Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Catalytic Synthesis of Benzimidazoles and Organic Carbamates by Polymer Supported Zinc Catalyst through CO_2 Fixation

Imdadul Haque Biswas[a,#], Surajit Biswas[a,#], Sarikul Islam[a], Sk Riyajuddin[b], Priyanka Sarkar,[a] Kaushik Ghosh[b], and Sk Manirul Islam*[a]

[a]Department of Chemistry, University of Kalyani, Kalyani, Nadia, 741235, West Bengal, India

[b]Institute of Nano Science and Technology Mohali 160062 (India)

[#]Authors contributed equally

Materials

All chemicals were purchased from commercially available sources and used as received without further purification. Solvents were distilled and dried through standard methods before use.

Characterization Techniques

Exeter Analytical Inc. model: CE 440 instrument was used to know elemental composition of ligand and catalyst. Fourier-transform infrared spectroscopy was carried out on a Perkin-Elmer FTIR 783 spectrophotometer using KBr pellets. Bruker D8 Advance X-ray diffractometer using Cu-Kα radiation (λ = 1.5418 Å) operating at 40 kV and 40 mA was utilized to record powder X-ray diffraction (PXRD) data of samples. In order to understand the morphologies of both ligand and catalyst we have done FE-SEM through (ZEISS EVO40, England) equipped with EDAX facility. Thermal stability of samples was monitored by Mettler Toledo TGA/DTA 851 instrument. Bruker AMX- 400 instrument was operates for ^{1}H NMR spectra. To measure the metal loading in catalyst (both fresh and used catalyst) AAS analysis was performed on Spectra- AA 240 (Agilent Technologies).

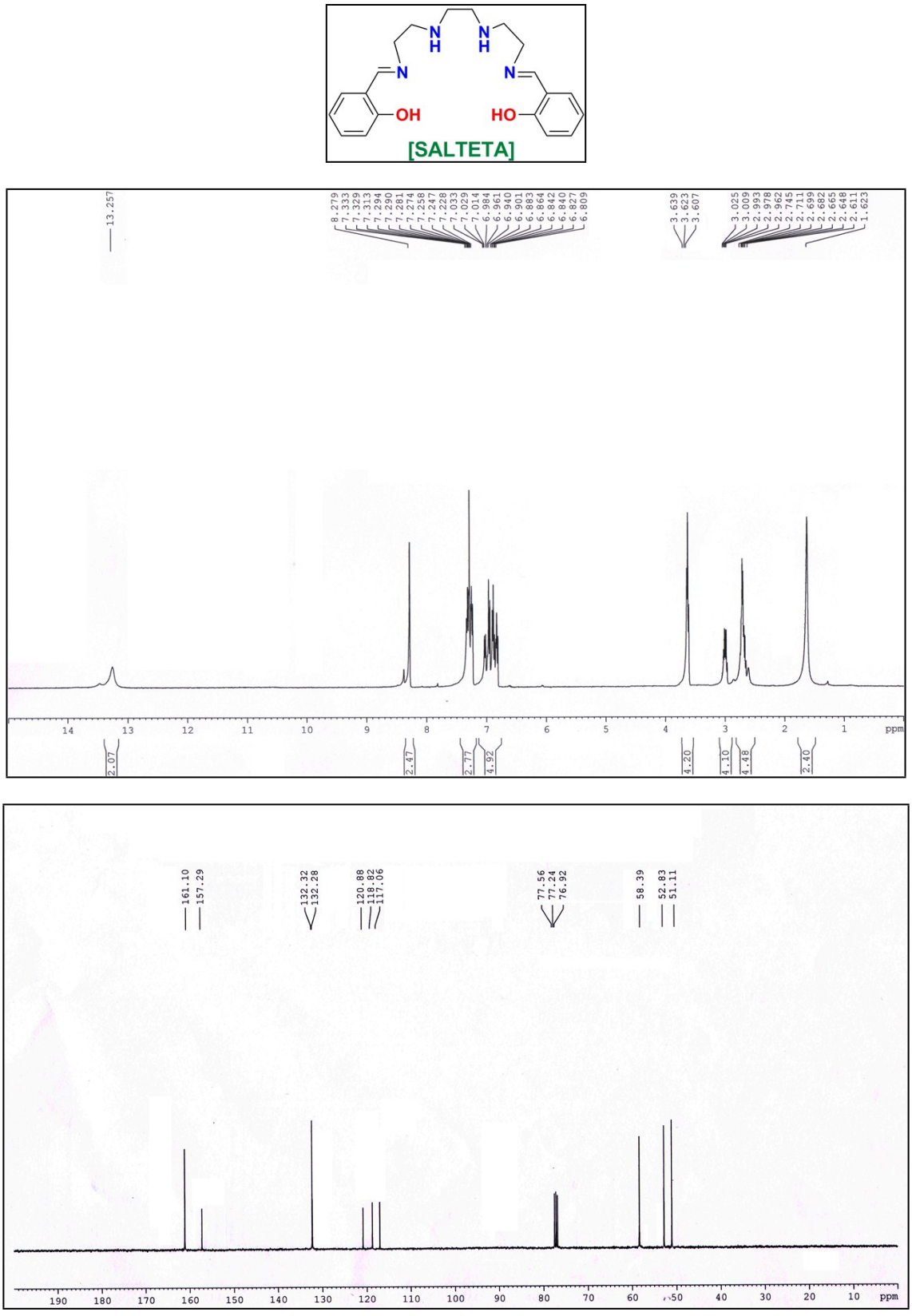


Figure S1: ^{1}H NMR and ^{13}C spectra of [SALTETA] ligand.

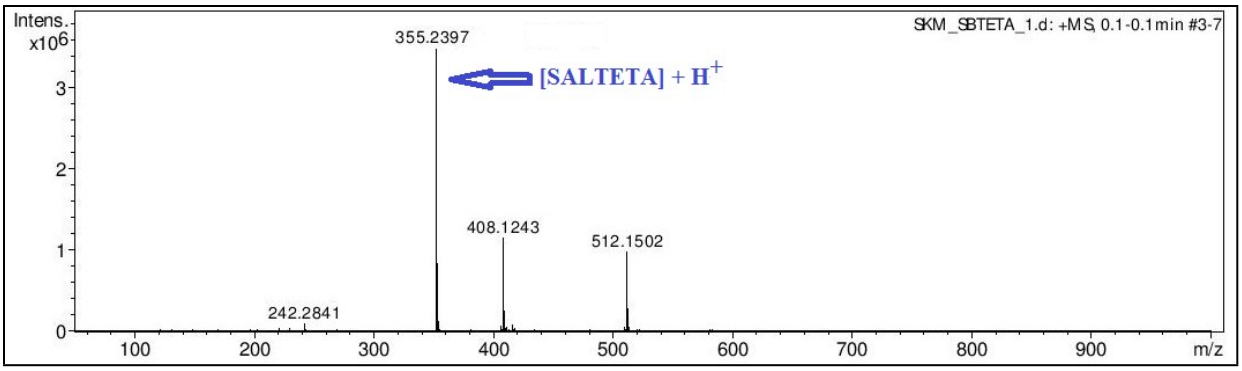


Figure S2: Mass spectra of [SALTETA] ligand.

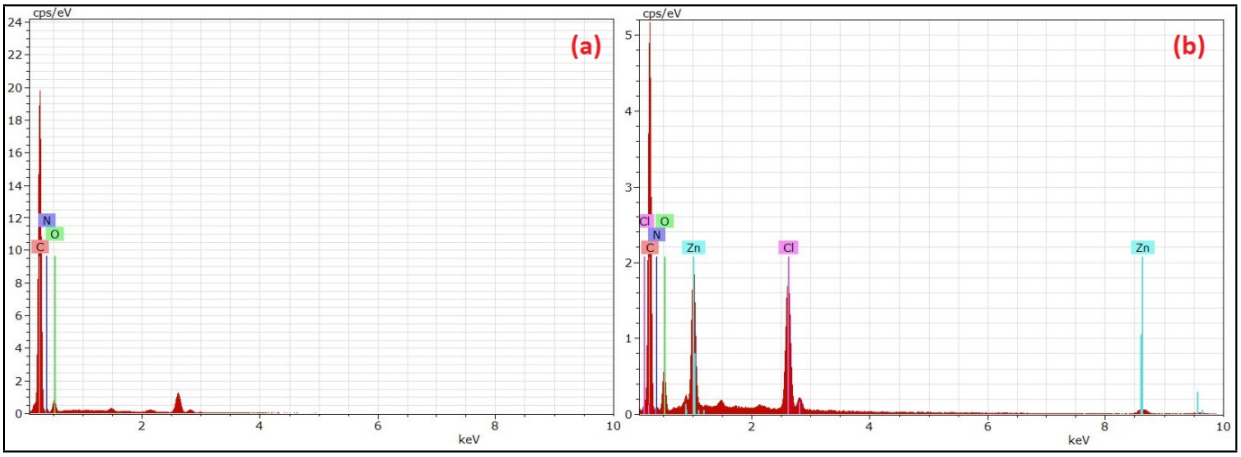
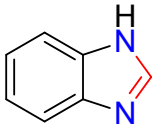


Figure S3: Energy dispersive X-Ray pattern of [PS-SALTETA] ligand (a) and [PS-Zn(II)SALTETA] catalyst (b).

NMR Spectra of products



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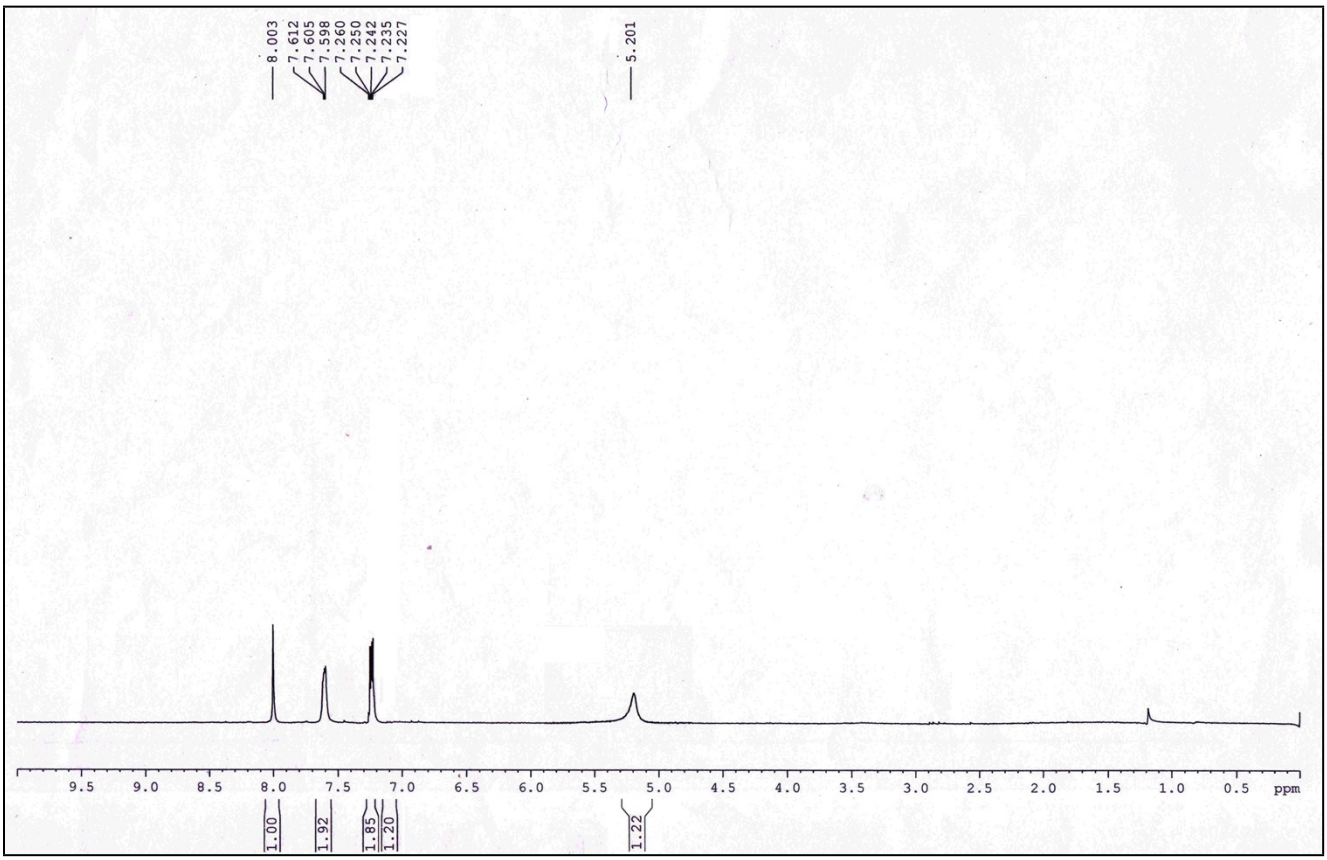
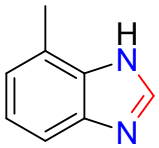


Figure S4: ^{1}H NMR spectra of 1H-benzo[d]imidazole (in $CDCl_3$).



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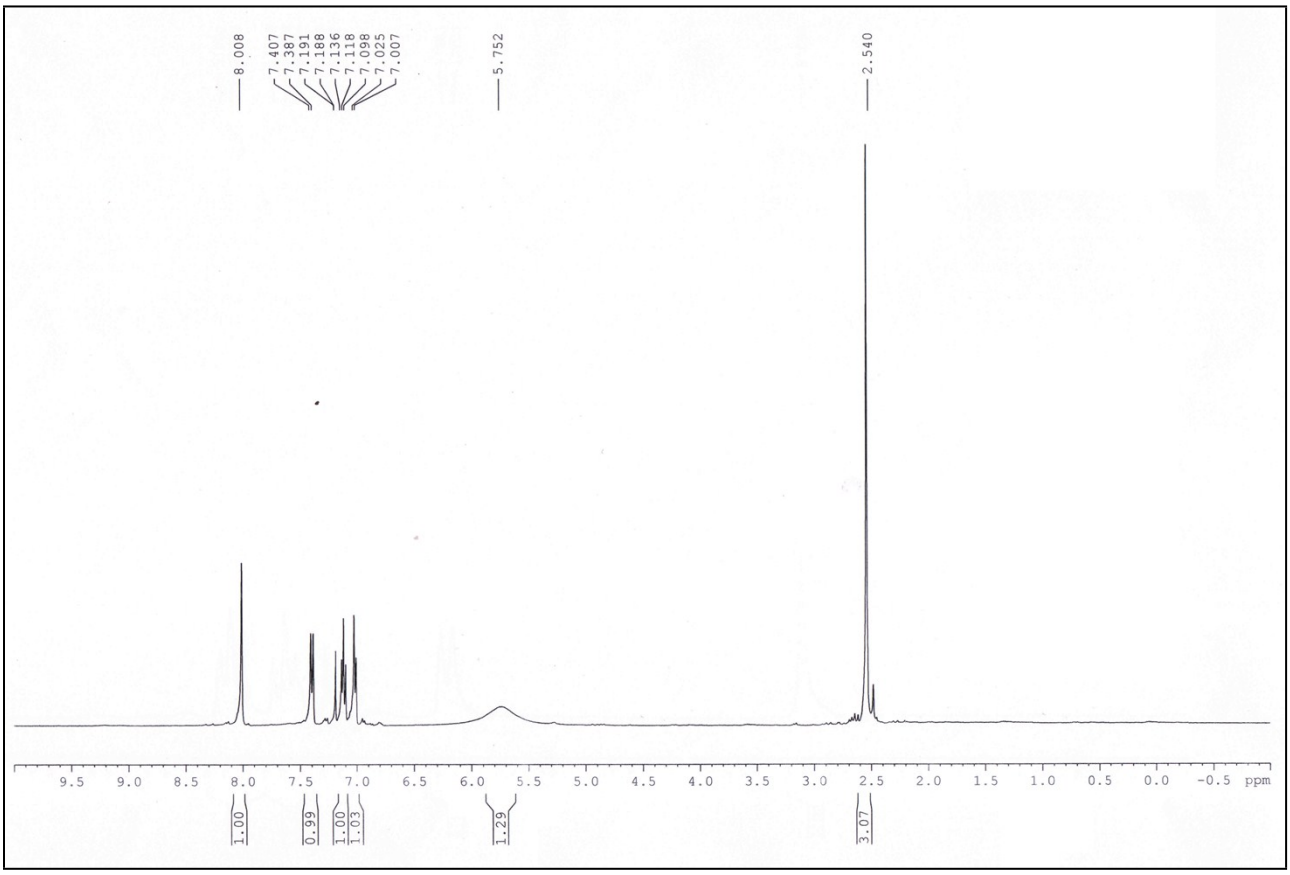
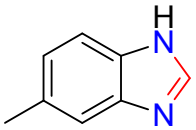


Figure S5: ^{1}H NMR spectra of 7-methyl-1H-benzo[d]imidazole (in $CDCl_3$).



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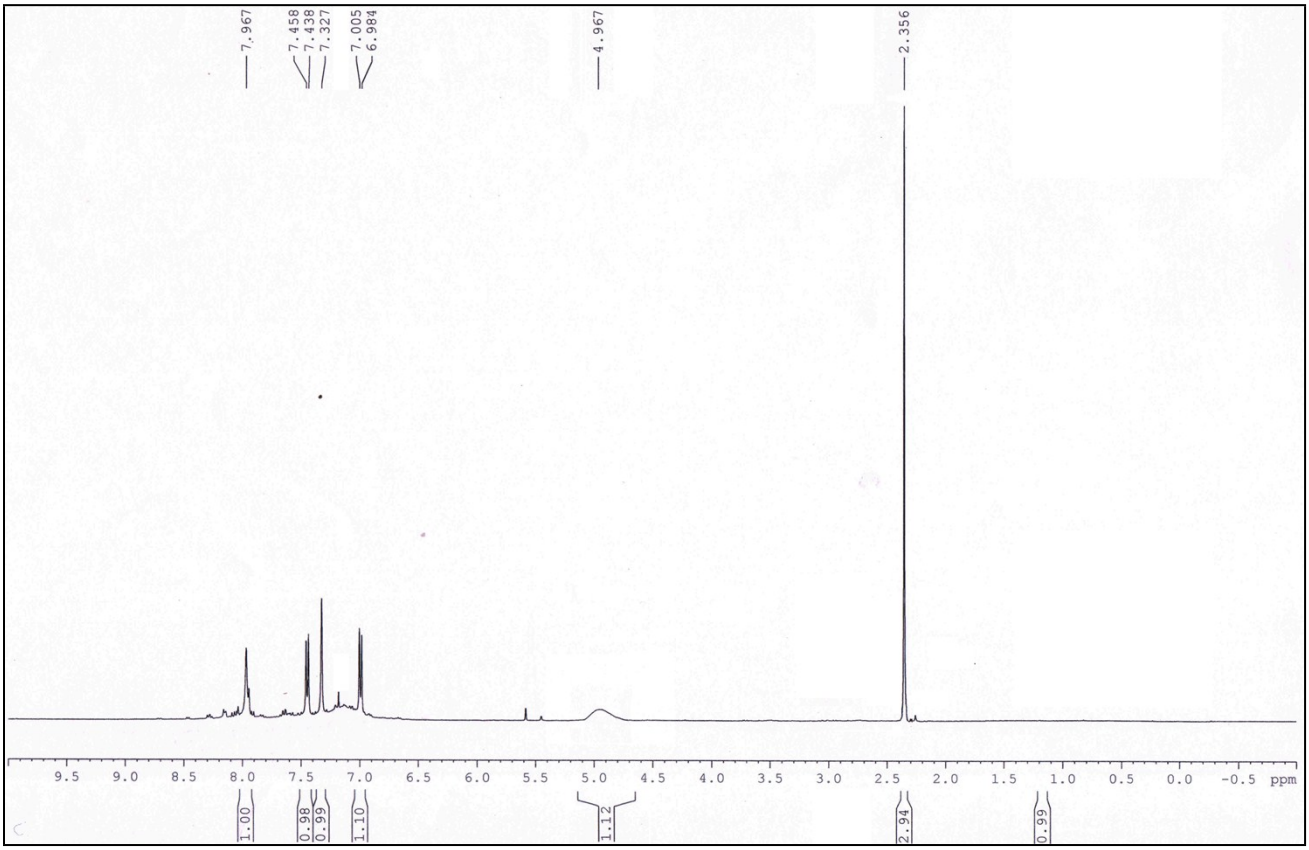
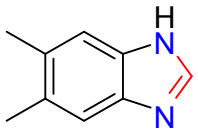


Figure S6: ^{1}H NMR spectra of 5-methyl-1H-benzo[d]imidazole (in $CDCl_3$).



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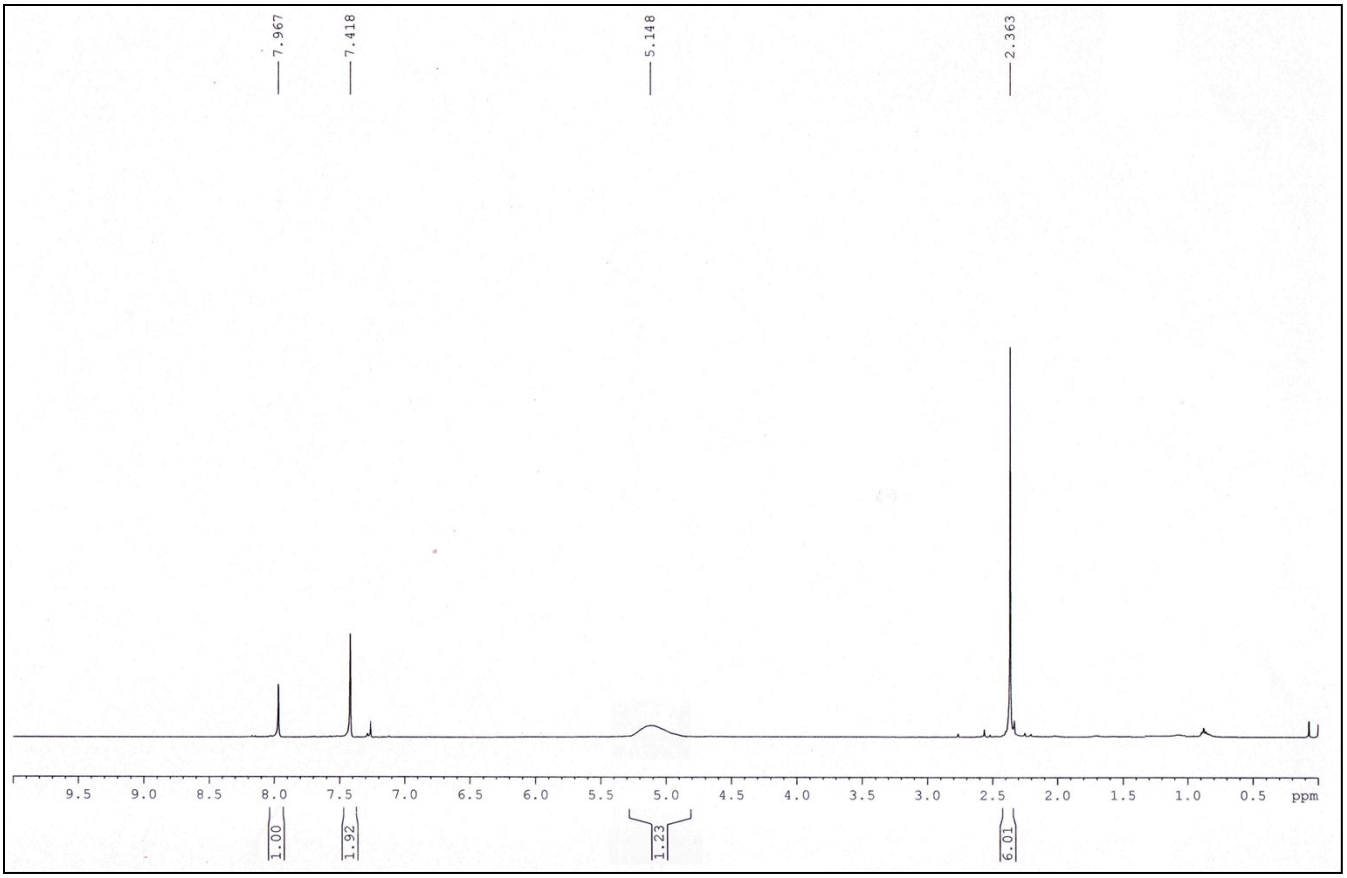
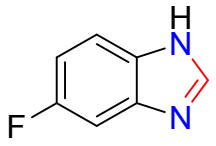


Figure S7: ^{1}H NMR spectra of 5,6-dimethyl-1H-benzo[d]imidazole (in $CDCl_3$).



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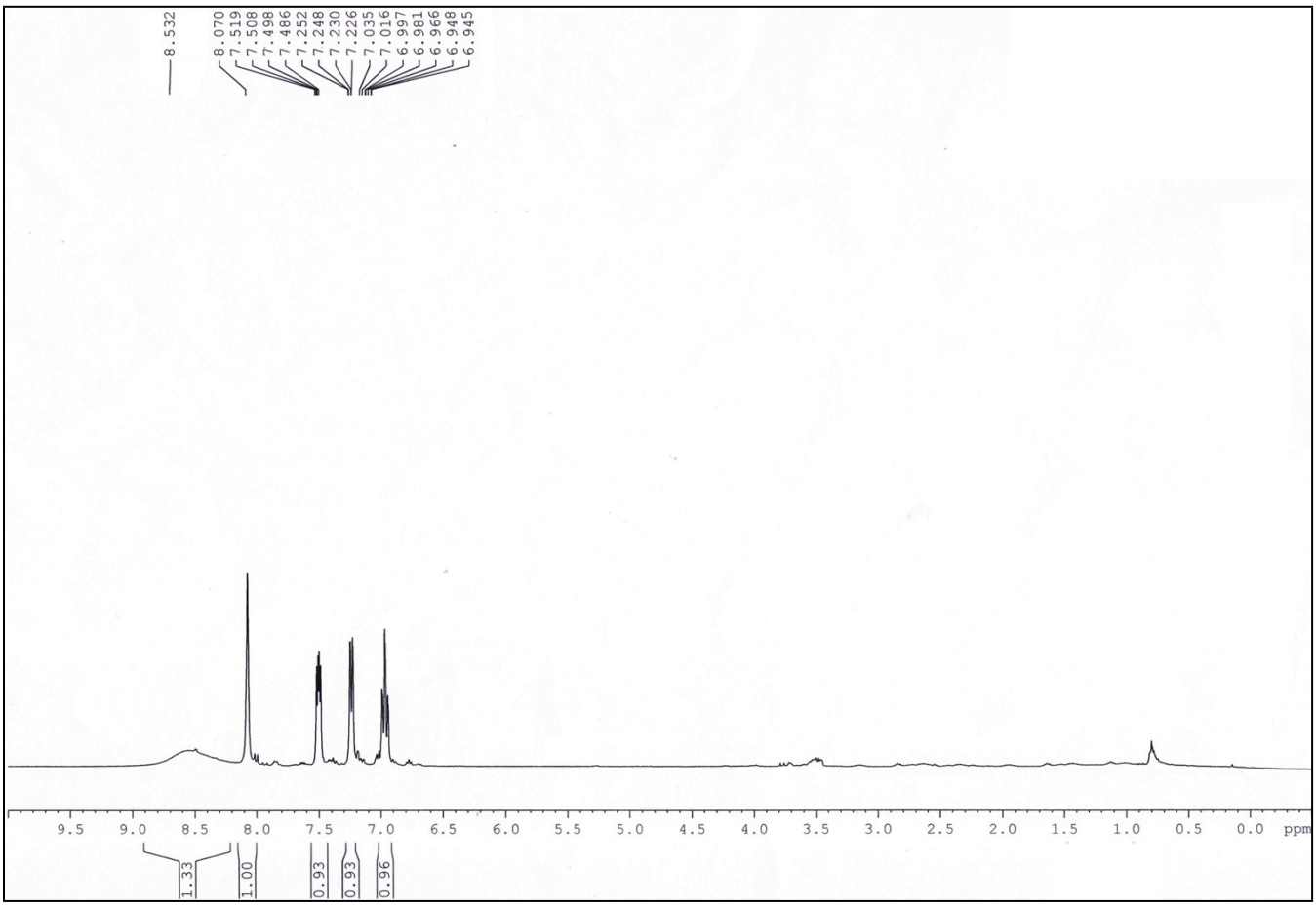
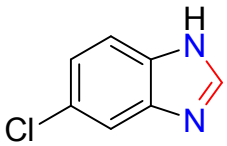


Figure S8: ^{1}H NMR spectra of 5-fluoro-1H-benzo[d]imidazole (in $CDCl_3$).



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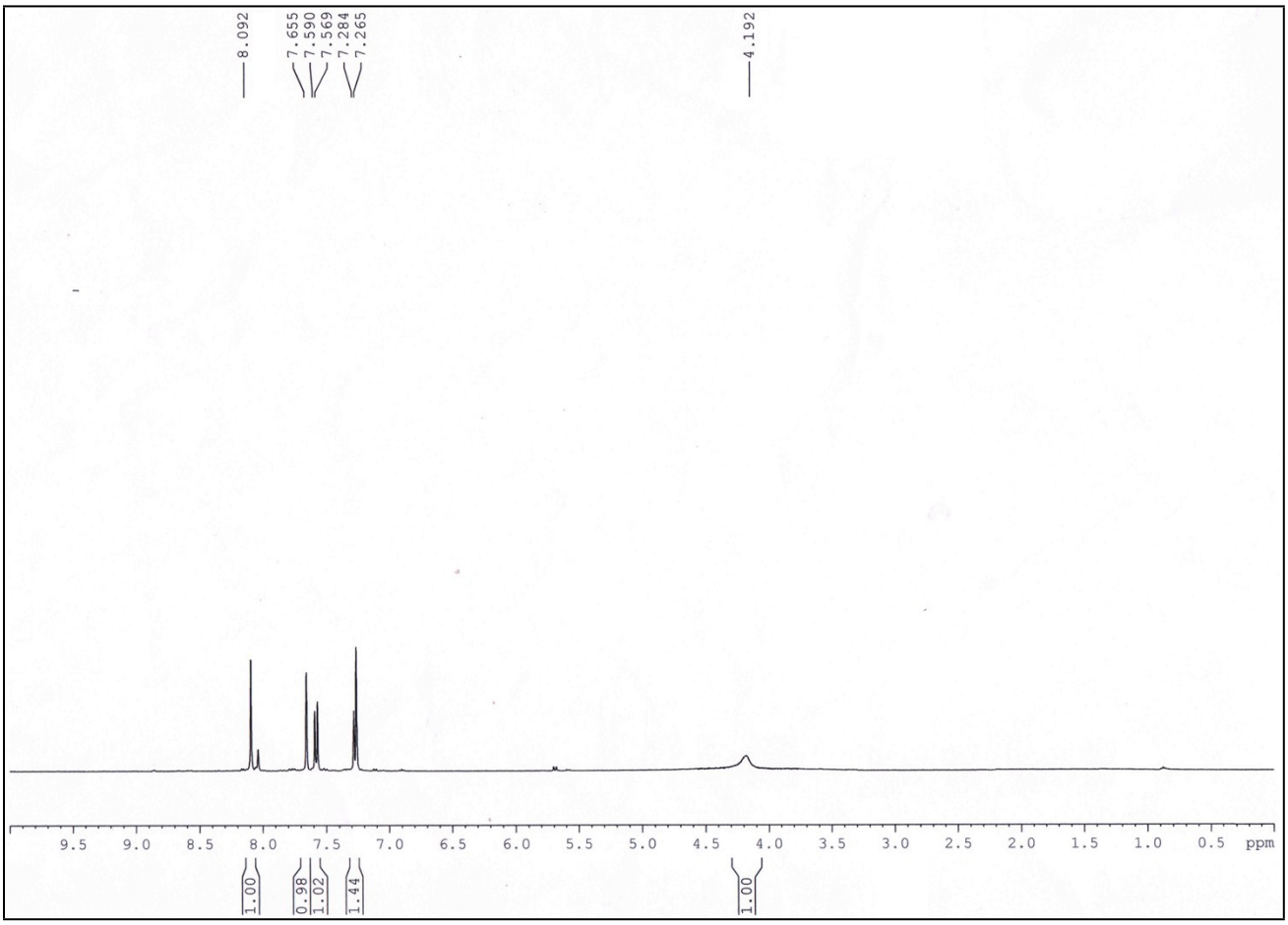


Figure S9: ^{1}H NMR spectra of 5-chloro-1H-benzo[d]imidazole (in $CDCl_3$).

2g

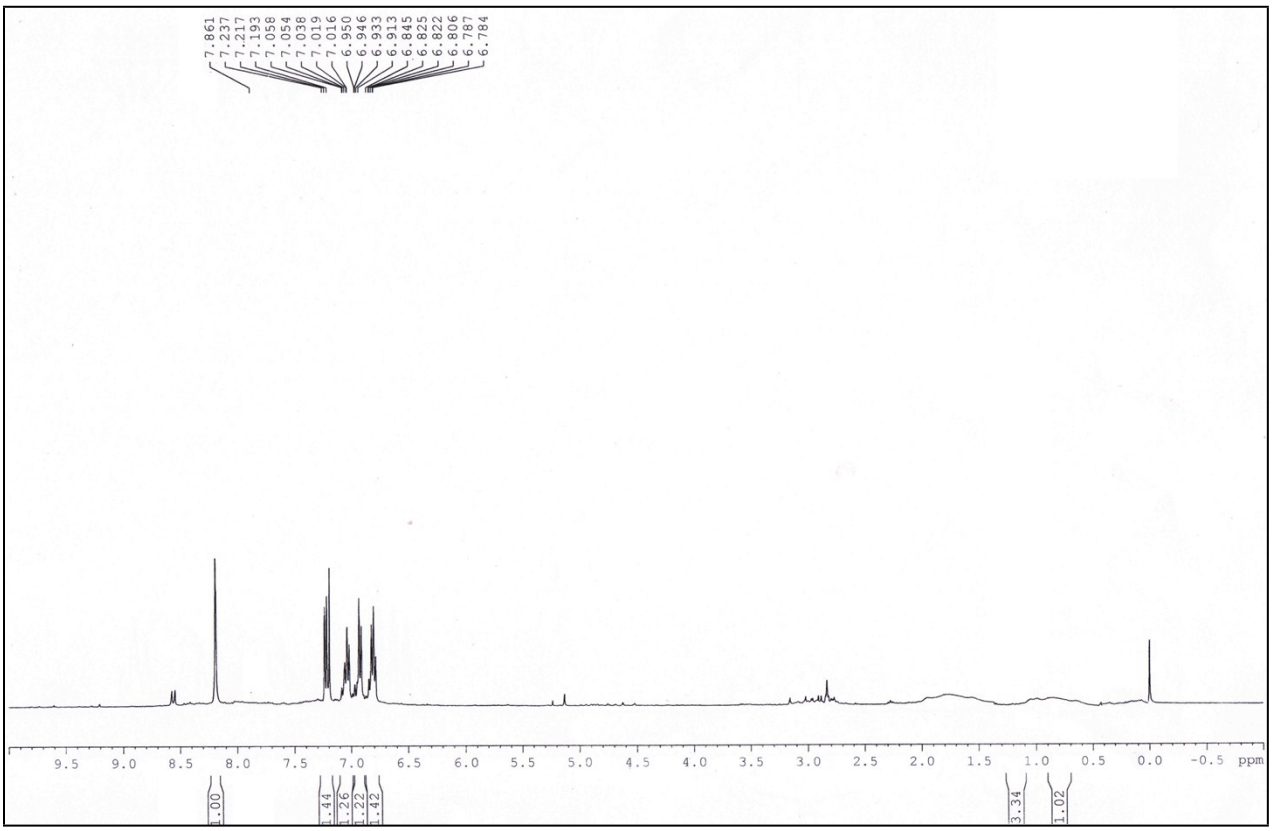
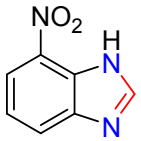


Figure S10: ^{1}H NMR spectra of benzo[d]oxazole (in $CDCl_3$).



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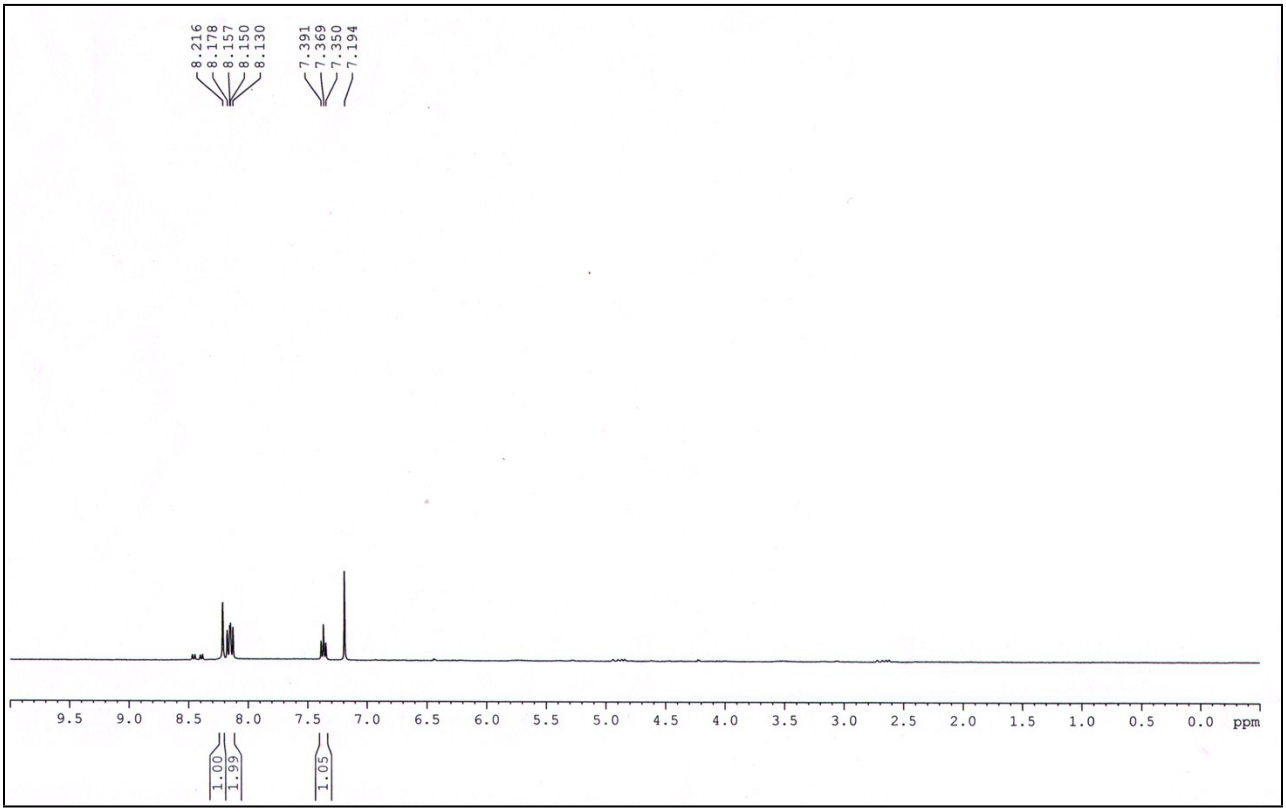
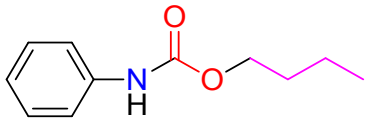


Figure S11: ^{1}H NMR spectra of 7-nitro-1H-benzo[d]imidazole (in $CDCl_3$).



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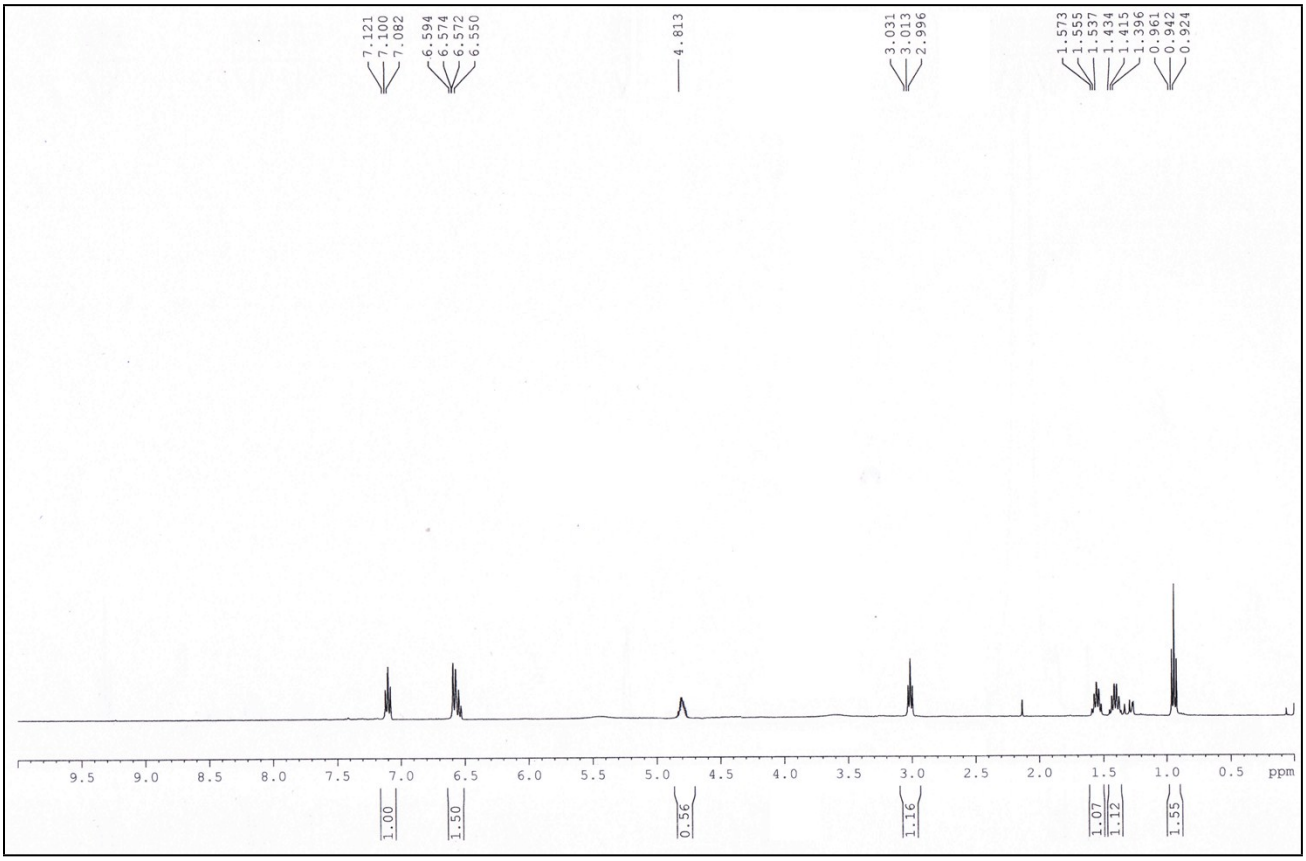
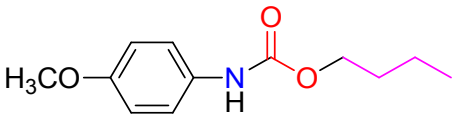


Figure S12: ^{1}H NMR spectra of butyl phenylcarbamate (in $CDCl_3$).



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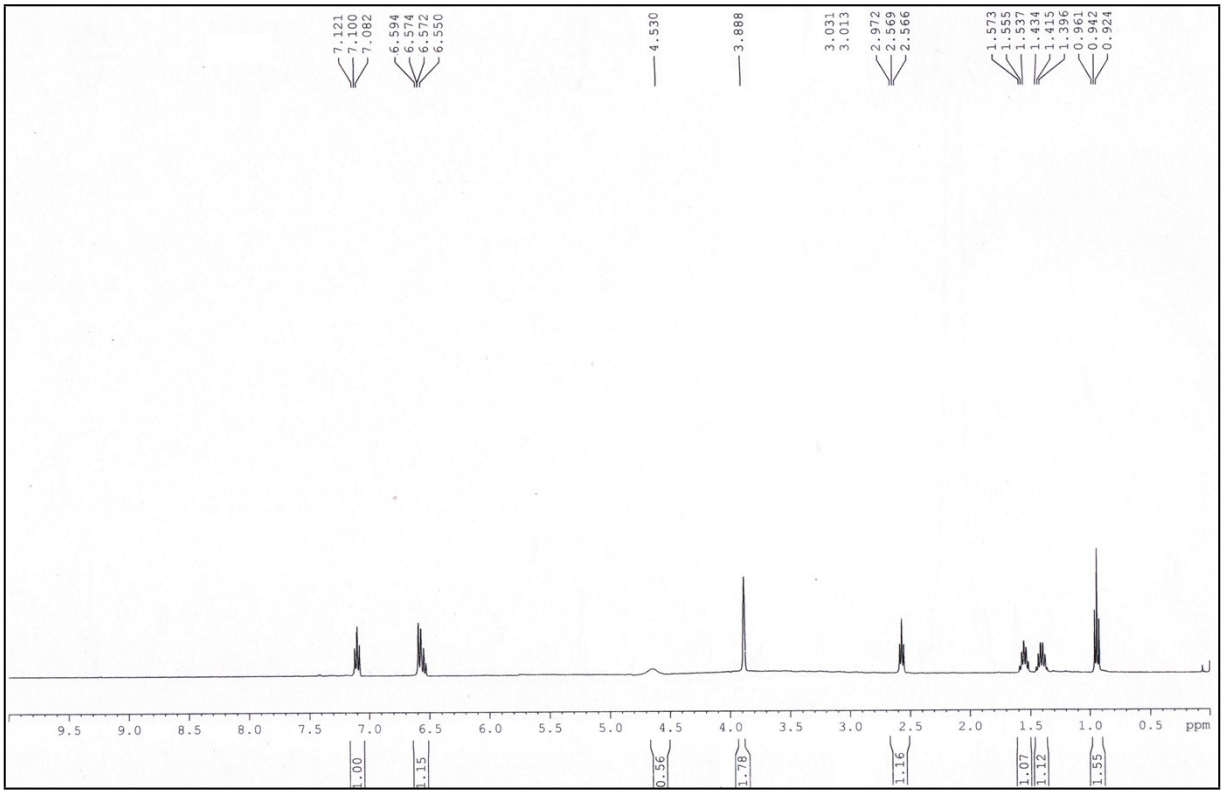
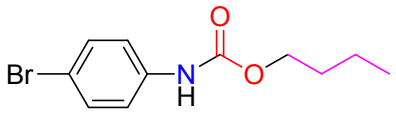


Figure S13: ^{1}H NMR spectra of butyl 4-methoxyphenylcarbamate (in $CDCl_3$).



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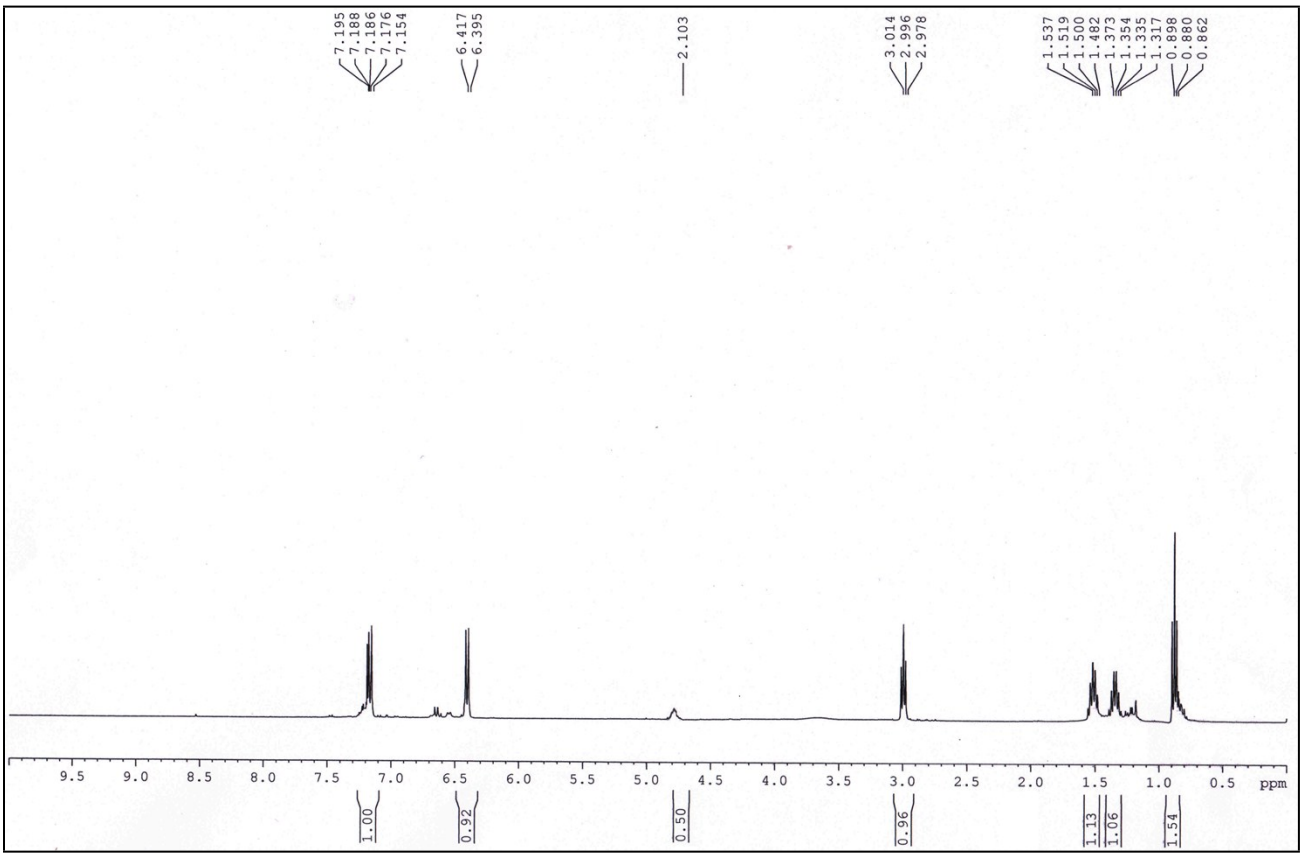
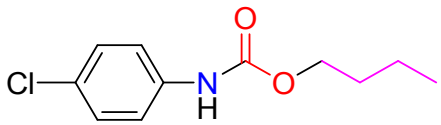


Figure S14: ^{1}H NMR spectra of butyl 4-bromophenylcarbamate (in $CDCl_3$).



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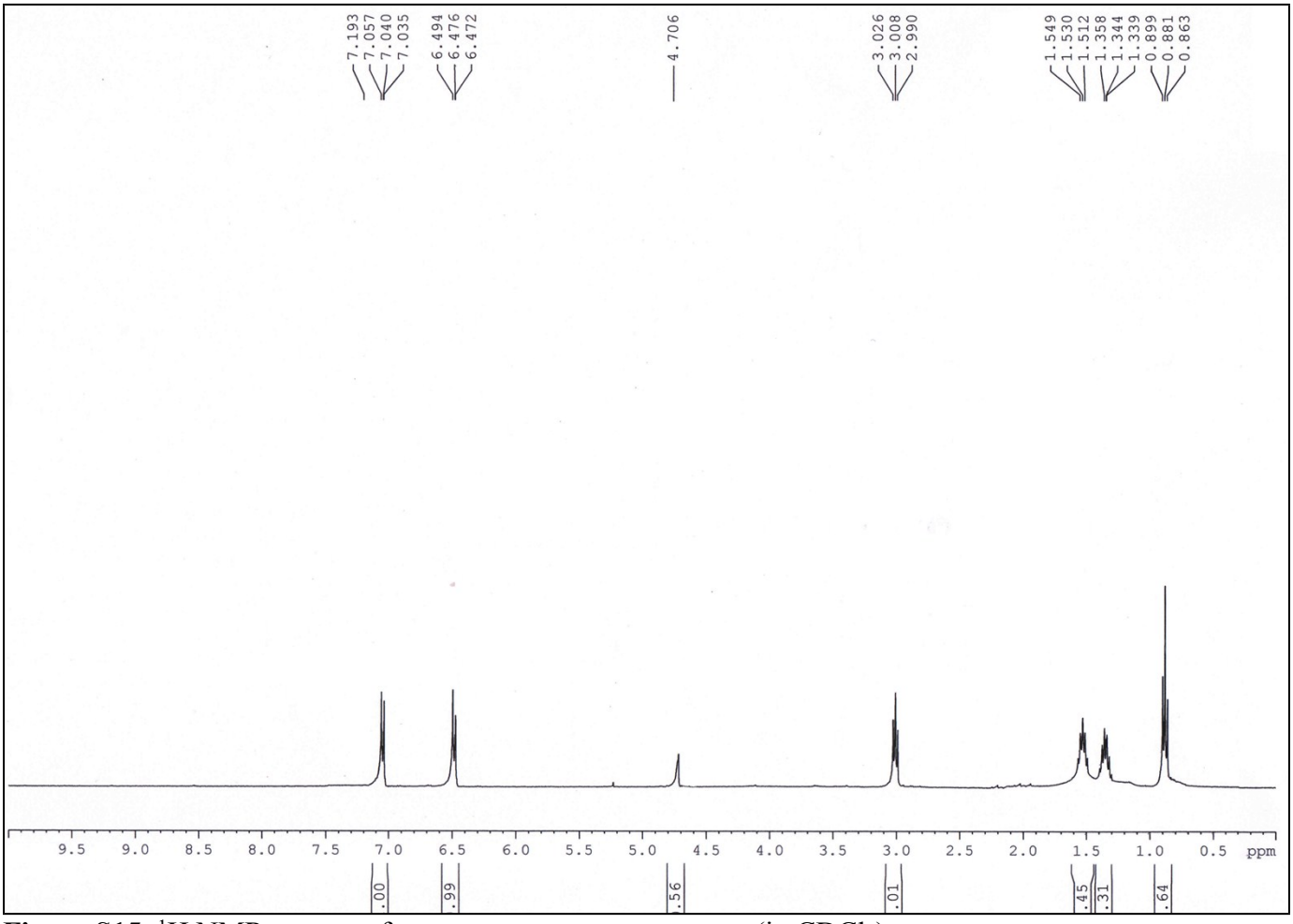
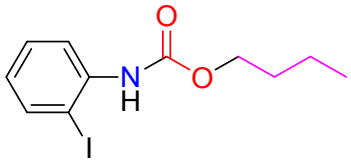


Figure S15: ^{1}H NMR spectra of butyl 4-chlorophenylcarbamate (in $CDCl_3$).



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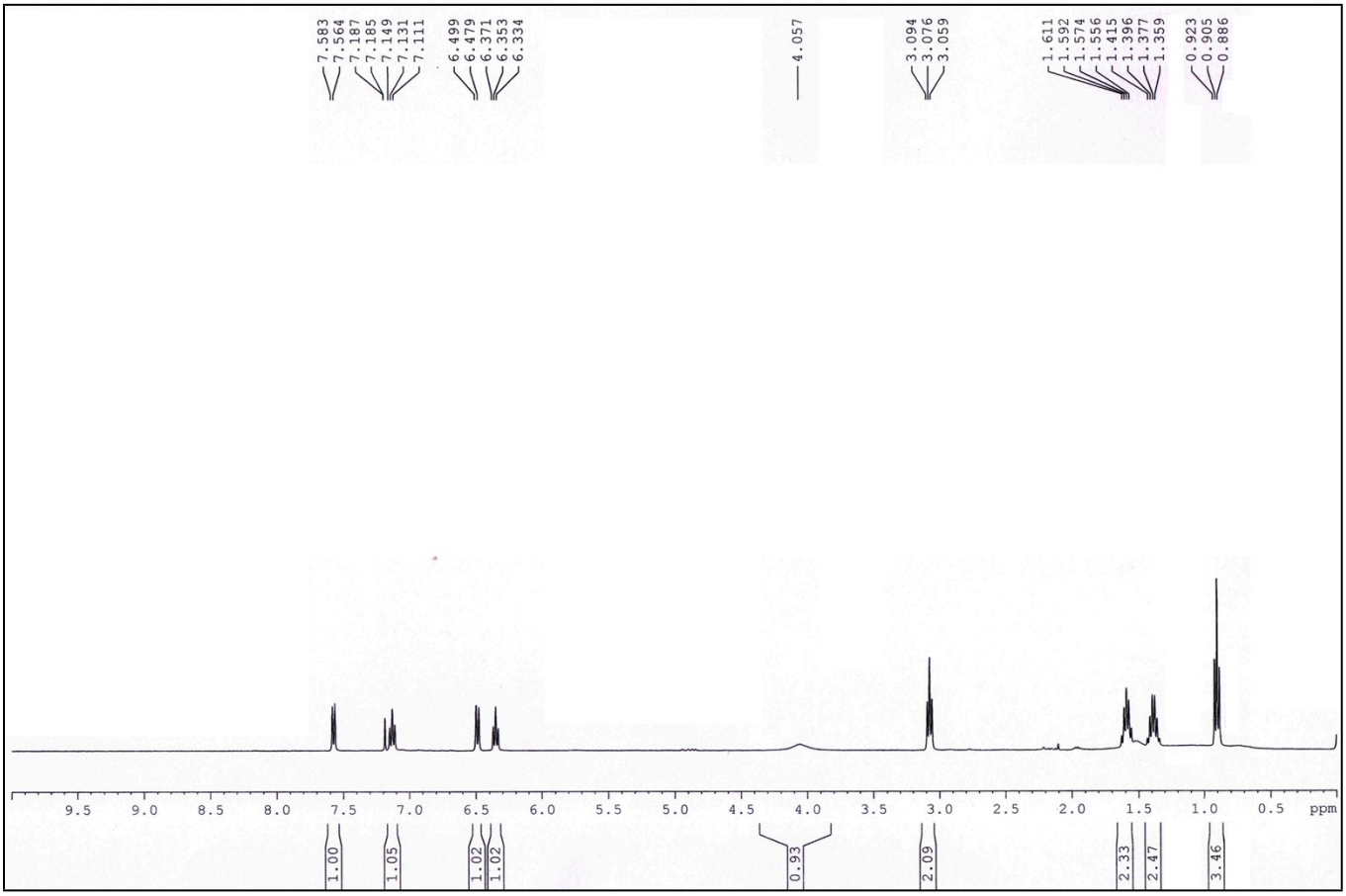
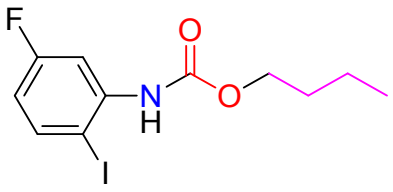


Figure S16: ^{1}H NMR spectra of butyl 2-iodophenylcarbamate (in $CDCl_3$).



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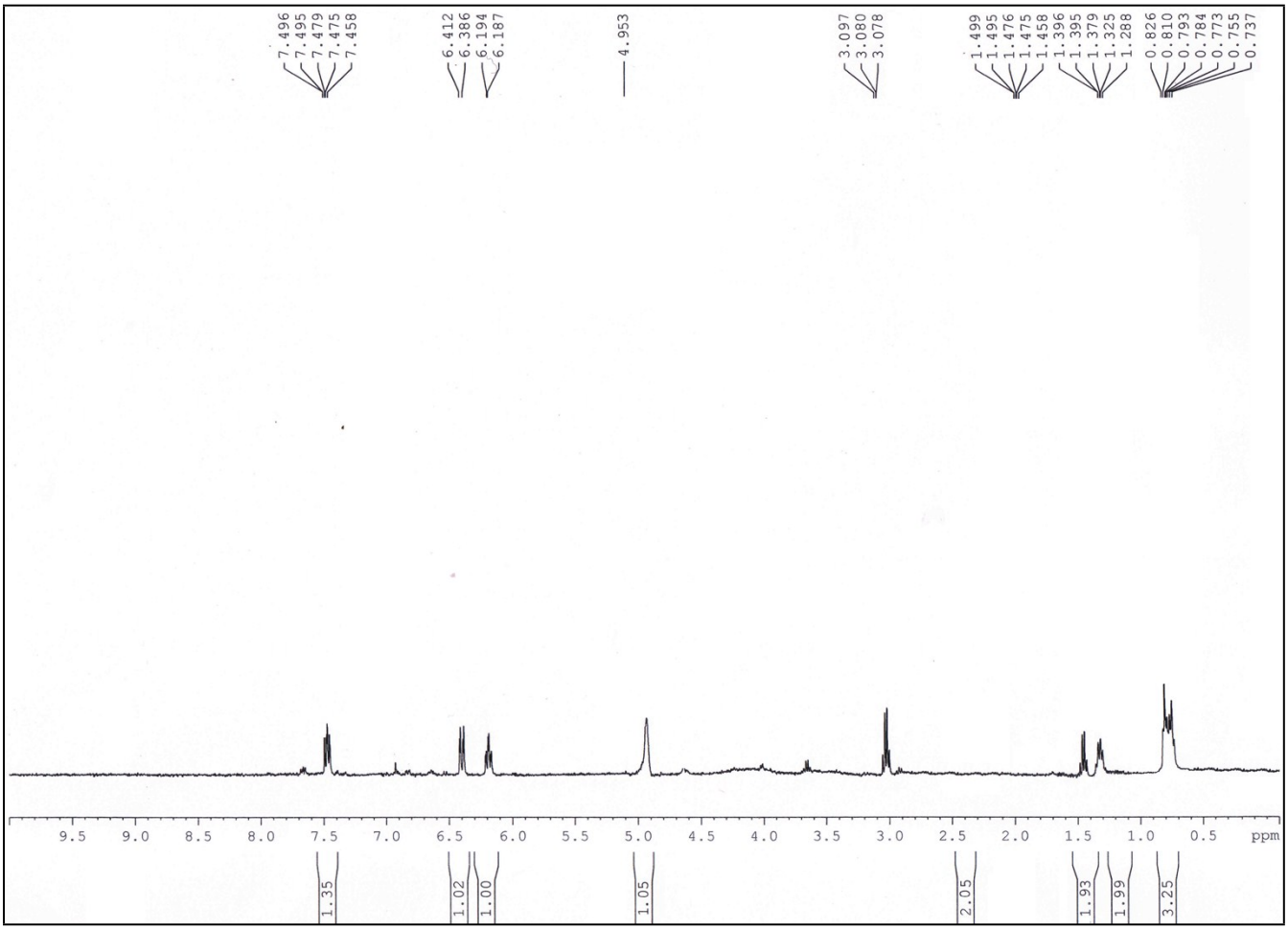
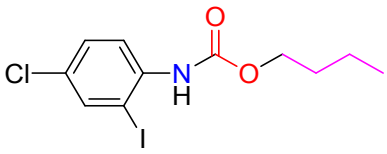


Figure S17: ^{1}H NMR spectra of butyl 5-fluoro-2-iodophenylcarbamate (in $CDCl_3$).



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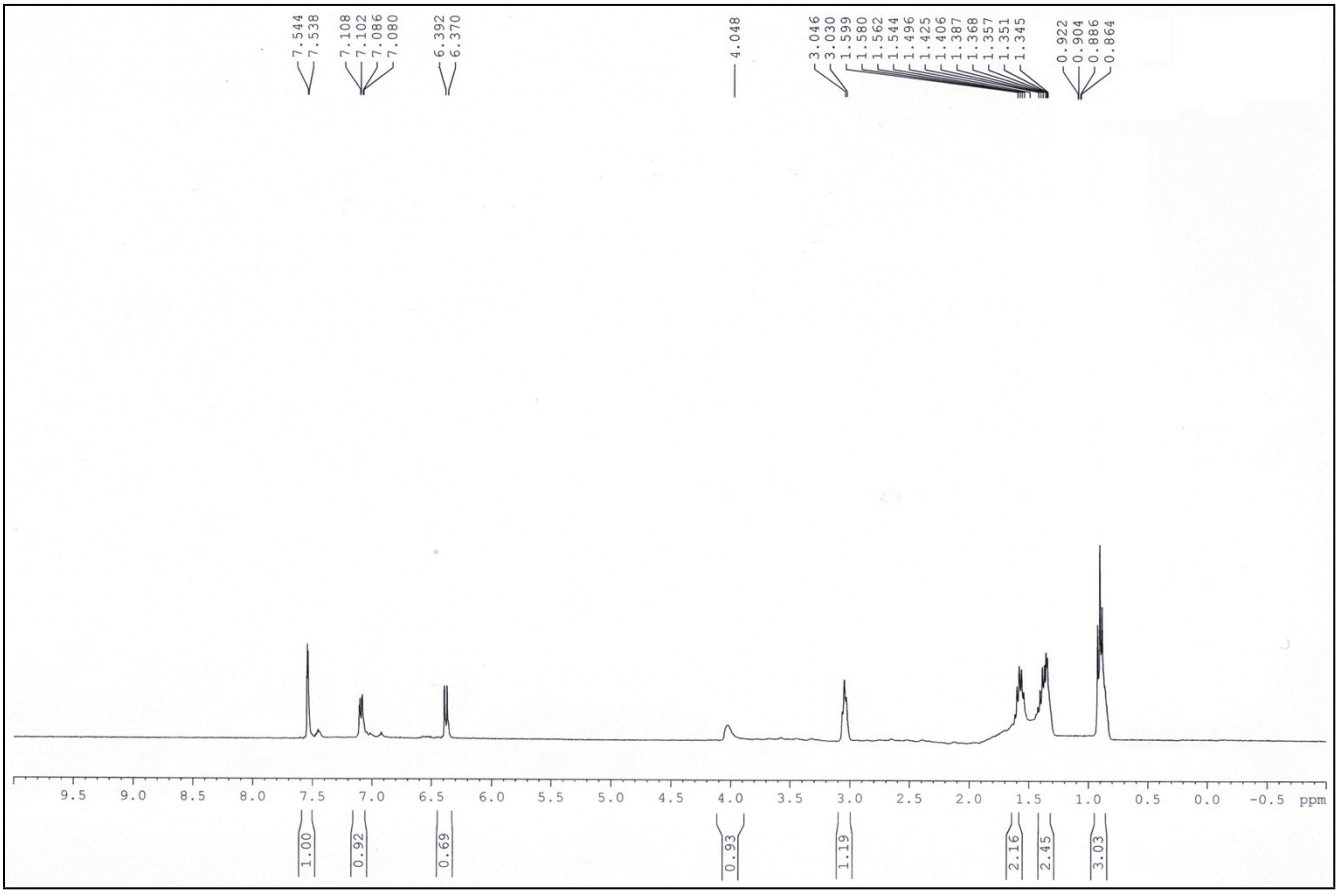
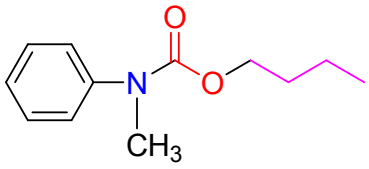


Figure S18: ^{1}H NMR spectra of butyl 4-chloro-2-iodophenylcarbamate (in $CDCl_3$).



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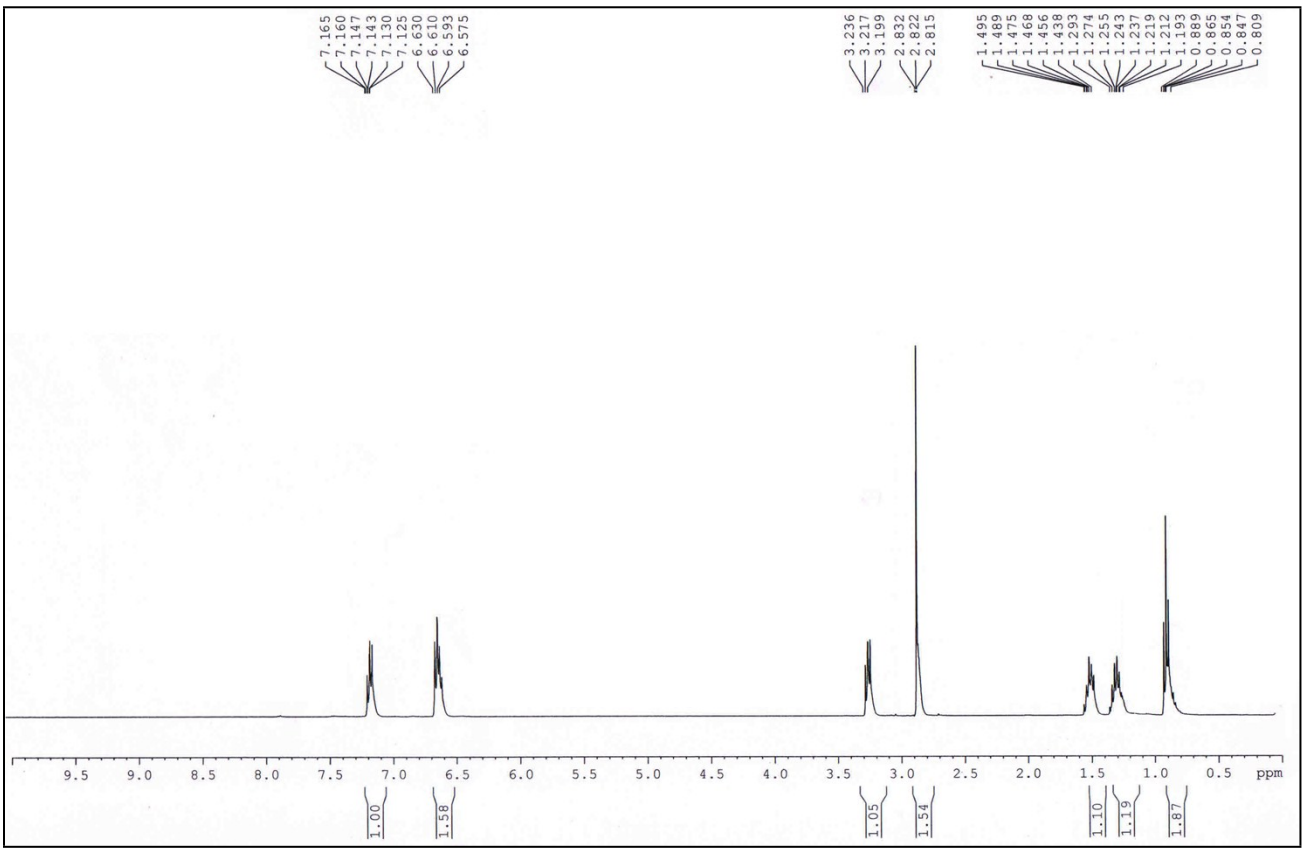

Figure S19: ^{1}H NMR spectra of butyl methyl(phenyl)carbamate (in $CDCl_3$).

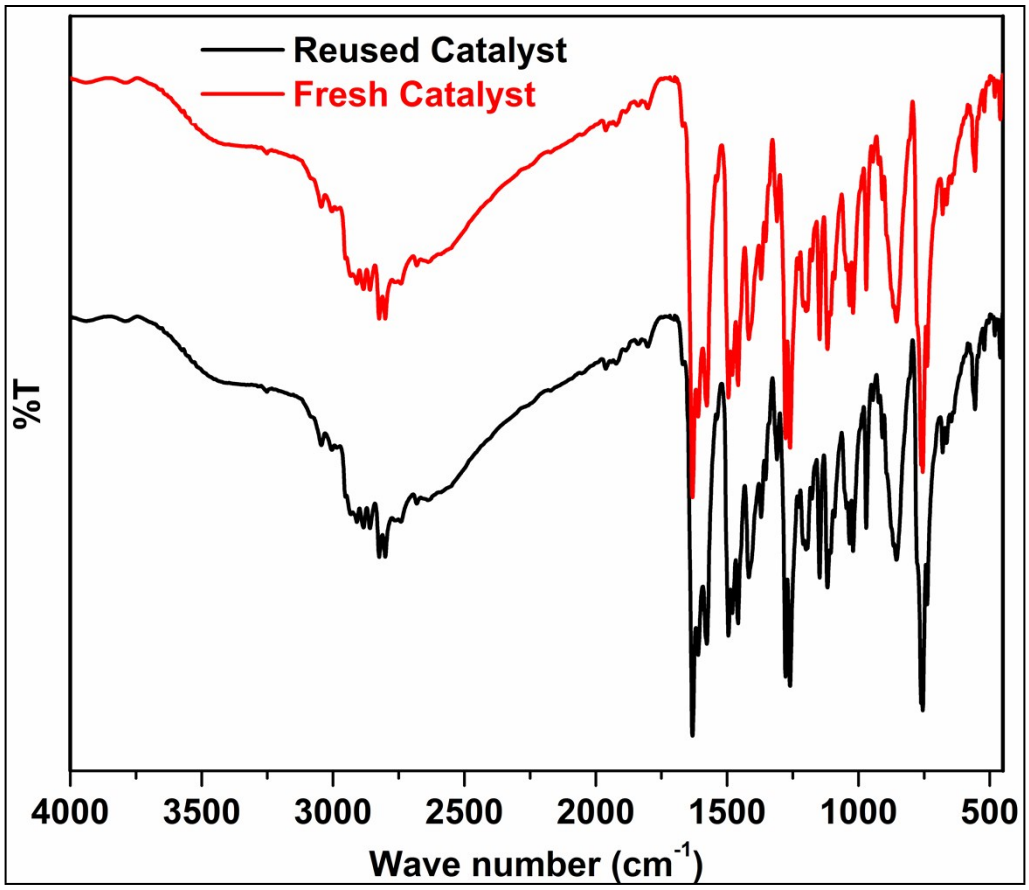

Figure S20: IR spectra of fresh and reused catalyst.

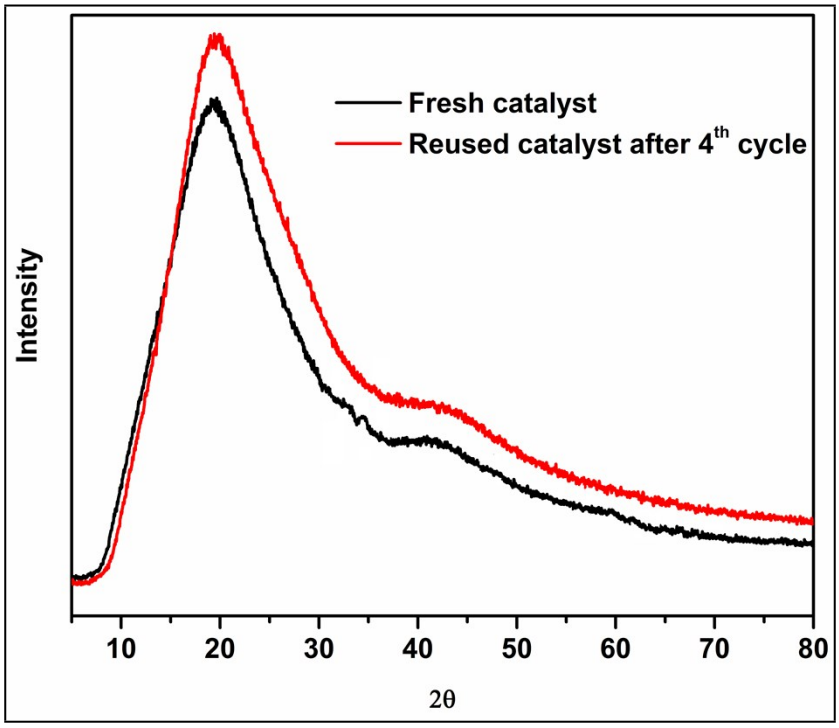

Figure S21: Powder XRD spectra of fresh and reused catalyst.