Supplementary data

Figure S1 The photos of 20 typical feedstocks

Table S1 Main metal content of 20 typical feedstocks

	Sample	K_2O (%)	CaO (%)	MgO (%)	Al_2O_3 (%)	SiO_2 (%)	P_2O_5 (%)	SO_3 (%)	Cl_2O (%)	Fe_2O_3 (%)
Straw	Peanut Straw	14.00	27.92	22.52	4.42	10.38	9.26	7.29	1.87	0.82
	Soybean Straw	30.37	25.56	17.16	2.21	5.67	12.69	6.01		0.27
	Cornstalk	46.73	7.12	4.59		18.18	7.55	2.51	12.68	0.39
	Sesame Stalk	26.57	33.34	2.54	2.21	4.65	9.76	7.58	12.09	1.05
	Rice Straw	16.26	8.24	3.66		61.11	3.04	2.78	4.17	0.14
	Tobacco Stem	29.08	30.80	6.43	1.50	0.63	3.67	12.55	14.77	0.15
	Wheat Straw	13.38	8.10	4.60	3.36	51.55	5.02	9.61	3.87	0.50
	Cotton Stalk	30.51	27.94	9.06	2.24	3.87	11.59	11.74	2.37	0.58
Shell	Peanut Shell	31.72	11.53	6.92	8.01	17.27	10.10	11.67		1.84
	Rice Husk	1.80	0.88			96.36		0.55		0.24
	Corncob	27.27	27.41	3.63	3.40	21.49	8.06	1.95	5.36	1.15
	Rape Pod	24.13	42.89	3.12	1.59	1.03	4.50	17.59	4.80	0.17
Wood	Camphor Tree	7.99	53.77	12.96		10.38	8.72	5.32		0.59
	Eucalyptus	9.69	29.98	6.86	9.28	22.09	9.78	5.79		5.53
	Bamboo	36.23	7.14	14.02	2.62	9.23	11.71	15.44		0.59
	Sapele	1.71	53.09	35.69		1.96	2.52	4.21		0.24
Alage	Bloom Alage	1.24	6.32		56.67	17.74	2.82	3.17		11.10
	Enteromorpha Algae	11.47	2.96	13.08		2.84	34.92	3.72	29.30	0.56
	Spirulina	10.52	3.65	17.63	1.62	1.89	0.85	25.40	37.05	1.18
	Chlorella	9.49	6.05	14.42		3.95	51.26	0.83	12.09	0.61

Table S2 GC/MS result of bamboo bio-oil

Peak	Time	Peak area%	Chemical name	Molecular weight
1	2	6.88	Hydroxy-acetaldehyde	60.21
2	2.43	16.43	Acetic acid	60.02
3	2.61	6.05	1-hydroxy-2-Propanone	74.04
4	3.08	0.93	1,2-Ethanediamine, N,N-diethyl-	116.13
5	3.79	0.66	3-Nitro-2-methyl propene	101.05
6	4.1	4.51	Acetic acid-methyl ester	74.04
7	4.32	2.23	Succindialdehyde	86.04
8	4.5	2.51	Propanoic acid, 2-oxo-, methyl ester	102.03
9	5.46	3.27	Furfural	96.02
10	6.4	1.01	1,2-Ethanediol, diacetate	146.06
11	6.92	0.54	2-Butyne-1,4-diol	86.04
12	7.73	0.53	2(5H)-Furanone	84.02
13	8.06	2.88	2-Cyclopenten-1-one, 2-hydroxy-	98.04
14	9.93	0.53	Phenol	94.04
15	10.14	2.5	2,4(1H,3H)-Pyrimidinedione, dihydro-	114.04
16	10.92	0.51	D-Limonene	136.13
17	11.09	1.82	2-Cyclopenten-1-one, 2-hydroxy-	112.05
18	12.84	2.79	2-Methoxy-phenol,	124.05
19	13.15	1.7	1,3-Propanediamine, N-methyl-	88.1
20	15.86	1.23	Creosol	138.07
21	16.8	13.71	4-vinyl phenol	120.06
22	18.27	0.79	Phenol, 4-ethyl-2-methoxy-	152.08
23	19.25	6.1	2-Methoxy-4-vinylphenol	150.07
24	20.28	5.71	Phenol, 2,6-dimethoxy-	154.06
25	22.69	0.92	3,5-Dimethoxy-4-hydroxytoluene	168.08
26	24.63	0.55	Hydroquinone, TMS derivative	182.08
27	25.56	2.55	2,3,5,6-Tetrafluoroanisole	180.02
28	26.43	0.69	Phenol, 2,6-dimethoxy-4-(2-propenyl)-	194.09
29	28.62	1.63	(E)-2,6-Dimethoxy-4-(prop-1-en-1-yl)phenol	194.09