Electronic Supplementary Material (ESI) for RSC Advances.

Jindal and Jha, Supplementary Data

Table S1

Effect of reaction temperature on products distribution from HTL of waste furniture sawdust (Conditions: 10 g of sawdust with 60 ml water, residence time of 15 min, and 1.0 MPa N_2 initial pressure).

Reaction Temperature (°C)	Conversion[a] (wt%)	LBO[b] (wt%)	HBO[c] (wt%)	TBO (wt%)	SR[d] (wt%)	WS[e] (wt%)	Gas[f] (wt%)
180	37.5	1.2	3.4	4.6	62.5	26.2	6.7
200	45.2	2.4	5.2	7.6	54.8	27.9	9.7
220	51.3	3.5	6.4	9.9	48.7	29.3	12.1
240	57.8	4.1	6.8	10.9	45.2	30.2	13.7
260	59.8	5.7	6.2	11.9	41.9	31.3	14.9
280[g]	61.6	5.2	7.5	12.7	38.4	32.1	16.8
300	60.8	4.8	7.3	12.1	39.2	30.7	18.0

[a]See Eq. 2

[b]See Eq. 3

[c]See Eq. 4

[d]See Eq. 5

[e]See Eq. 6

[f]See Eq. 7

[g]The results at 280°C were taken from the literature [1] for comparison.

Table S2

Effect of residence time on products distribution from HTL of waste furniture sawdust (Conditions: reaction temperature 280°C, 10 g of sawdust with 60 ml water, and 1.0 MPa N_2 initial pressure).

Residence Time (min)	Conversion[a] (wt%)	LBO[b] (wt%)	HBO[c] (wt%)	TBO (wt%)	SR[d] (wt%)	WS[e] (wt%)	Gas[f] (wt%)
0	59.1	2.4	4.8	7.2	40.9	36.2	15.7
15[g]	61.6	5.2	7.5	12.7	38.4	32.1	16.8
30	62.1	4.2	6.2	10.4	37.9	30.8	20.9
60	59.8	3.4	4.8	8.2	40.2	29.7	21.9

[a]See Eq. 2

[b]See Eq. 3

[c]See Eq. 4

[d]See Eq. 5

[e]See Eq. 6

[f]See Eq. 7

[g]The results at 15 min were taken from the literature [1] for comparison.

Table S3

Effect of ratio of the water/sawdust on products distribution from HTL of waste furniture sawdust (Conditions: reaction temperature 280°C, 10 g sawdust, and initial N_2 pressure of 1.0 MPa for 15 min).

Water/sawdust ratio (ml/gm)	Conversion[a] (wt%)	LBO[b] (wt%)	HBO[c] (wt%)	TBO (wt%)	SR[d] (wt%)	WS[e] (wt%)	Gas[f] (wt%)
2	57.7	1.4	2.3	3.7	42.3	35.7	18.3
4	58.2	2.6	4.3	6.9	41.8	34.2	17.1
6[g]	61.6	5.2	7.5	12.7	38.4	32.1	16.8
8	59.8	4.2	6.4	10.6	40.2	34.9	14.3
10	59.2	3.8	5.8	9.6	40.8	39.7	9.9

[a]See Eq. 2

[b]See Eq. 3

[c]See Eq. 4

[d]See Eq. 5

[e]See Eq. 6

[f]See Eq. 7

[g]The results at water/sawdust ratio of 6 were taken from the literature [1] for comparison.

Table S4

Effect of initial N_2 pressure on products distribution from HTL of waste furniture sawdust (Conditions: reaction temperature 280°C, 10 g of sawdust with 60 ml water, and residence time of 15 min).

Initial N_2 pressure (MPa)	Conversion[a] (wt%)	LBO[b] (wt%)	HBO[c] (wt%)	TBO (wt%)	SR[d] (wt%)	WS[e] (wt%)	Gas[f] (wt%)
0	59.8	3.2	5.6	9.8	40.2	26.2	23.8
0.5	60.9	3.6	5.8	10.7	39.1	29.1	21.1
1.0[g]	61.6	5.2	7.5	12.7	38.4	32.1	16.8
1.5	59.8	4.8	7.1	11.9	40.2	31.3	16.6
2.0	59.4	4.6	6.9	11.5	40.6	31.6	16.3

[a]See Eq. 2

[b]See Eq. 3

[c]See Eq. 4

[d]See Eq. 5

[e]See Eq. 6

[f]See Eq. 7

[g]The results at 1.0 MPa were taken from the literature [1] for comparison.

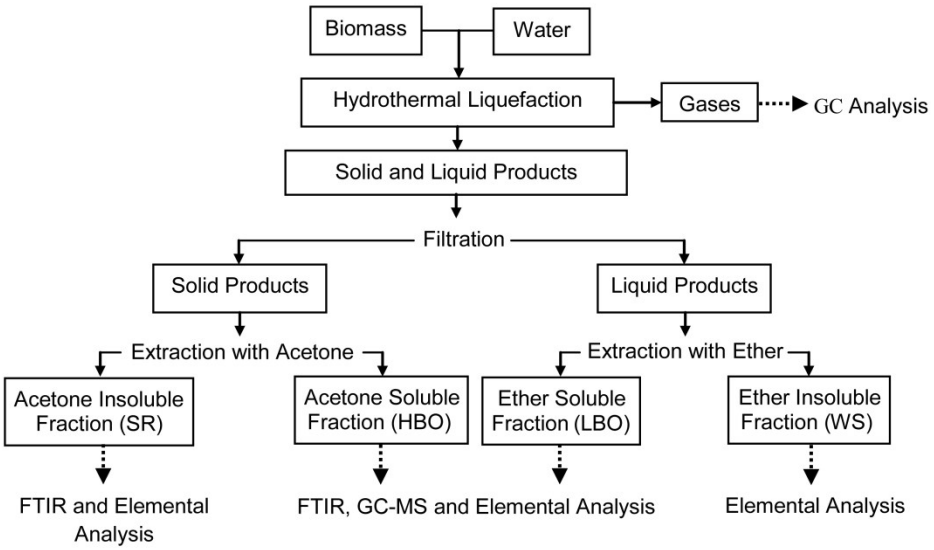

Fig. S1 Separation and Extraction Procedure

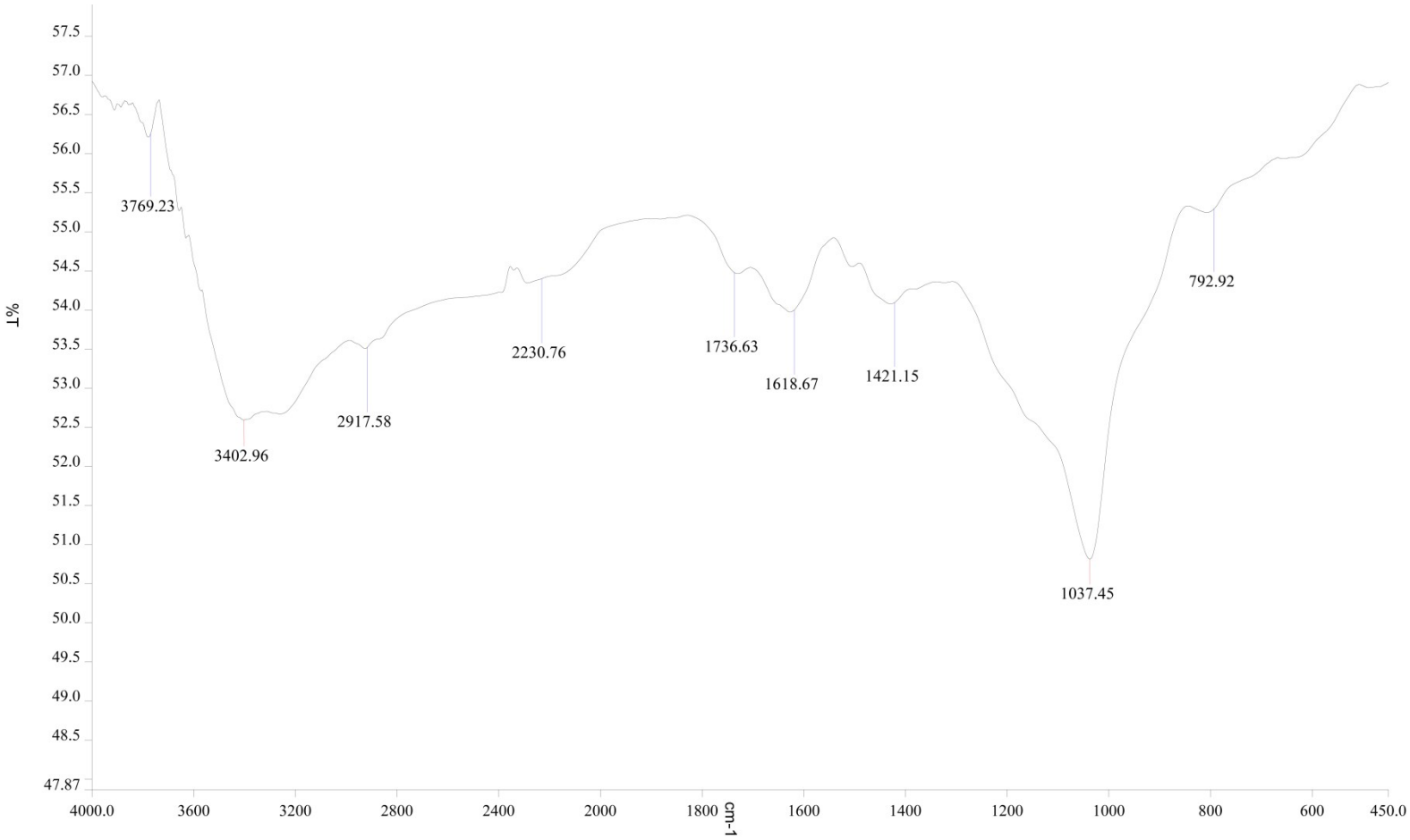

Fig. S2 FTIR spectra of waste furniture sawdust

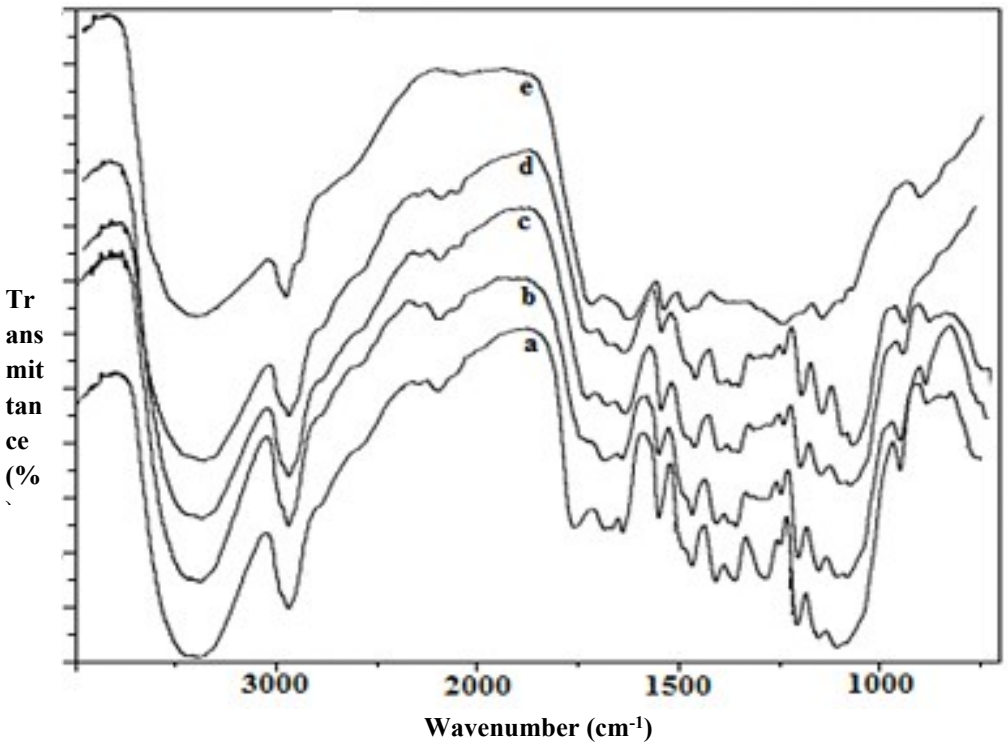

Fig. S3 FT-IR spectra of solid residues (a-180°C, b-220°C, c-240°C, d-260°C, and e-280°C)

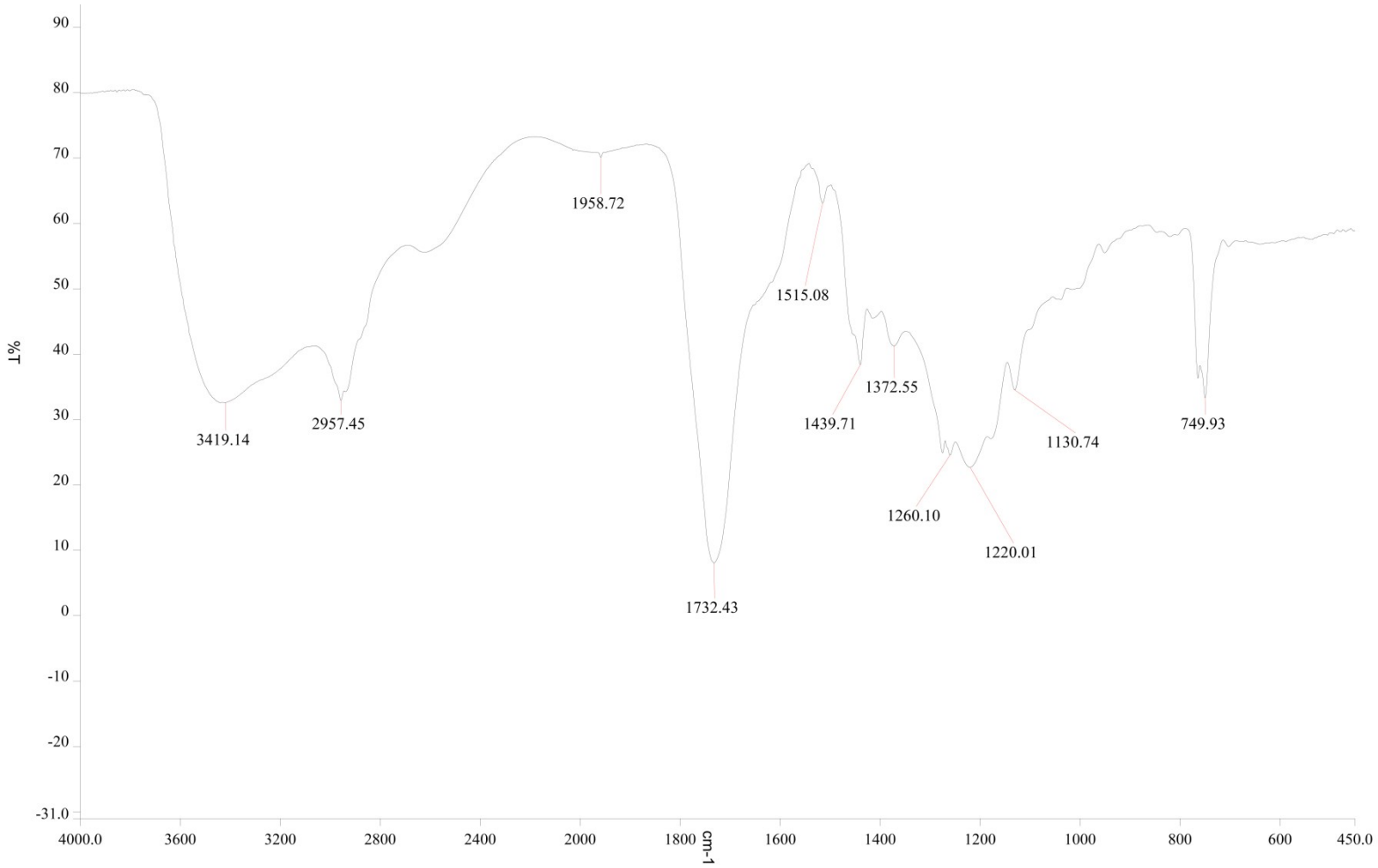

Fig. S4 FTIR spectra of light bio-oil

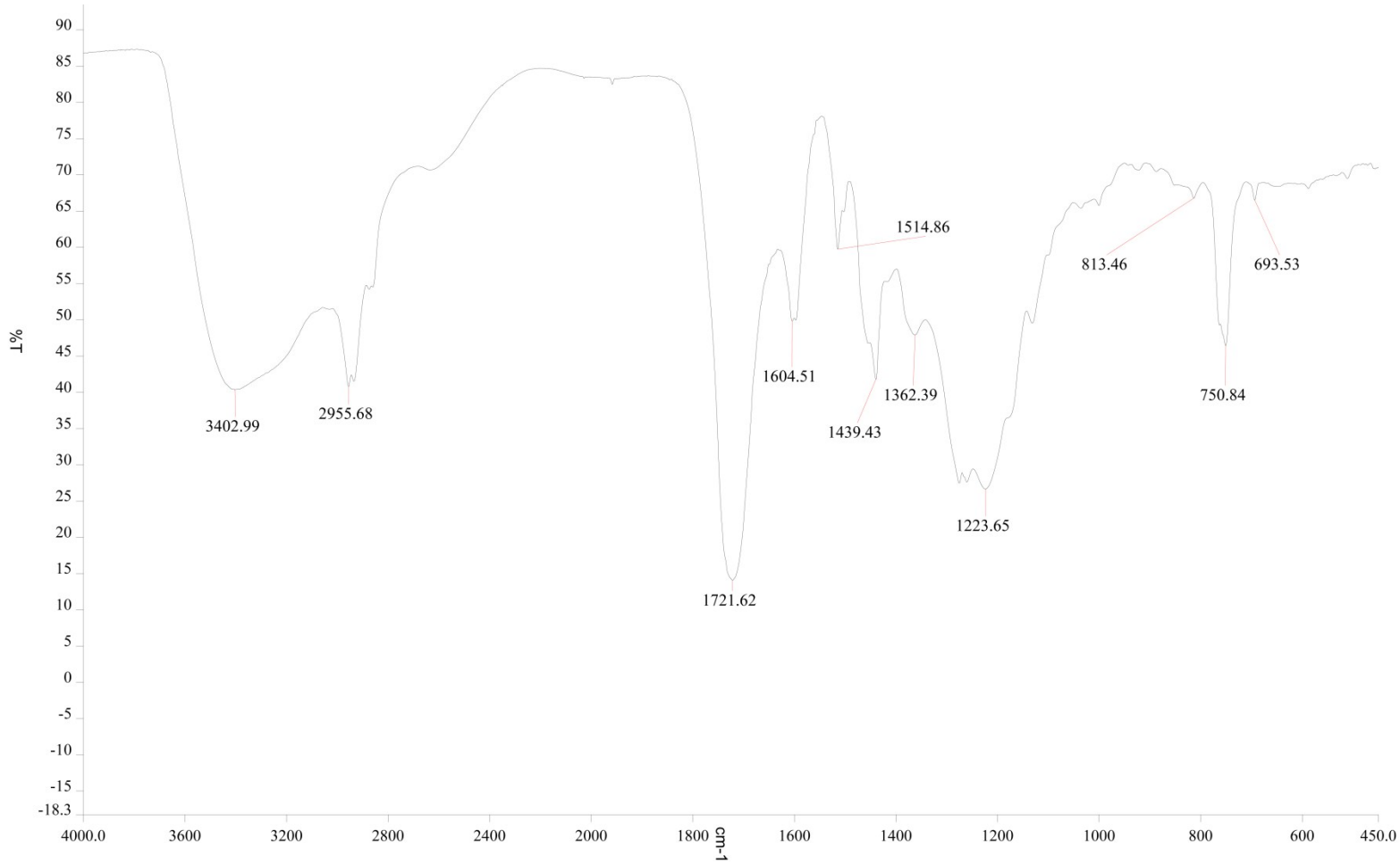

Fig. S5 FTIR spectra of heavy bio-oil

Reference

[1] M. K. Jindal, and M. K. Jha, Catalytic Hydrothermal Liquefaction of Waste Furniture Sawdust to Bio-oil. *Indian Chemical Engineer*, 2015, DOI: 10.1080/00194506.2015.1006145.