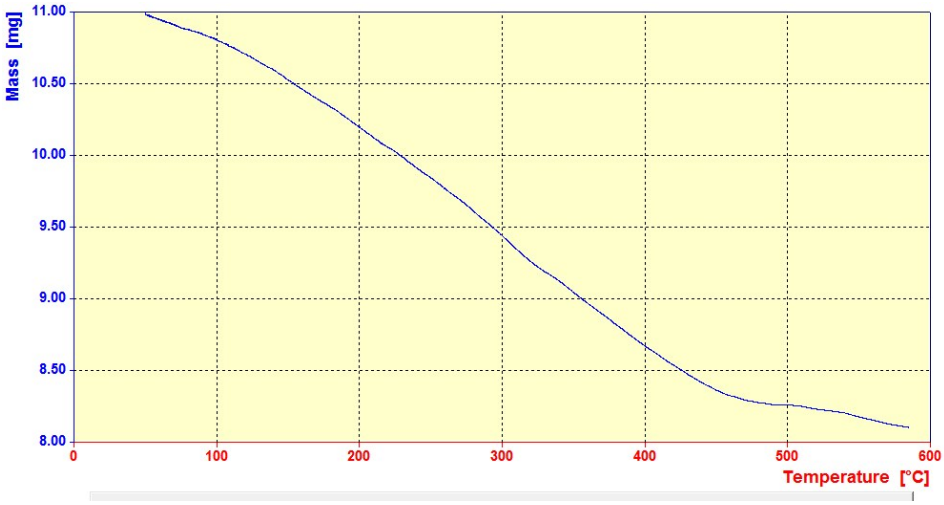
5. **IR analysis of catalyst a) before and b) after six subsequent run.**



6. **TGA analysis of Fe_3O_4@IM**



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7. VSM analysis of Fe_3O_4@IM and Fe_3O_4