

Supporting Information

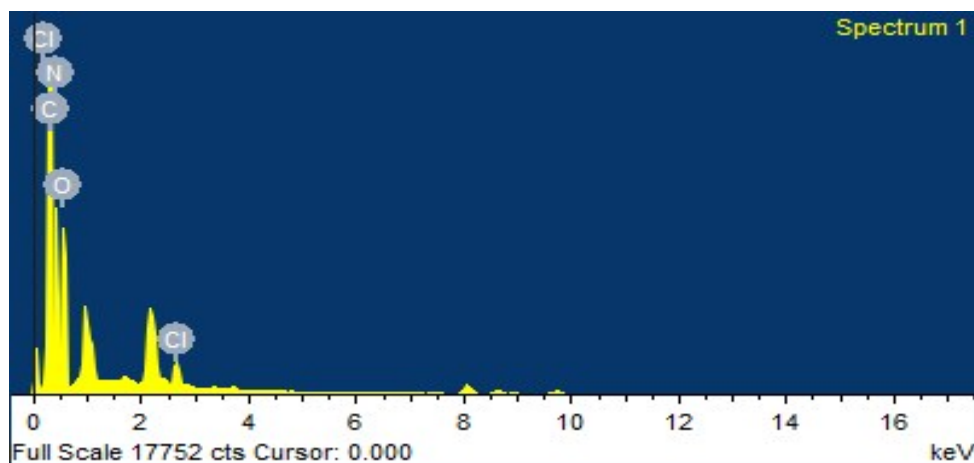
Nitrogen rich polymer as organo-catalyst for cycloaddition of CO₂ to epoxides and its application for the synthesis of polyurethane

Shailesh Verma,^{a,b} Gaurav Kumar,^{a,b} Amamudin Ansari,^{a,b} Rukhsana I. Kureshy,^{*a,b} Noor-ul H. Khan,^{a,b}

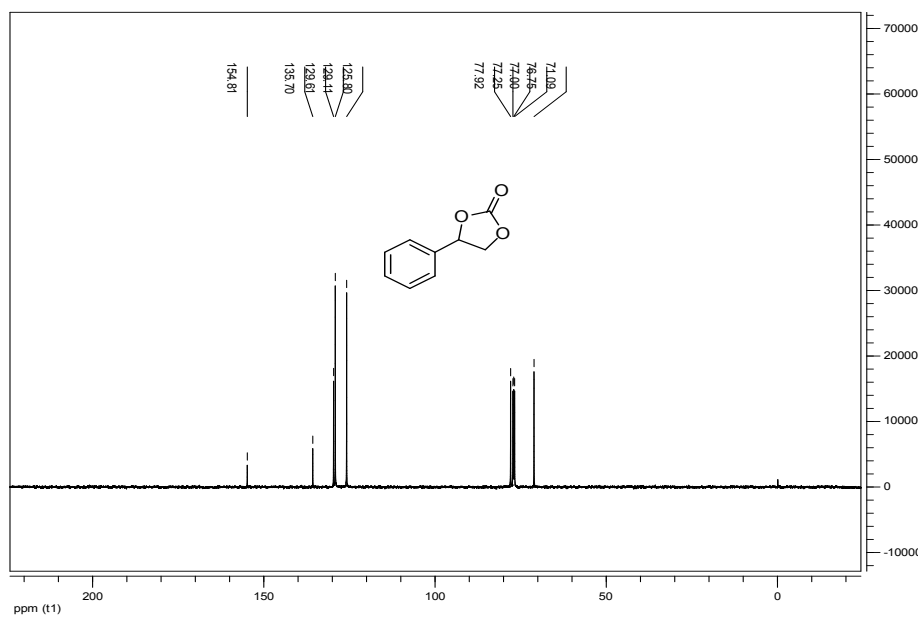
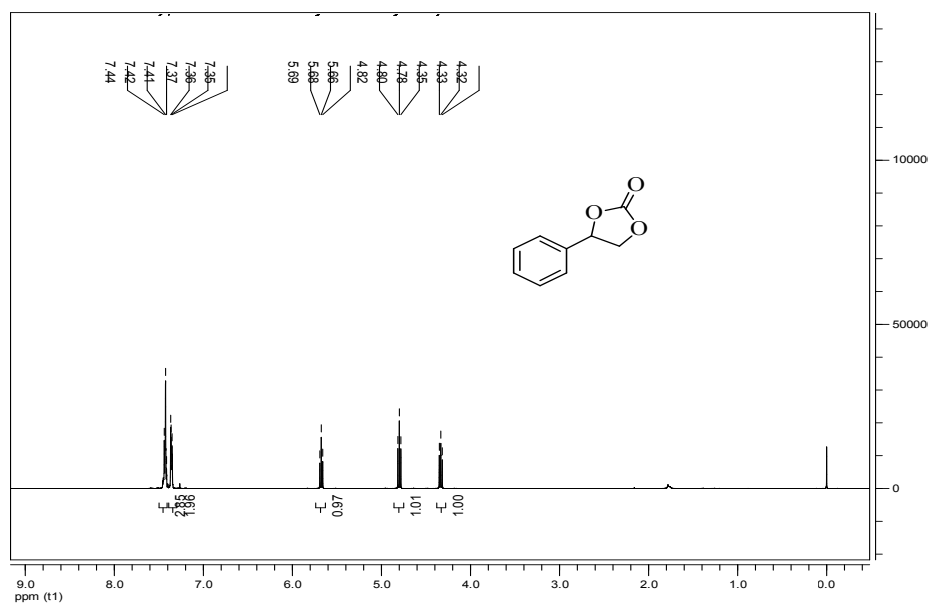
Contents

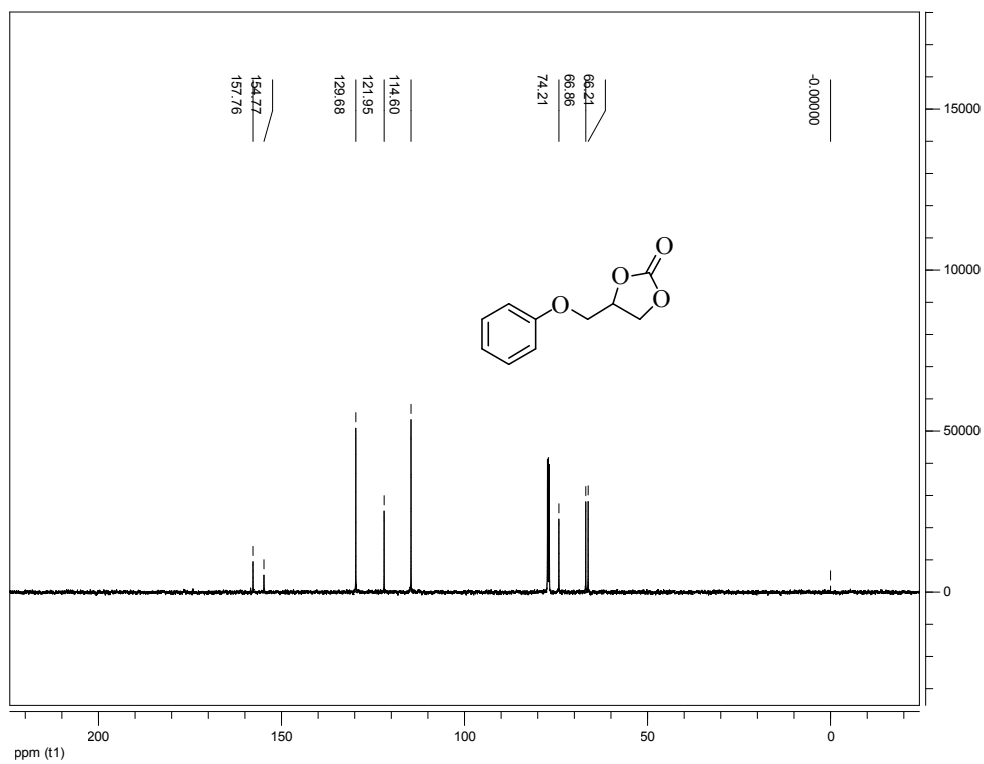
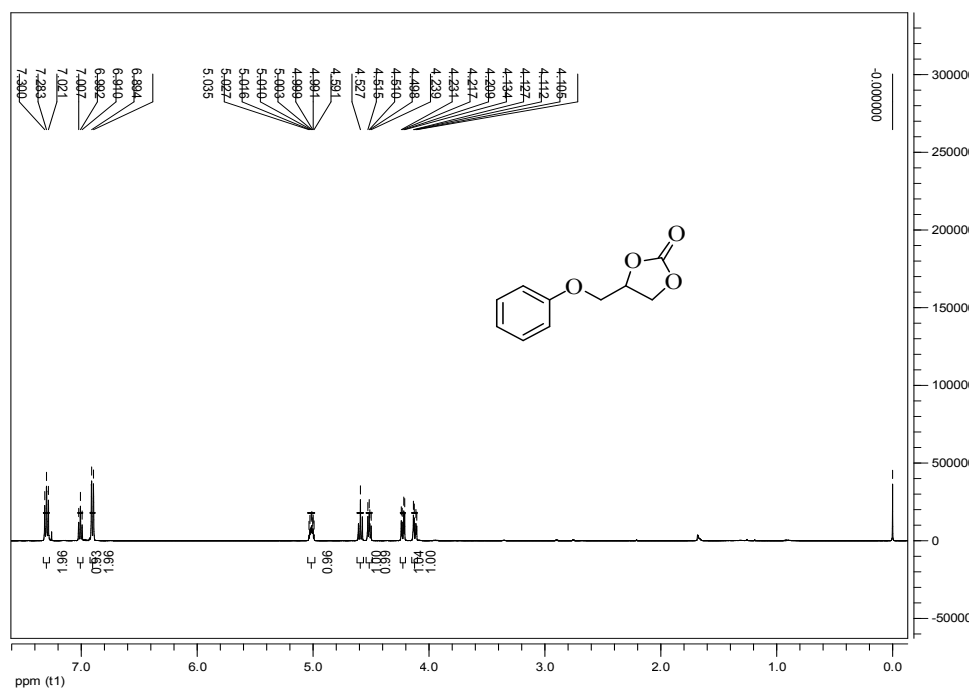
Experimental	Page No
1. EDX Spectra of CUP catalyst	0
2. ¹ H / ¹³ C NMR spectrum of the product & polyurethanes	1
3. GPC result of polyurethane	14
4 LCMS spectra of product	15

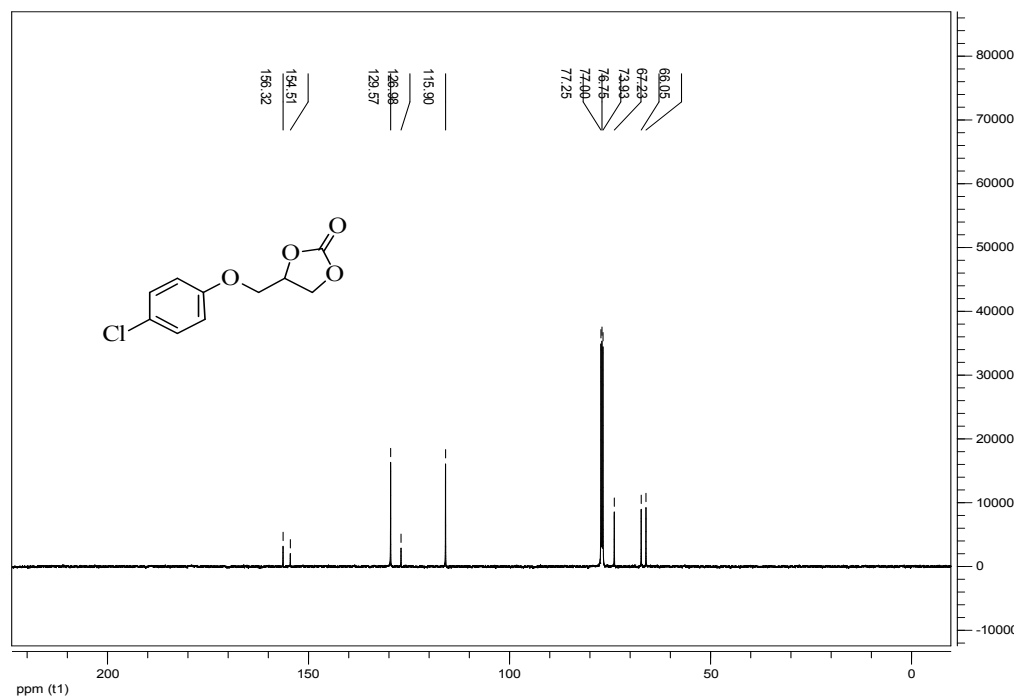
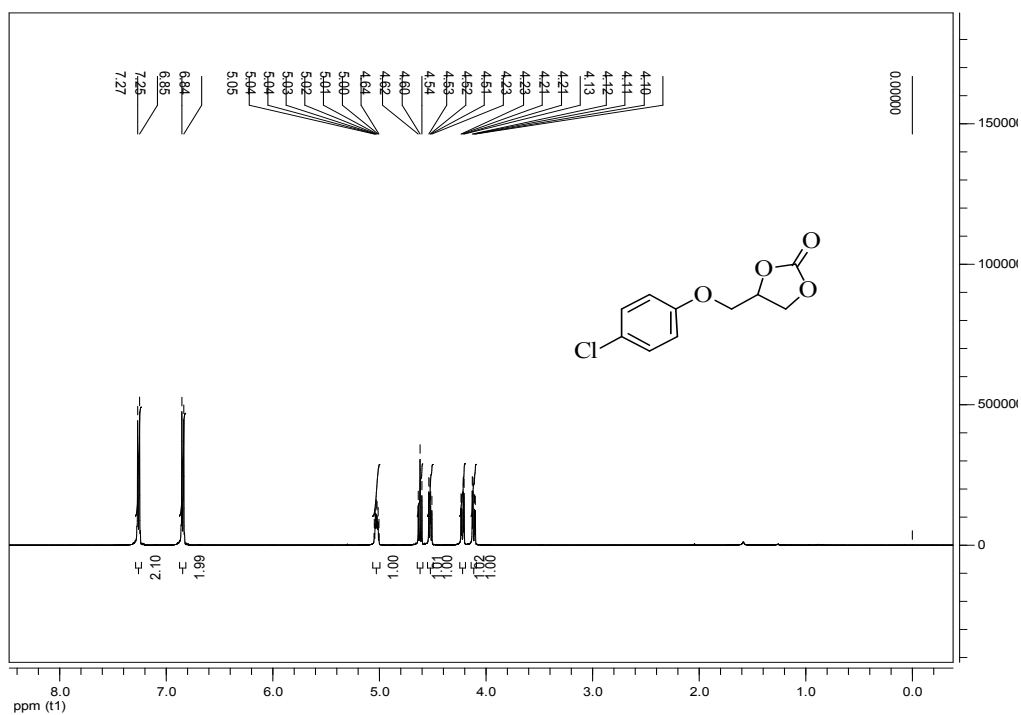
EDX Spectra of CUP catalyst

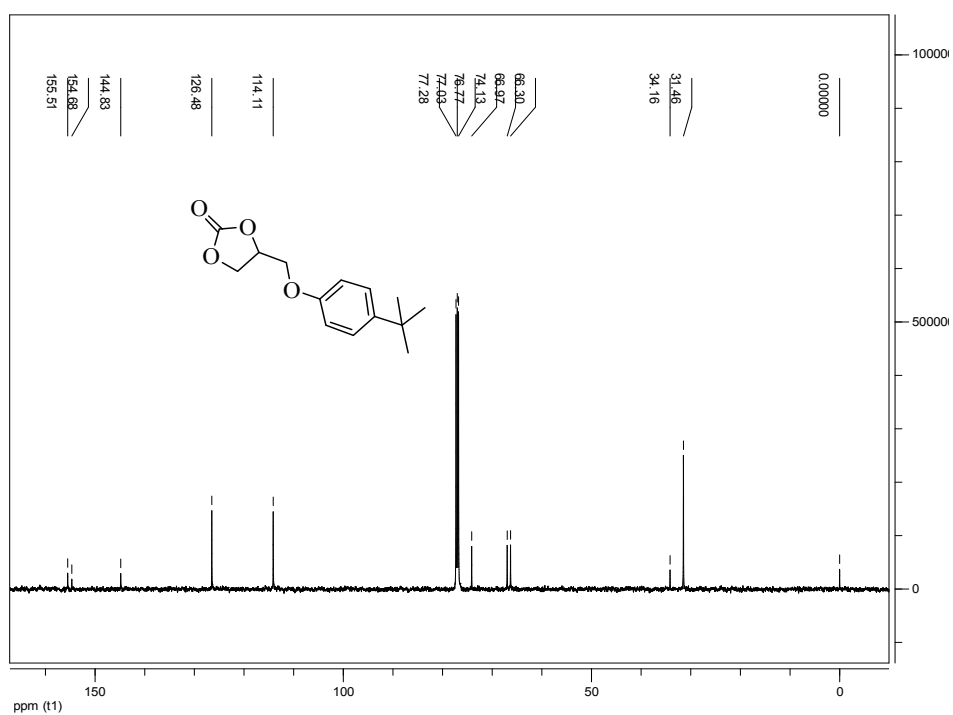
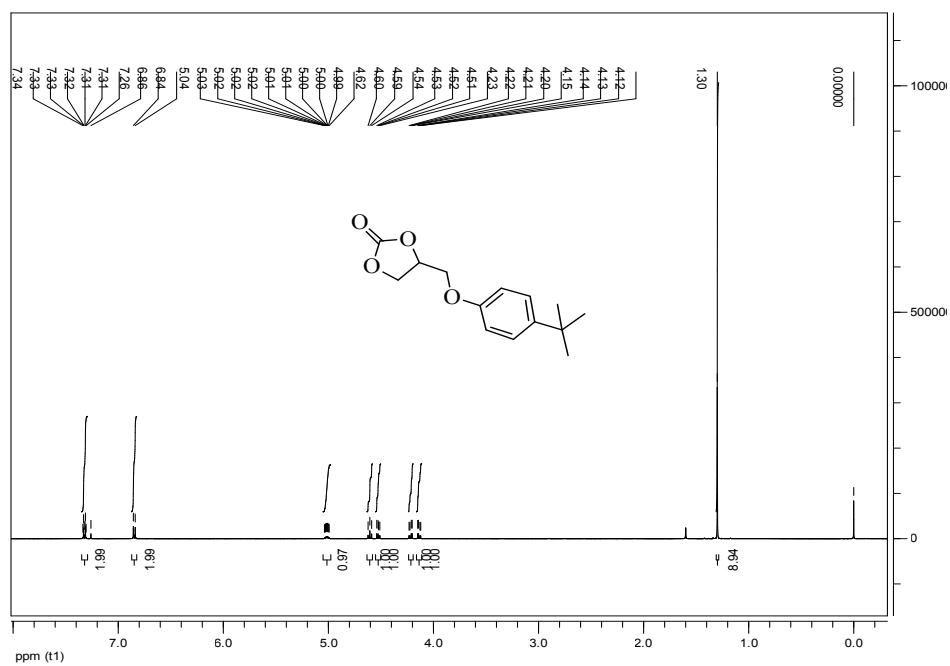


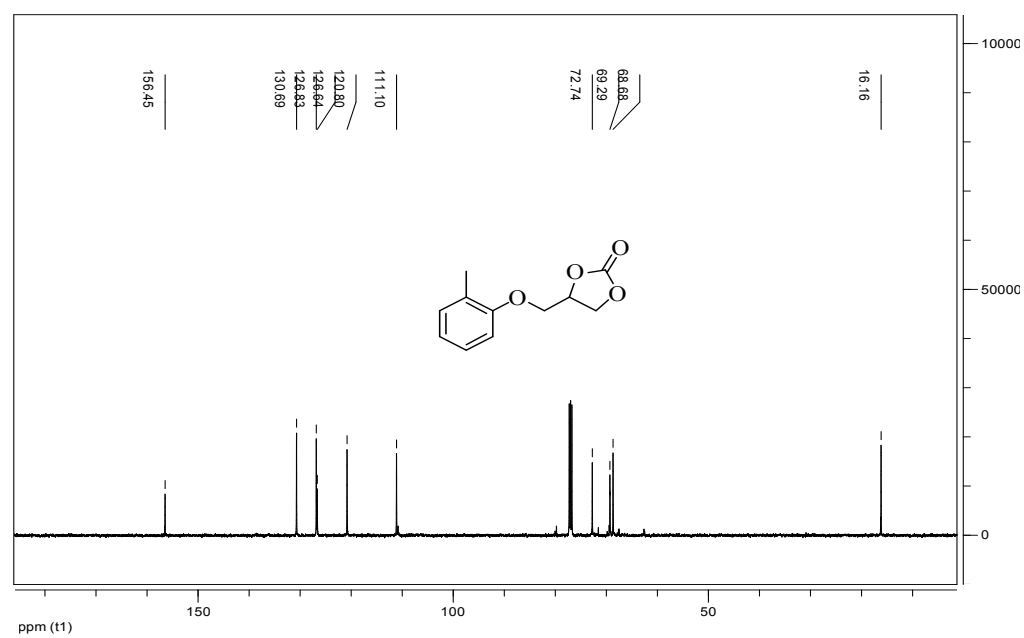
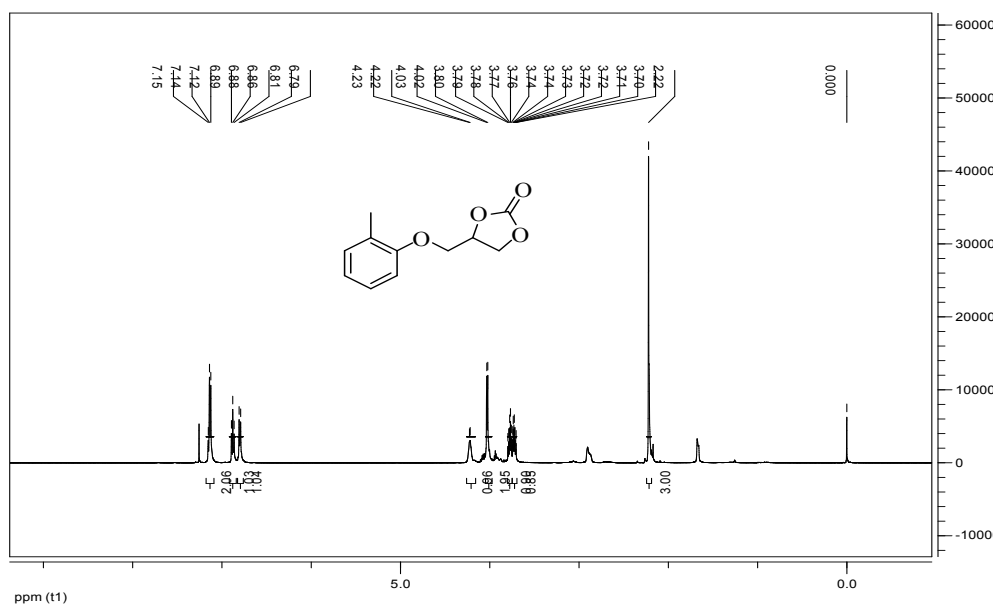
¹H NMR, ¹³C NMR spectra of the product

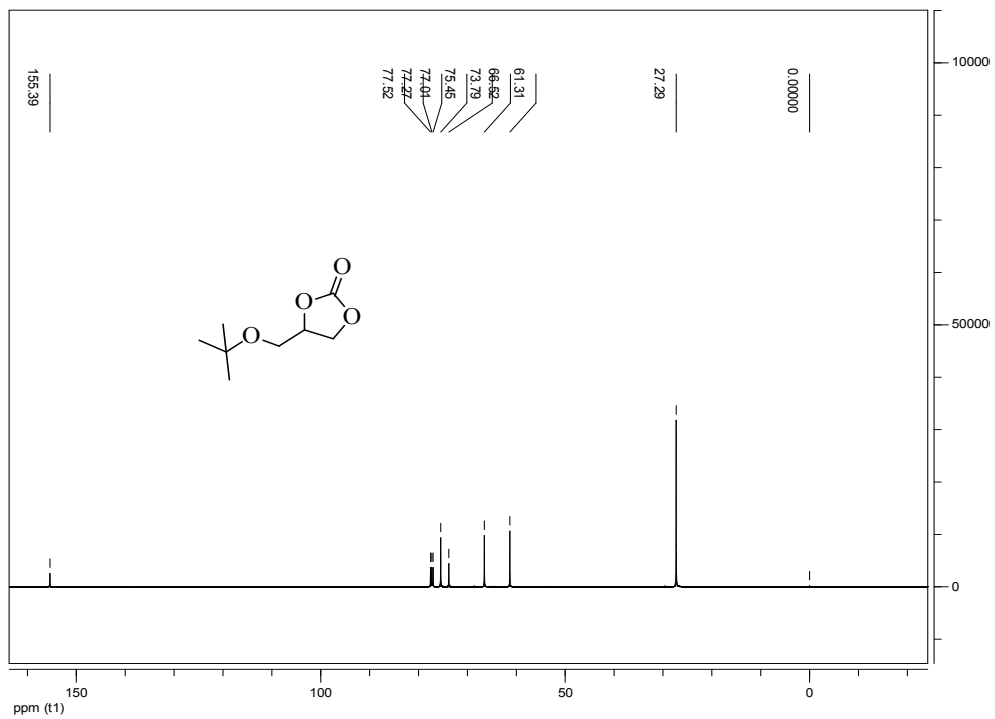
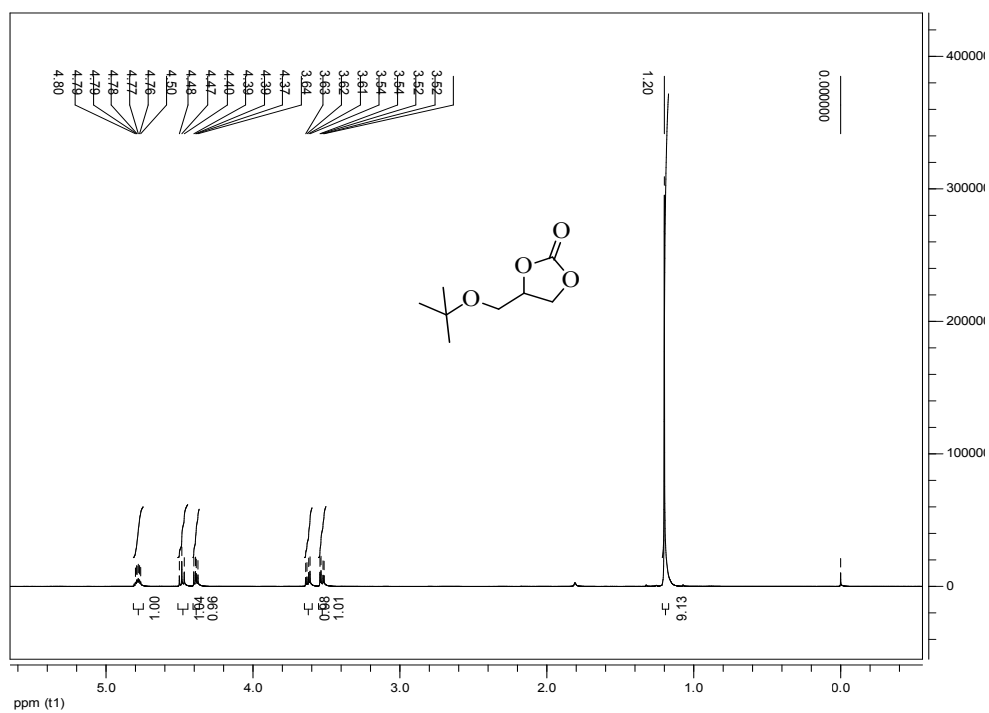


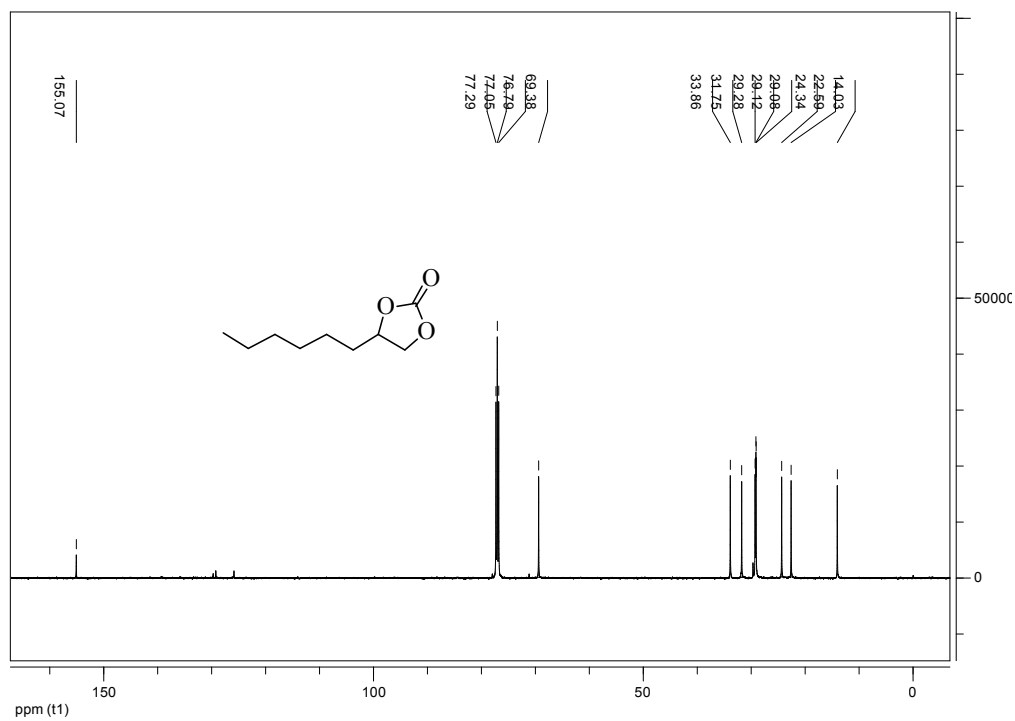
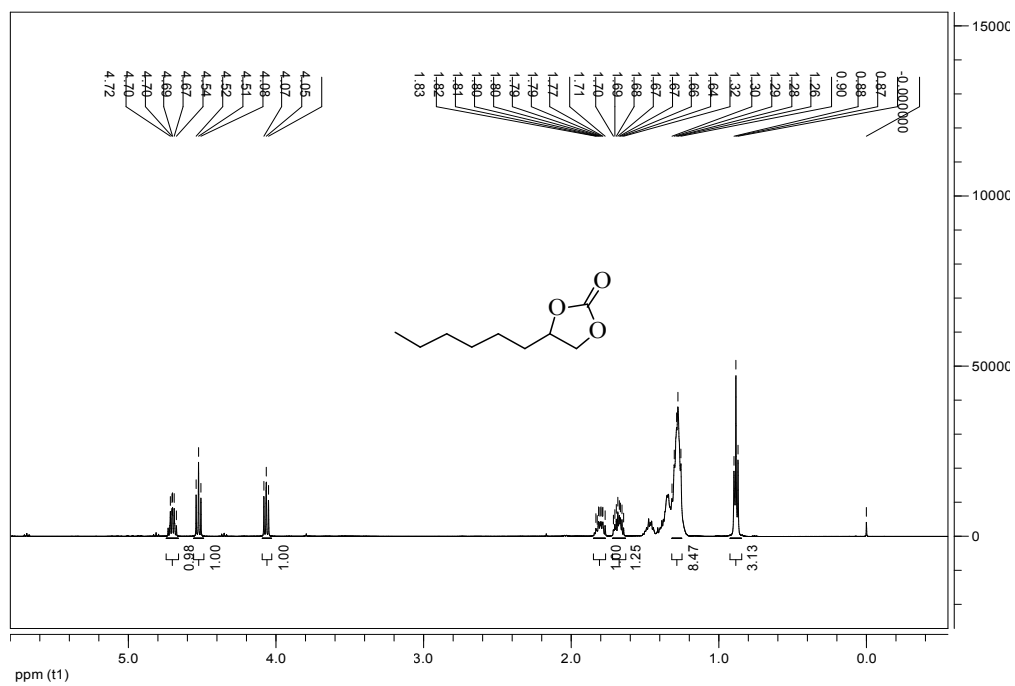


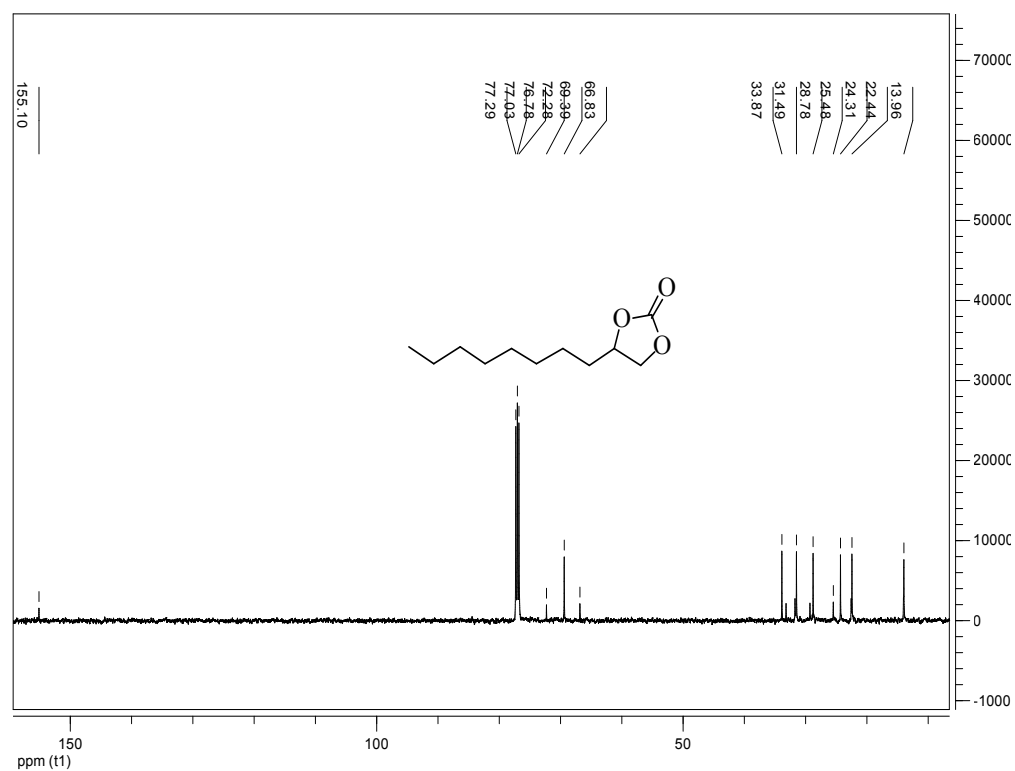
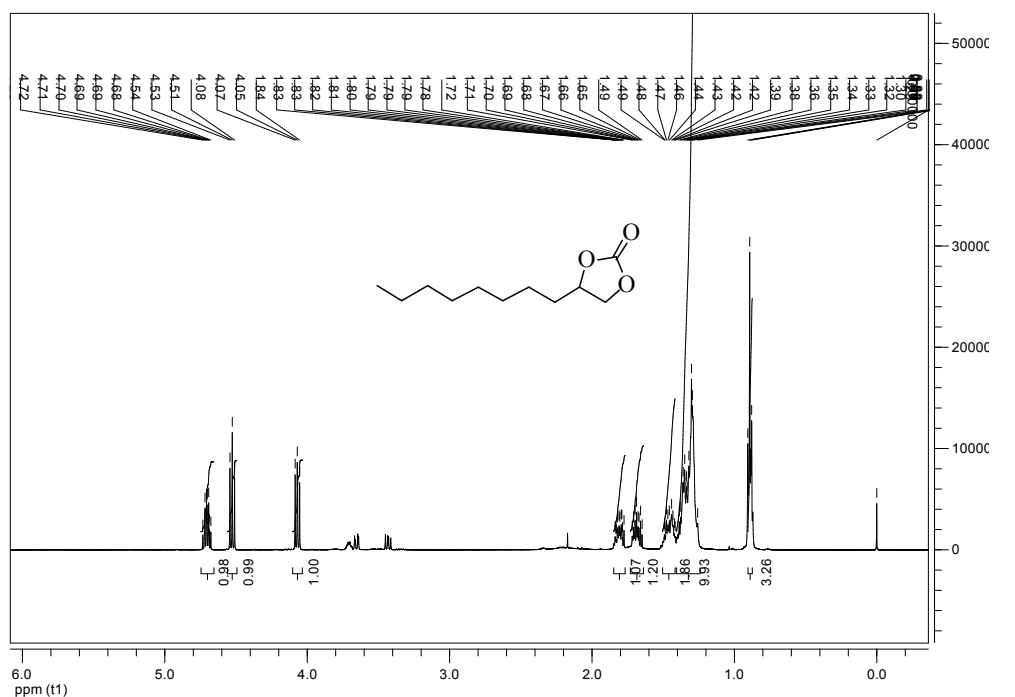


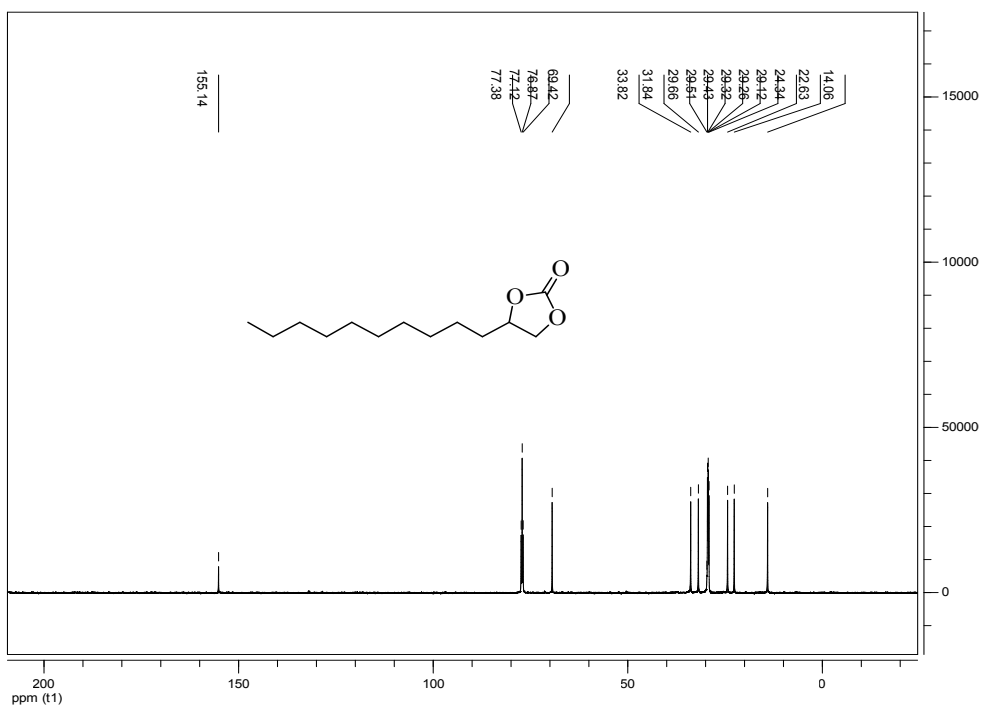
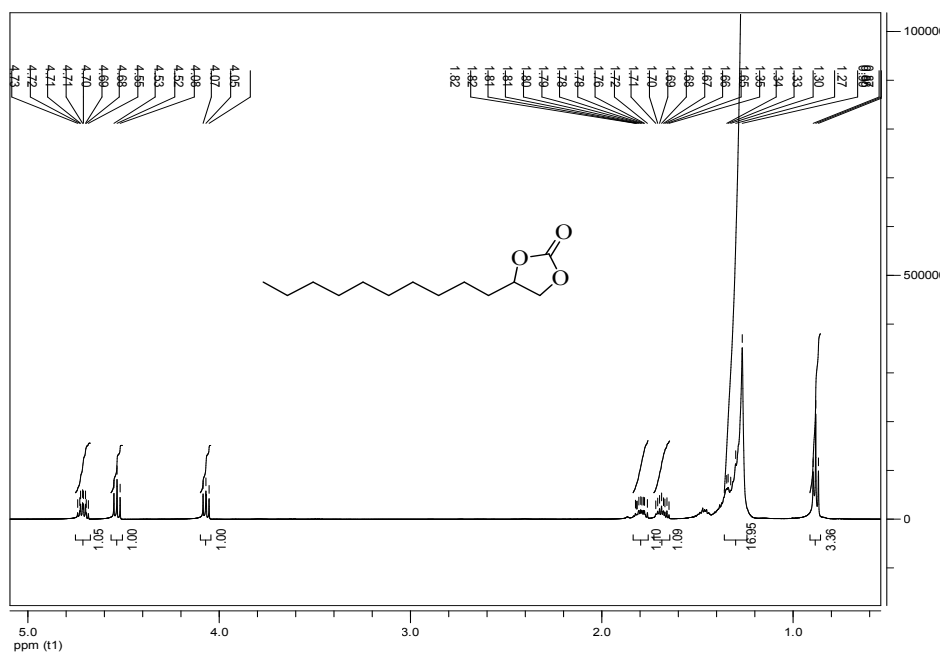


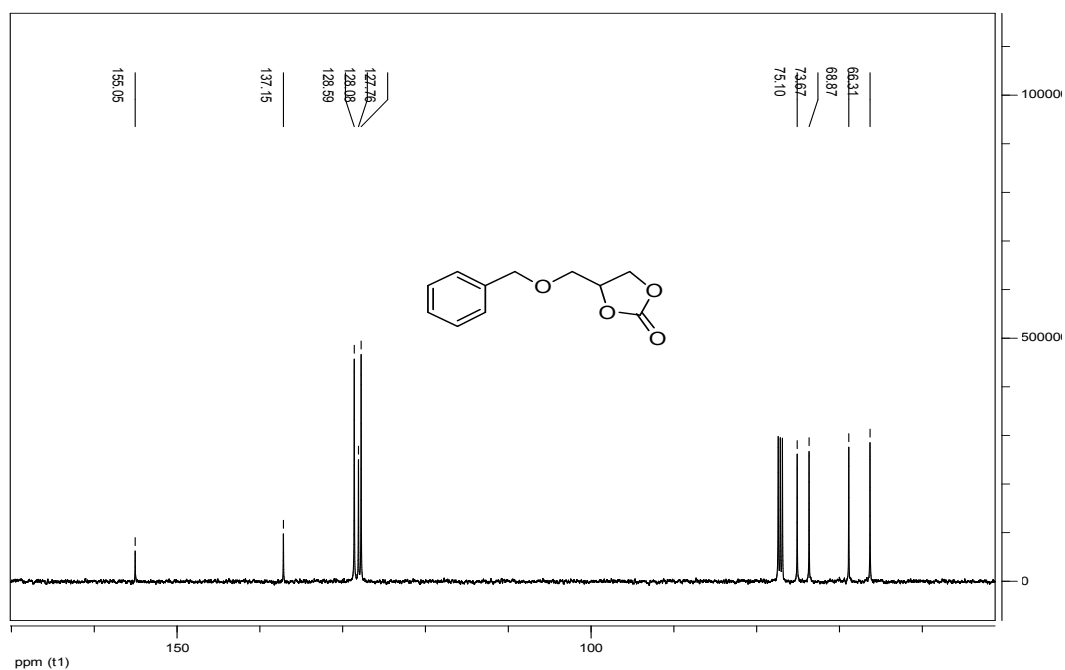
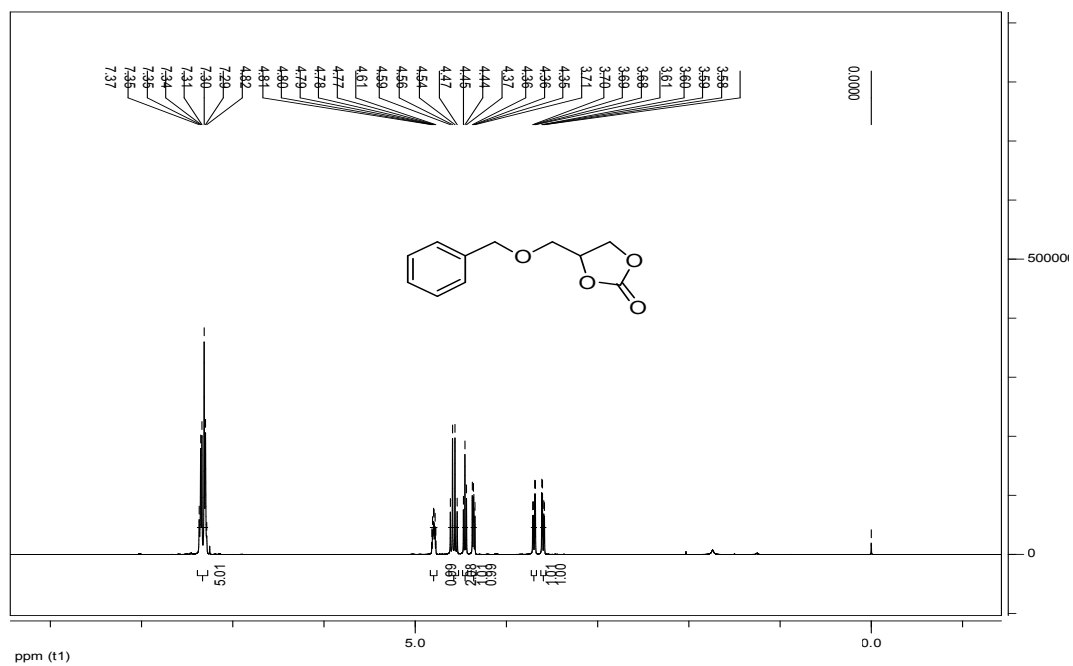


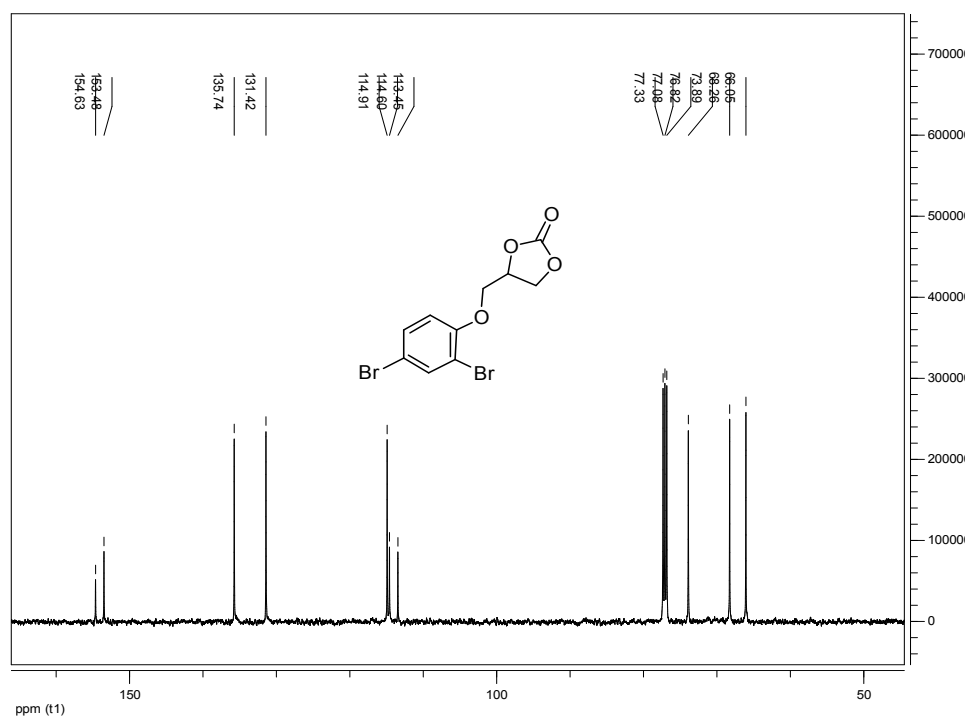
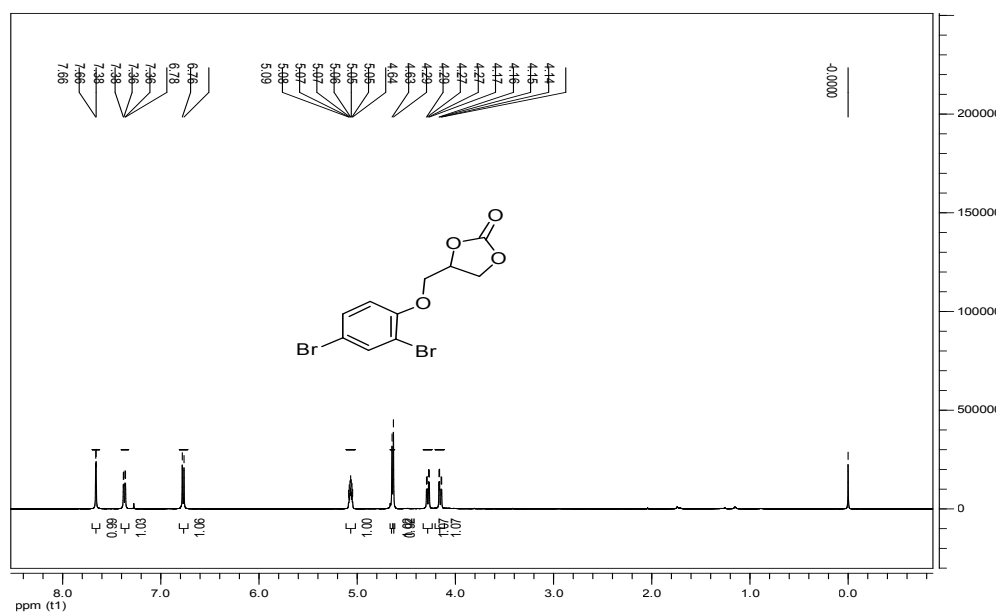


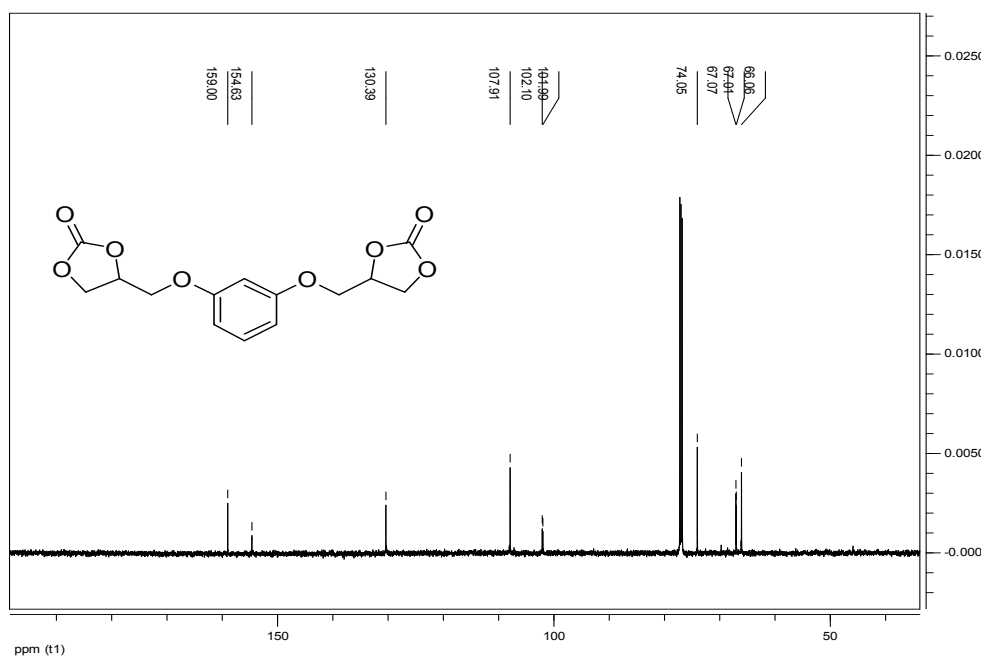
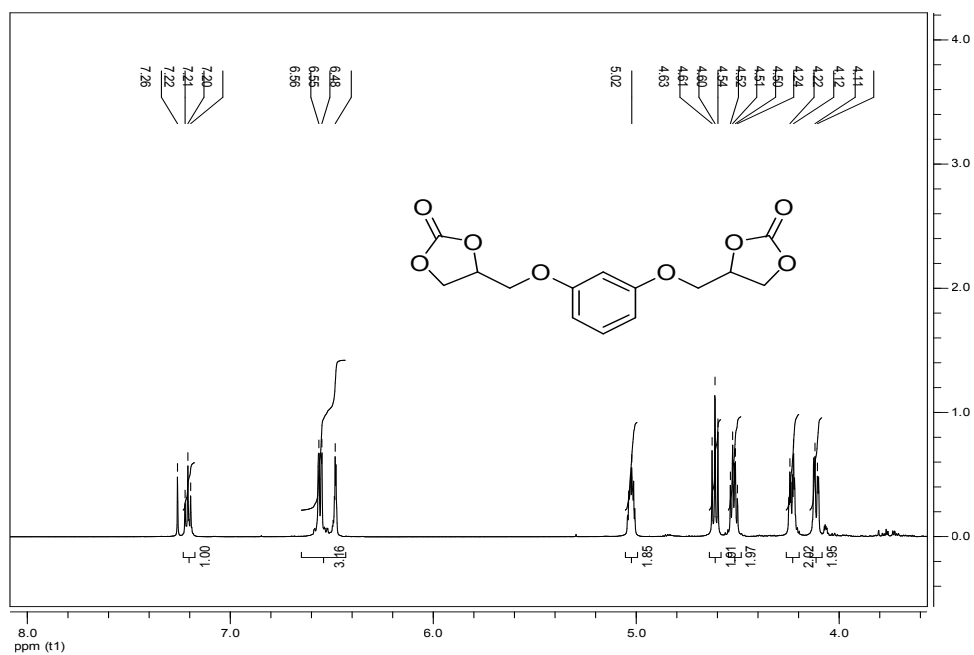




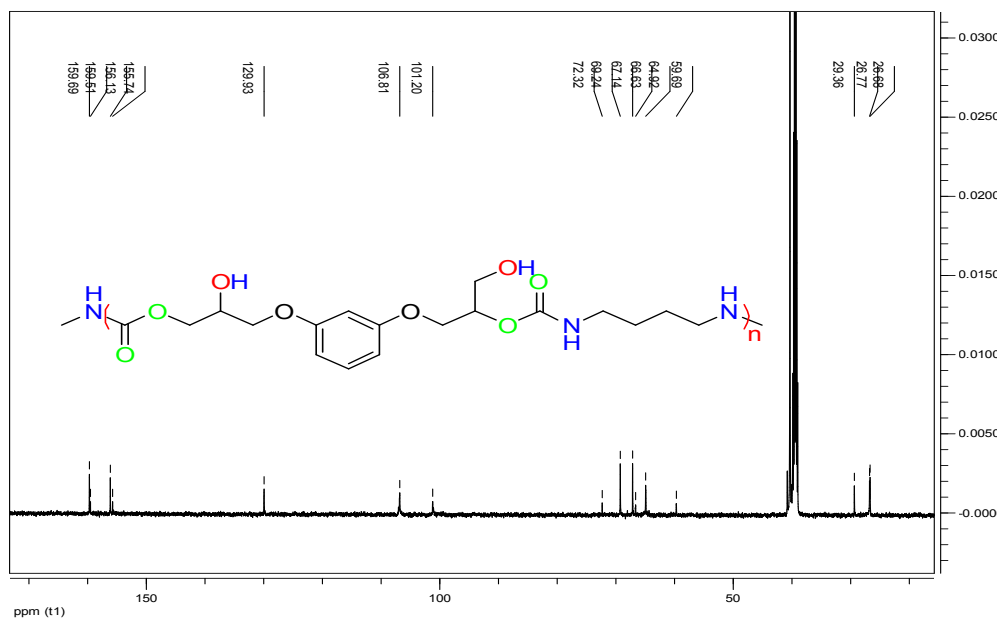
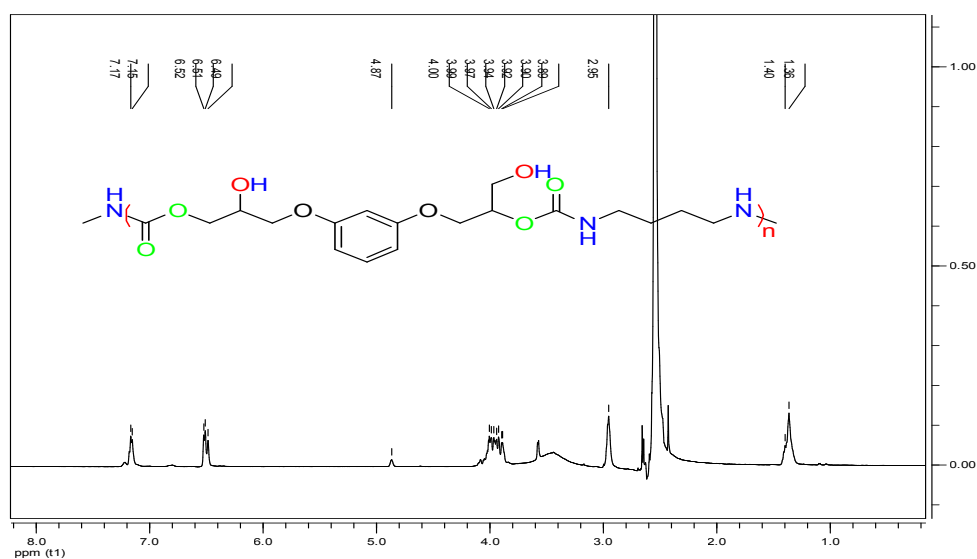




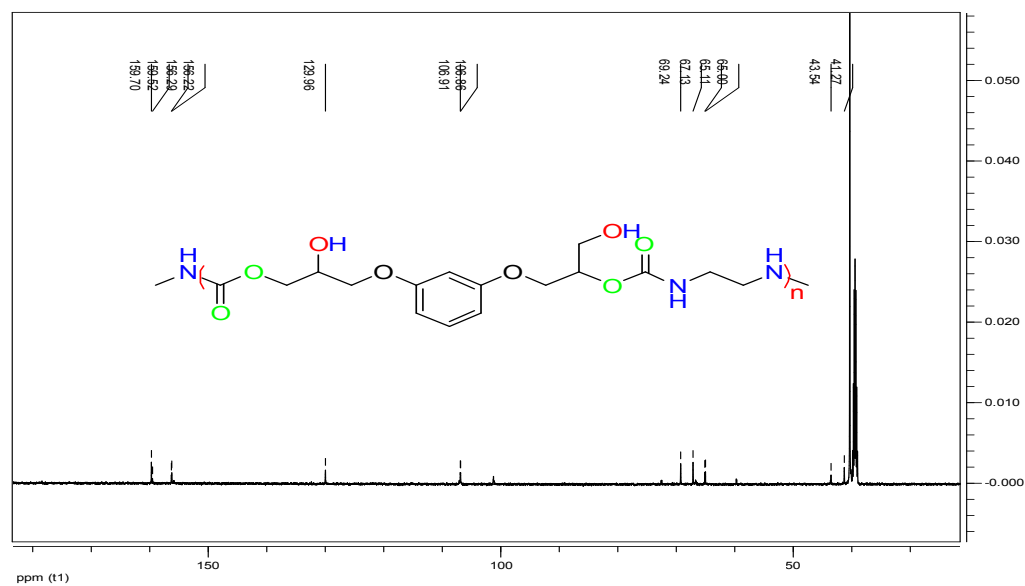
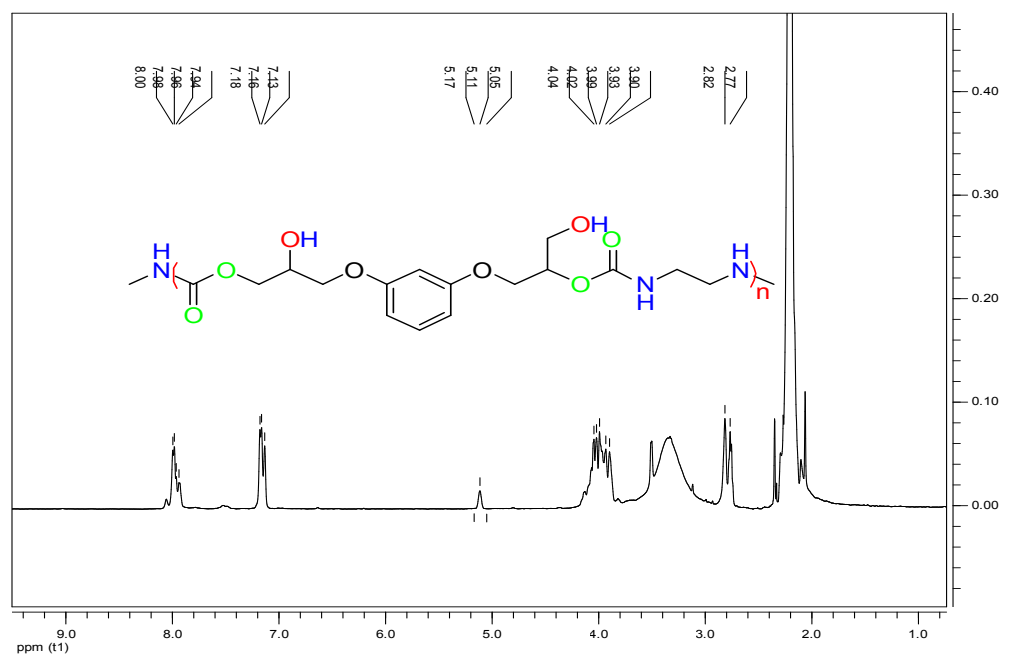




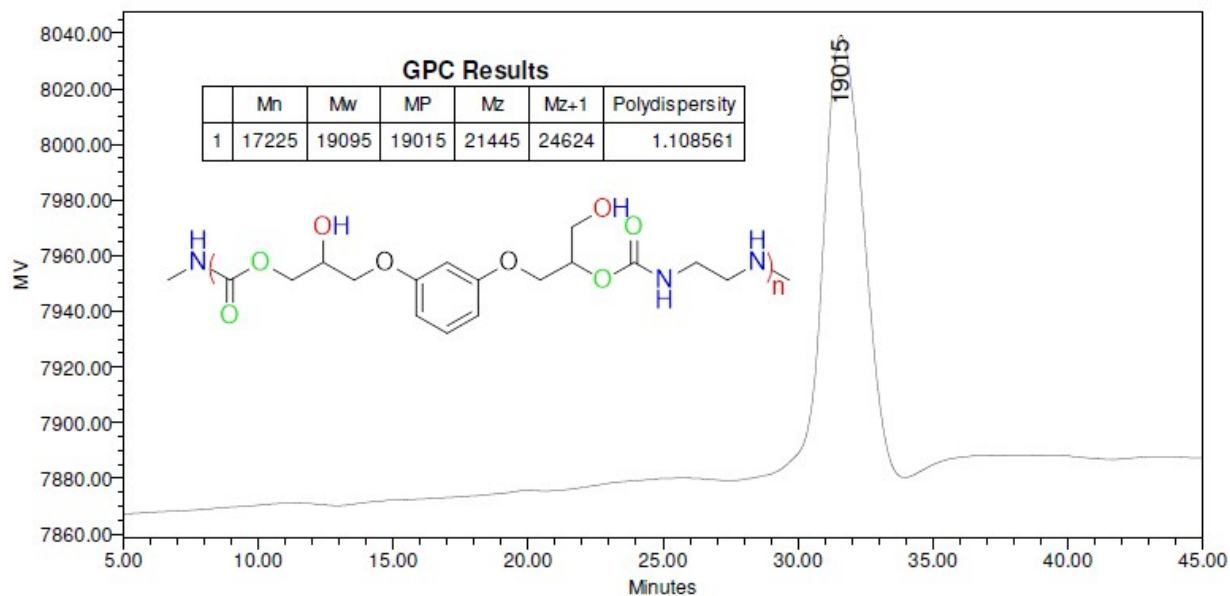
^1H NMR (600 MHz, $\text{d}_6\text{-DMSO}$): δ 1.40 (CH_2CH_2), 3.00 (NH CH_2), 3.96 (ArOCH_2 , CH_2OH , $\text{OCH}_2\text{CH}(\text{OH})\text{CH}_2\text{O}$), 4.97(CH_2OH), 6.51 (C_6H_4), 7.15 (C_6H_4 , NH) and ^{13}C NMR (150 MHz, $\text{d}_6\text{-DMSO}$): δ 26.68, 26.7, 29.36, 40.79, 64.92, 66.63, 67.14, 69.24, 72.32, 101.20, 106.81, 129.93, 155.74, 156.13, 159.51, 159.69.



^1H NMR (600 MHz $\text{d}_6\text{-DMSO}$): δ 2.77 (NH CH_2), 4.04 (ArO CH_2 , CH_2OH , O $\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{O}$), 5.11 (CH_2OH), 7.16 (C_6H_4), 7.94 (C_6H_4 , NH). ^{13}C NMR (150 MHz, $\text{d}_6\text{-DMSO}$): δ 41.27, 43.54, 65.00, 65.11, 67.13, 69.24, 106.80, 129.96, 156.22, 156.29, 159.52, 159.70.



GPC Result of polyurethane from monomer Resorcinol diglycidyl carbonate and ethylene diamine



GPC Result of polyurethane from monomer Resorcinol diglycidyl carbonate and Butane-1,4- diamine

