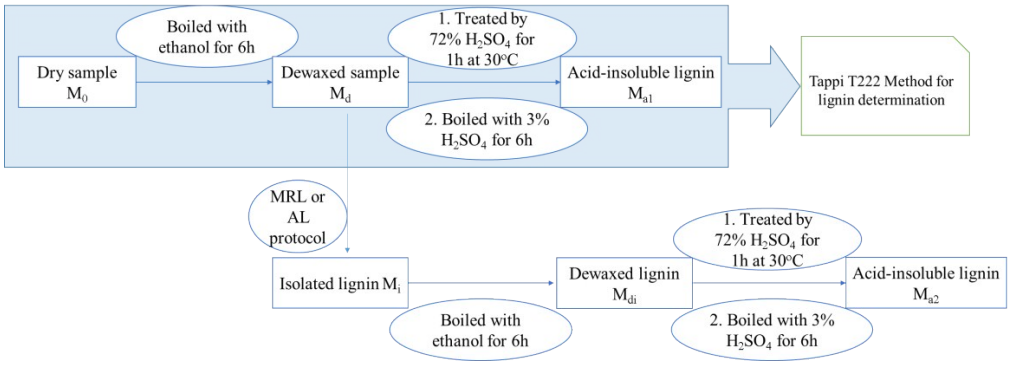
SI Table.1 Proximate and ultimate analysis of feedstocks (wt%)

	Moisture	Dry basis					
□		Ash	C	H	N	S	O[a]
MSP	6.55	1.14	51.79	5.612	0.000	1.295	40.158
WE	4.73	3.67	48.080	5.884	0.291	0.219	41.852
WS	6.13	14.38	44.720	5.390	0.296	0.164	35.049

a. Oxygen=100-Ash-C-H-N-S

SI Table.2 ICP analysis of feedstock ($\times 10^{-2}$ wt%)

	MSP	WE	ST
Na	17.01	<0.01	0.28
Mg	1.39	5.58	7.99
Al	0.61	0.94	1.24
Si	10.49	2.23	10.64
P	1.22	8.30	5.22
K	7.84	30.44	115.42
Ca	18.20	53.17	54.84
Fe	0.52	1.25	2.68
Co	<0.01	0.01	<0.01
Ni	<0.01	0.05	0.03
Cu	0.09	0.10	0.03
Zn	0.33	0.65	0.36



SI Fig. 1 TAPPI T222 method: the determination of purity and yield