

Supplementary Information

Metal-free, Redox-neutral, Visible light-triggered Coupling of CO₂ with Epoxides to Cyclic Carbonates at Atmospheric Pressure

Sandhya Saini,^{1,2} Shafiur Rehman Khan,¹ Nand Kishor Gour,³ Ramesh Chandra Deka³ and
Suman L Jain^{1*}

*¹Chemical & Material Sciences Division, CSIR-Indian Institute of Petroleum, Haridwar Road,
Mohkampur, Dehradun-248005, India*

²Academy of Scientific and Innovative Research, Ghaziabad- 201002, India

³Department of Chemical Sciences, Tezpur University, Napaam, Tezpur – 784028, Assam

*Corresponding Author: suman@iip.res.in, +911352525788

Contents

¹H and ¹³C NMR spectra of cyclic carbonates (Figure S1- S18) ...Page No. (S2-S10)

^1H and ^{13}C NMR spectra of cyclic carbonates

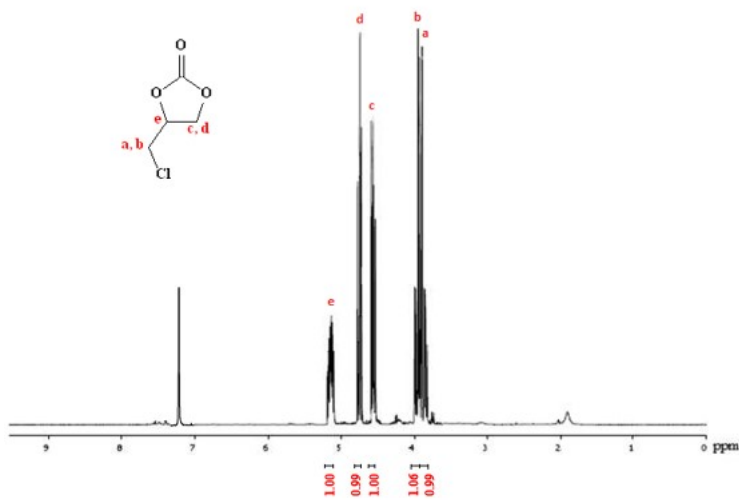


Figure S1. ^1H NMR spectra of 4-(chloromethyl)-1,3-dioxolan-2-one (Table 2, entry 1).

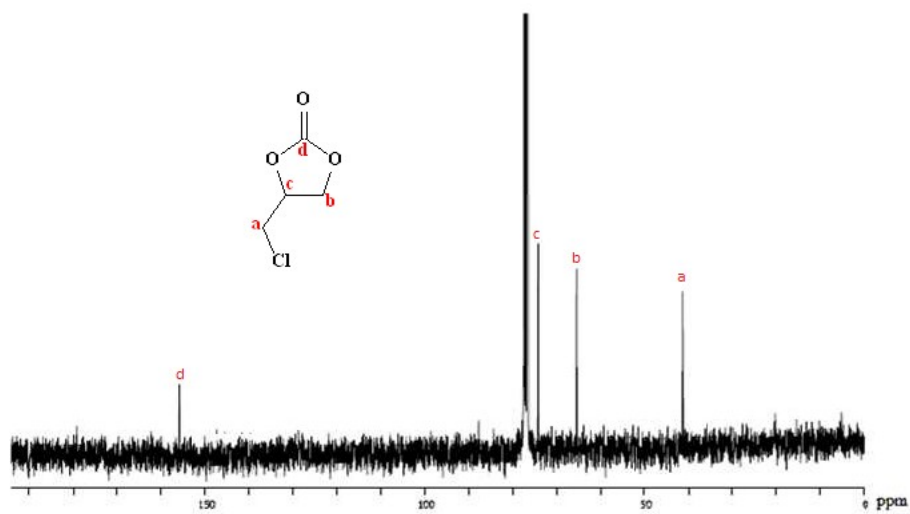


Figure S2. ^{13}C NMR spectra of 4-(chloromethyl)-1,3-dioxolan-2-one (Table 2, entry 1).

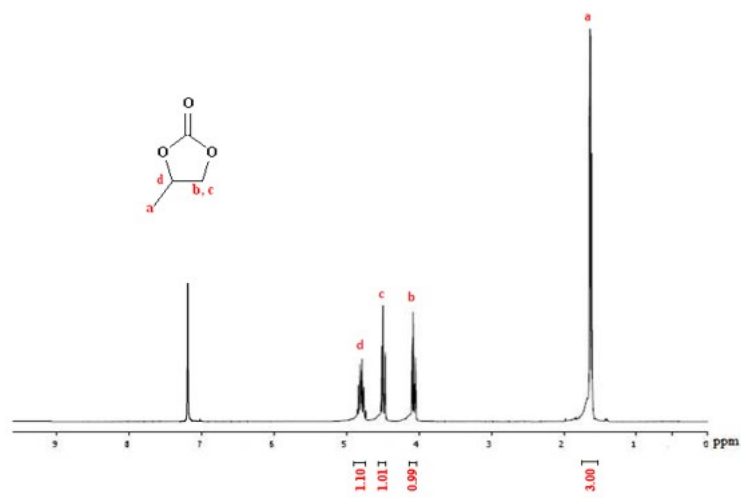


Figure S3. ¹H NMR spectra of 4-methyl-1,3-dioxolan-2-one (Table 2, entry 2).

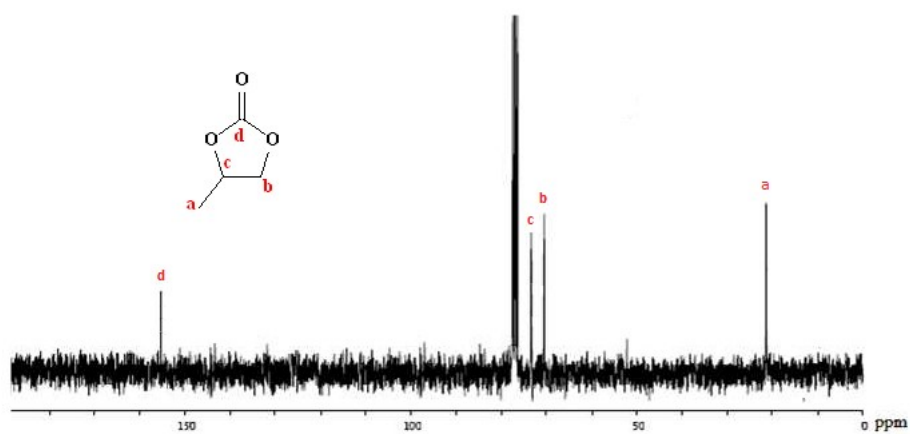


Figure S4. ¹³C NMR spectra of 4-methyl-1,3-dioxolan-2-one (Table 2, entry 2).

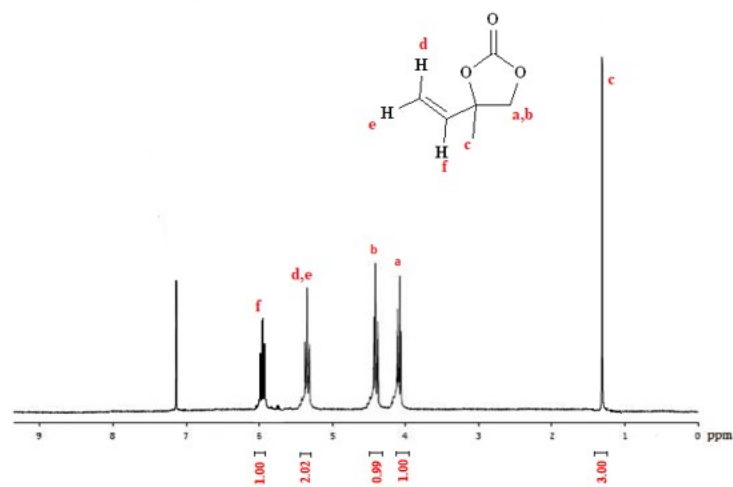


Figure S5. ^1H NMR spectra of 4-methyl-4-vinyl-1,3-dioxolan-2-one (Table 2, entry 3).

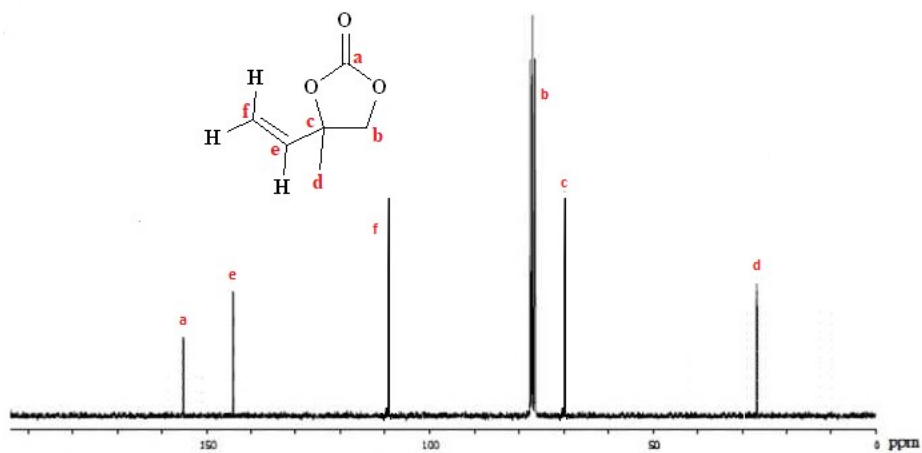


Figure S6. ^{13}C NMR spectra of 4-methyl-4-vinyl-1,3-dioxolan-2-one (Table 2, entry 3).

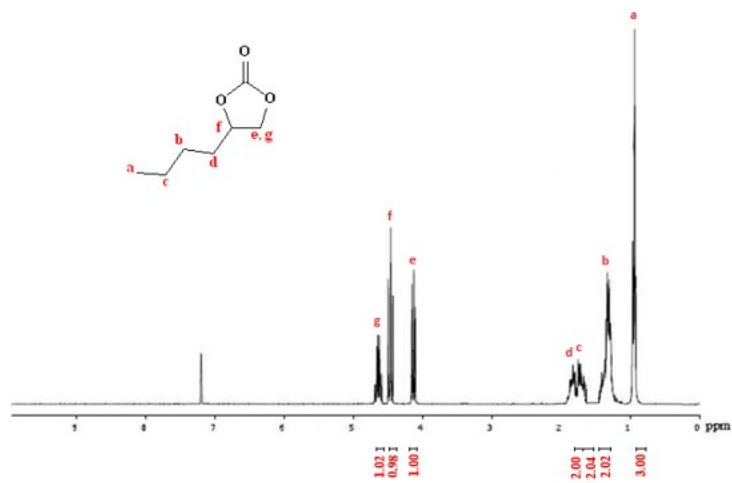


Figure S7. ¹H NMR spectra of 4-butyl-1,3-dioxolan-2-one (Table 2, entry 4).

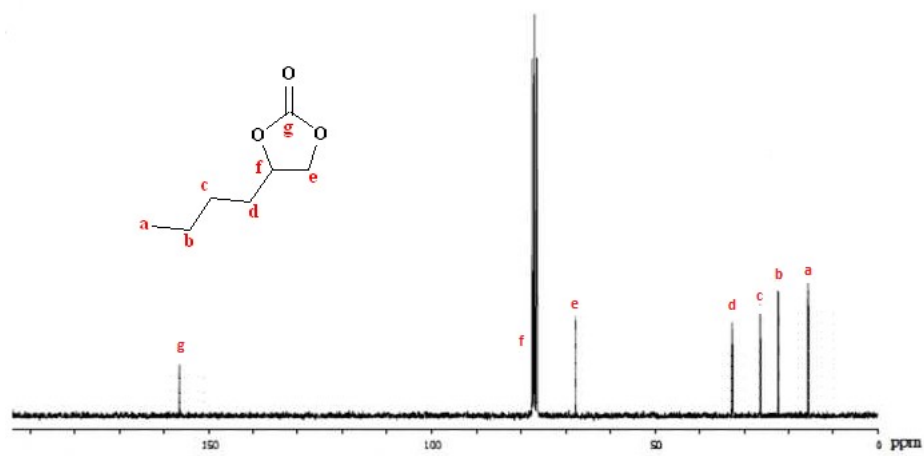


Figure S8. ¹³C NMR spectra of 4-butyl-1,3-dioxolan-2-one (Table 2, entry 4).

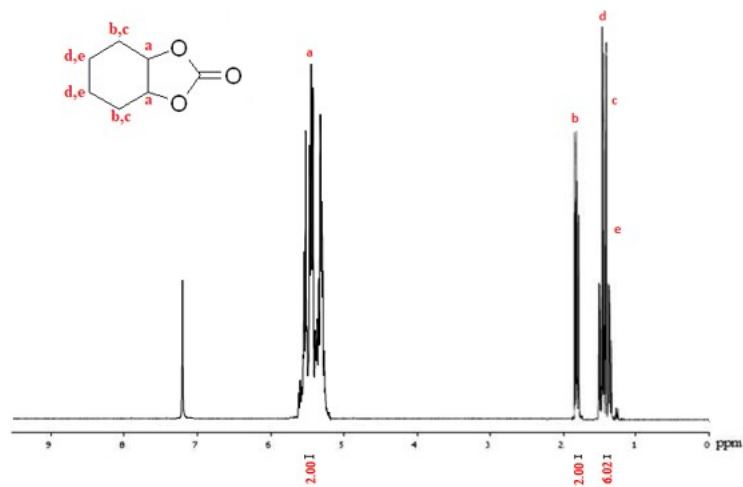


Figure S9. ¹H NMR spectra of hexahydrobenzo[d][1,3]dioxol-2-one (Table 2, entry 5).

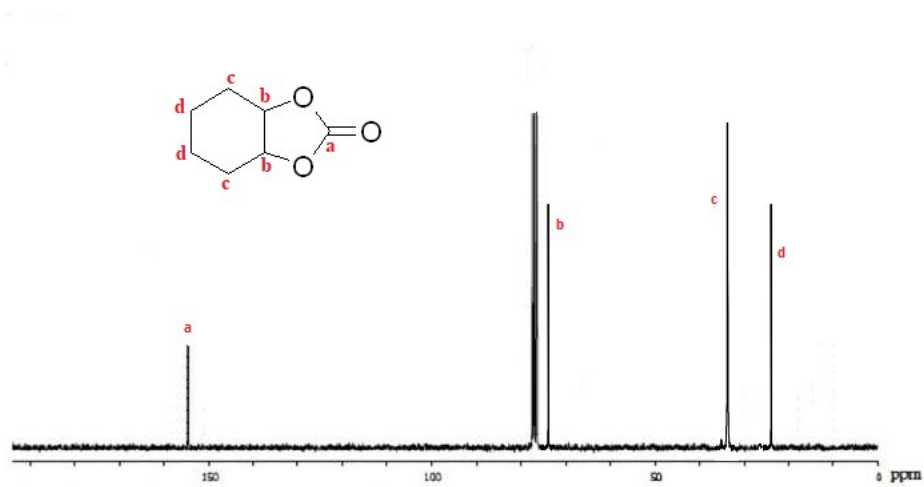


Figure S10. ¹³C NMR spectra of hexahydrobenzo[d][1,3]dioxol-2-one (Table 2, entry 5).

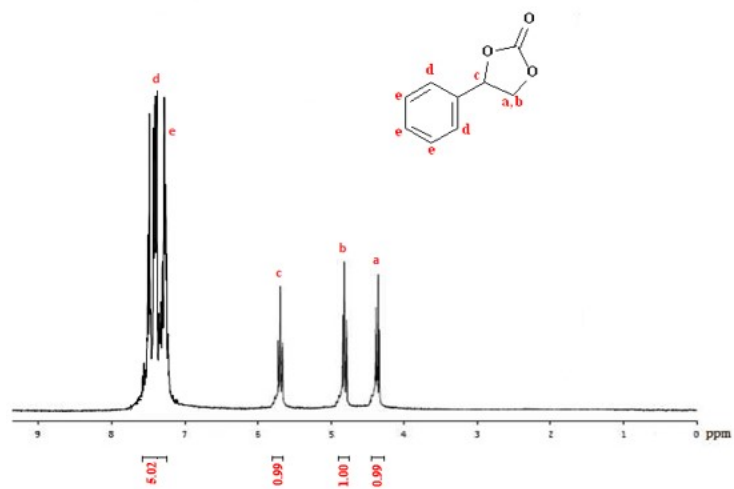


Figure S11. ^1H NMR spectra of 4-phenyl-1,3-dioxolan-2-one (Table 2, entry 6).

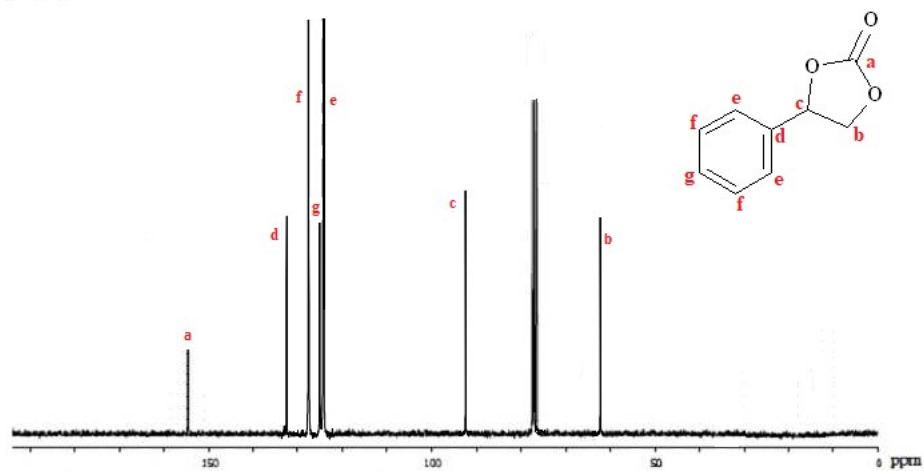


Figure S12. ^{13}C NMR spectra of 4-phenyl-1,3-dioxolan-2-one (Table 2, entry 6)

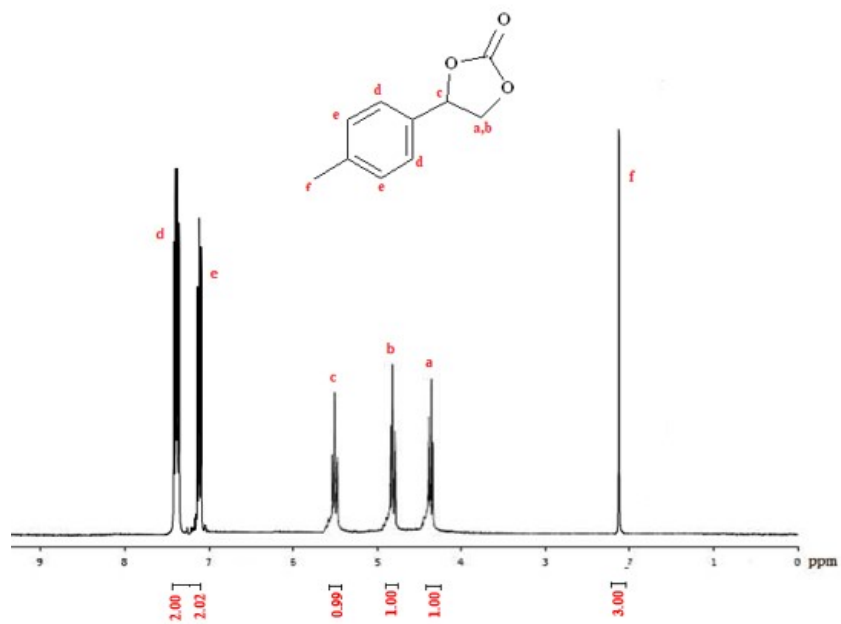


Figure S13. ¹H NMR spectra of 4-(p-tolyl)-1,3-dioxolan-2-one (Table 2, entry 7).

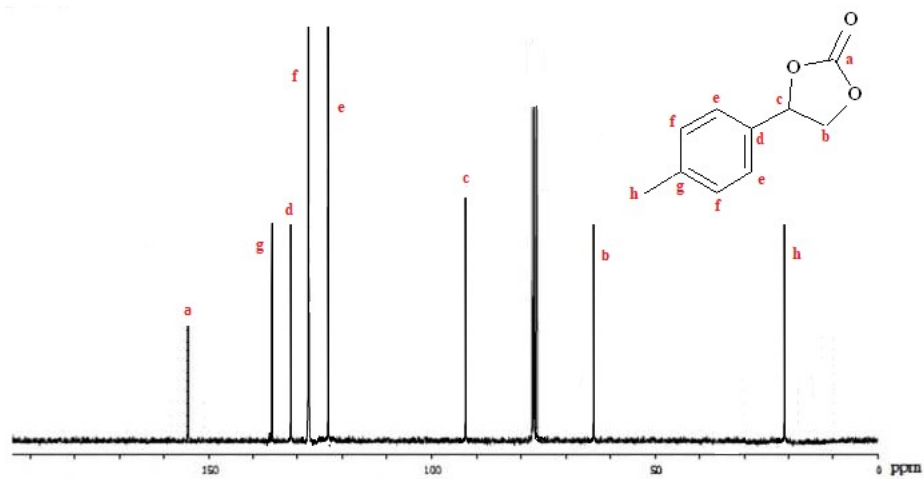


Figure S14. ¹³C NMR spectra of 4-(p-tolyl)-1,3-dioxolan-2-one (Table 2, entry 7)

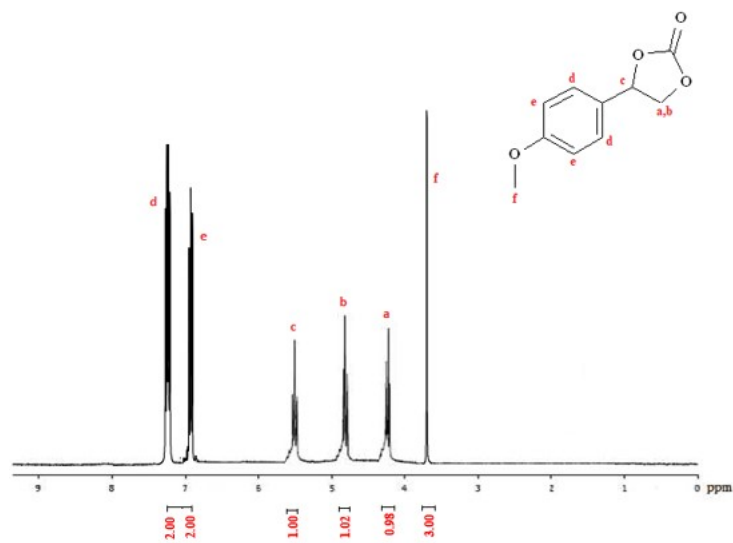


Figure S15. ^1H NMR spectra of 4-(4-methoxyphenyl)-1,3-dioxolan-2-one (Table 2, entry 8).

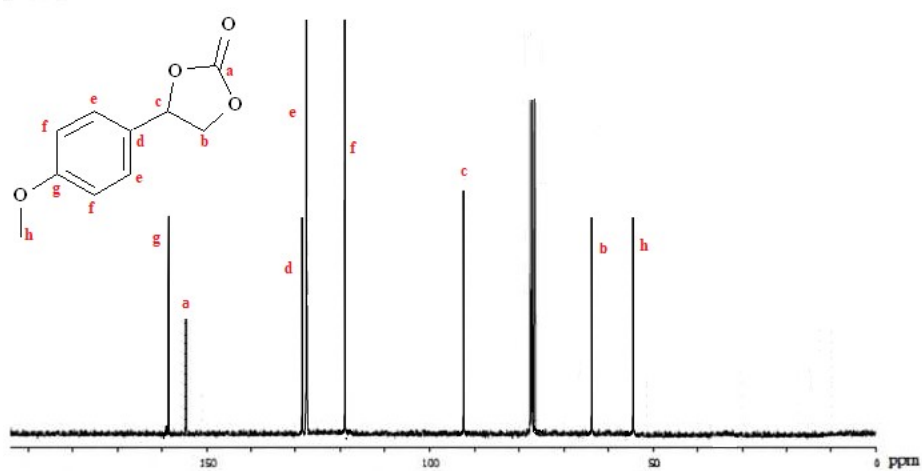


Figure S16. ^{13}C NMR spectra of 4-(4-methoxyphenyl)-1,3-dioxolan-2-one (Table 2, entry 8)

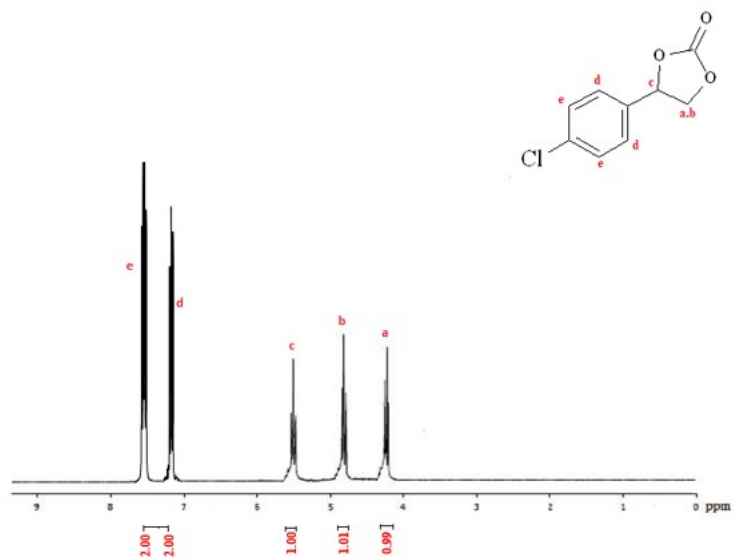


Figure S17. ^1H NMR spectra of 4-(4-chlorophenyl)-1,3-dioxolan-2-one (Table 2, entry 9).

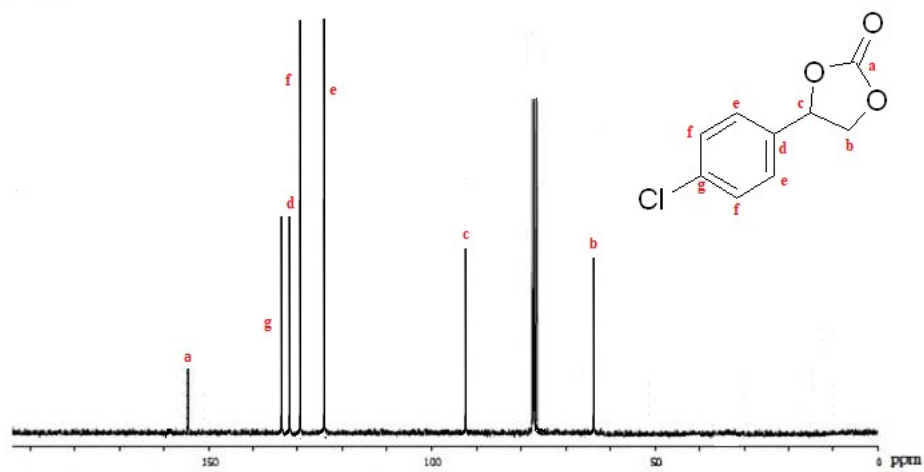


Figure S18. ^{13}C NMR spectra of 4-(4-chlorophenyl)-1,3-dioxolan-2-one (Table 2, entry 9)