

Supplementary Information

α -oxidation of banana lignin with atmospheric oxygen catalyzed by Co_3O_4

Carlos A.C. Kramer^{*‡}. *Luciene S. de Carvalho*[‡]

[‡] Energy Technology Laboratory. Institute of Chemistry. Federal University of Rio Grande do Norte.
Natal. Rio Grande do Norte 59075-000. Brazil

Corresponding author

*Email: carlosaugustokramer@gmail.com

Contents

Fig. SI-1 TG and DTG curves for thermal analysis of raw biomass	3
Fig. SI-2 Corresponding structure of the catalyst obtained - COD ID number 9005897, File available in Supplementary Files (.cif)	3
SI-Table a Relative transmittance of the band 3400-3430cm ⁻¹ (axial stretching of the O-H bond)	4
SI-Table b Relative transmittance of the band 1710cm ⁻¹ (axial deformation of double carbon-oxygen bonds of ketones, C=O)	4

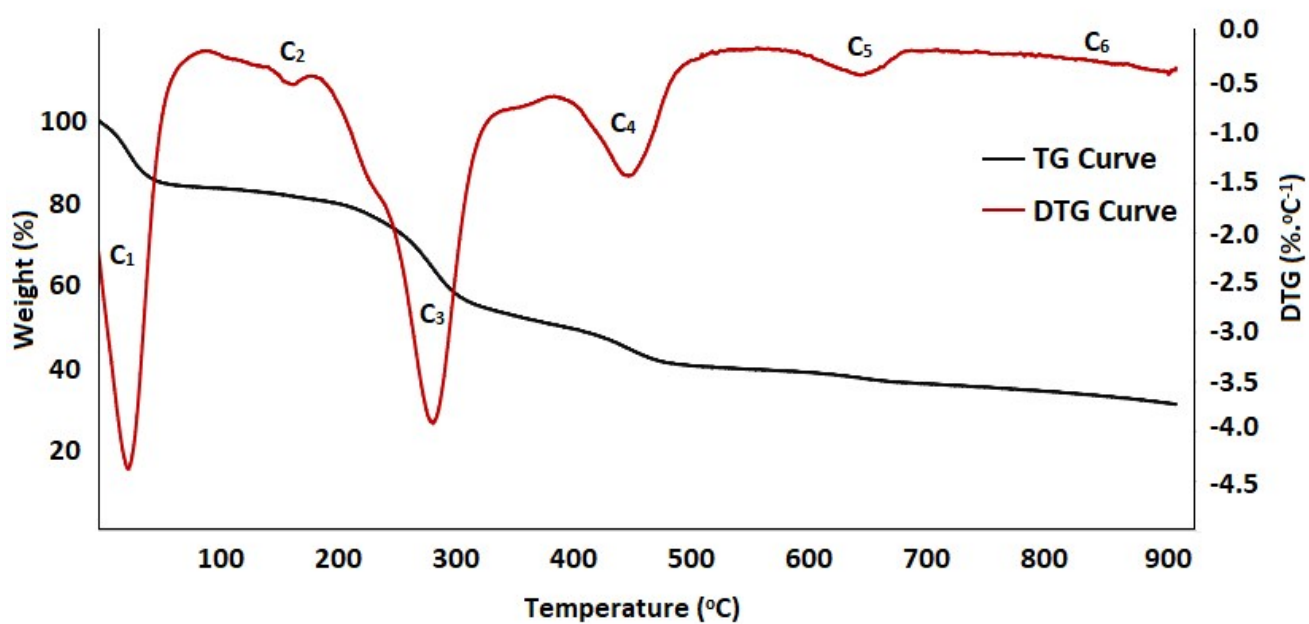


Fig. SI-1 TG and DTG curves for thermal analysis of raw biomass

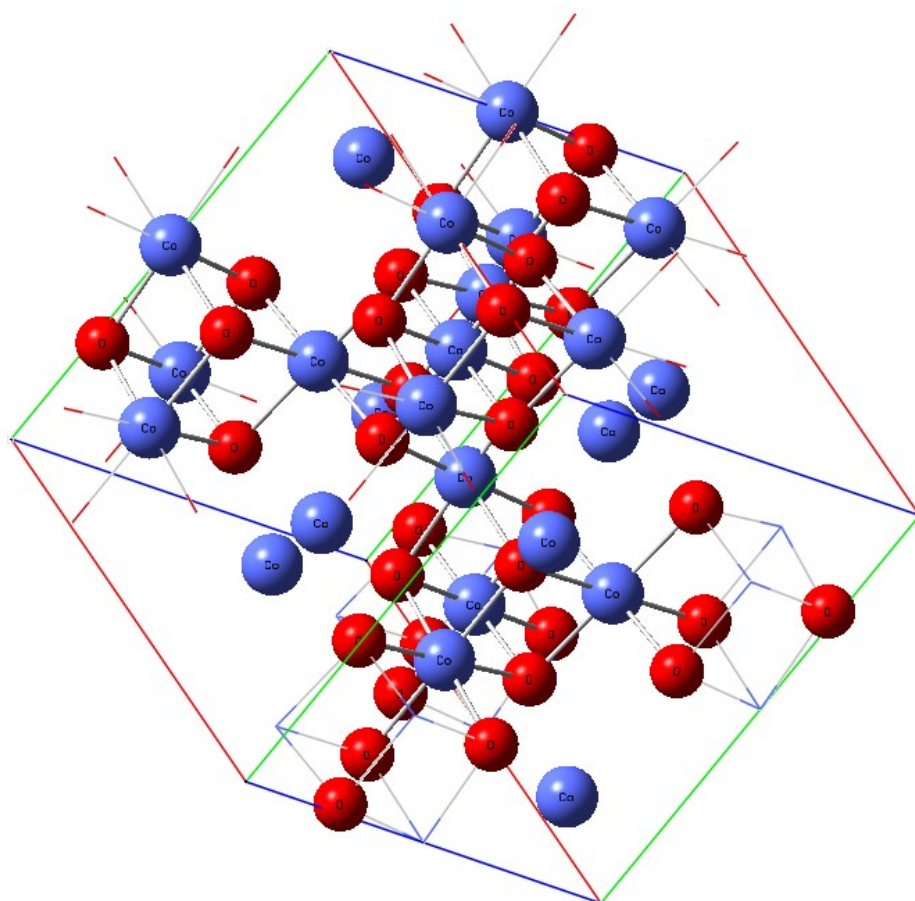


Fig. SI-2 Corresponding structure of the catalyst obtained - COD ID number 9005897, File available in Supplementary Files (.cif)

SI-Table a Relative transmittance of the band 3400-3430cm⁻¹ (axial stretching of the O-H bond)

Time (h)	<i>Co₃O₄ catalyst concentration (mol/mol)</i>			
	0.0	0.50%	1.0%	2.0%
0	97.68	97.68	97.68	97.68
6	97.73	97.69	97.63	97.65
12	97.83	97.7	97.77	97.68
18	97.76	97.65	97.74	97.69
24	97.82	97.62	97.64	97.61
30	97.79	97.7	97.51	97.54
36	97.76	97.65	97.55	97.52
42	97.84	97.58	97.52	97.51
48	97.68	97.55	97.42	97.50
54	97.73	97.57	97.39	97.40
60	97.75	97.52	97.42	97.42
66	97.71	97.55	97.36	97.38
72	97.69	97.51	97.38	97.39

SI-Table b Relative transmittance of the band 1710cm⁻¹ (axial deformation of double carbon-oxygen bonds of ketones, C=O)

Time	<i>Co₃O₄ catalyst concentration (mol/mol)</i>			
	0.0	0.50%	1.0%	2.0%
0	98.84	98.84	98.84	98.84
6	98.83	98.72	98.76	98.74
12	98.84	98.69	98.51	98.5
18	98.82	98.58	98.43	98.44
24	98.81	98.51	98.38	98.36
30	98.79	98.43	98.18	98.22
36	98.76	98.38	98.08	98.14
42	98.76	98.28	98.01	97.98
48	98.77	98.10	97.84	97.86
54	98.76	97.91	97.64	97.59
60	98.74	97.85	97.66	97.60
66	98.75	97.84	97.67	97.59
72	98.74	97.83	97.66	97.60

