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Supplementary Information

Fig. S1. Schematic diagram of the experiment set up

Table S1 Influence of reaction time on convert bamboo to MLA with different heating pro-	ocess.
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Heating	Time	Conv.	MLA yield	Furfurals yield	MLG yield
process	(min)	(wt%)	(wt%) ^b	(wt%) ^c	(wt%) ^d
Conventional	90	82.33	25.34	15.03	12.17
electric	120	80.26	30.45	14.32	9.42
treatment	150	78.45	19.78	13.69	5.67
Microwave treatment	30	82.14	28.54	16.16	13.81
	40	84.11	29.39	18.34	10.22
	50	79.33	20.17	16.92	5.45

^a Reaction conditions: bamboo to methanol ratio of 1:8, 2.5 wt% catalyst, 200 °C.

Table S2 The yields of products from directional liquefaction using etha	nol. '
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Materials	Conv.	ELA yield	Ethyl acetate	Furfurals yield	MLG yield
	(wt%)	(wt%) ^b	yield (wt%)	(wt%) ^c	(wt%) ^d
Bamboo	83.24	27.34	9.27	14.43	9.43
Eucalyptus	80.96	20.45	6.31	11.09	11.65
Poplar	81.14	22.61	5.49	12.12	12.87
Pine	80.02	23.19	7.18	9.45	10.47
Bagasse	85.02	25.42	7.31	13.22	10.24
Straw	79.25	19.33	5.26	10.07	13.31

^a Reaction conditions: biomass materials 2.0 g, ethanol 16.0 g, acid catalyst 0.5 g, 180 °C, 40 min. Biomass samples were irradiated for 5 min under 700 W.



