

**Organic solvents extraction assisted catalytic hydrothermal  
liquefaction of algae to bio-oil.**

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**Table S1** GCMS results of ethanol (RE) oil.

Retention time in GC(min)	Area%	Compound
18.83	1.57	Dodecane
25.26	0.79	3-Tetradecene, (E)-
25.52	2.25	Tetradecane
29.06	0.90	Phenol, 2,4-bis(1,1-dimethylethyl)
29.47	2.13	2(4H)-Benzofuranone, 5,6,7,7a-tetrahydro-4,4,7a-trimethyl-
31.28	1.17	2-Tetradecene, (E)-
31.50	2.49	Hexadecane
34.35	18.53	Heptadecane
36.71	1.07	1-Octadecene
36.89	1.13	Octadecane
37.93	14.26	Phytol, acetate
38.05	1.05	2-Pentadecanone, 6,10,14-trimethyl
38.51	3.61	5-Nonadecen-1-ol
38.97	8.60	3,7,11,15-Tetramethyl-2-hexadecen-1-ol
39.91	0.77	1-Hexadecanol, 2-methyl-
40.92	1.03	Dibutyl phthalate
41.47	19.33	n-Hexadecanoic acid
41.79	1.08	Eicosane
45.01	2.00	Gamolenic Acid
45.20	6.89	9,12-Octadecadienoic acid (Z,Z)-
46.13	2.22	1-Heneicosanol
46.26	0.70	Nonadecane
50.27	0.18	Cyclotetracosane
50.79	0.50	Phenol, 2,2'-methylenebis[6-(1,1-dimethylethyl)-4-methyl-
54.56	0.60	2-Ethylacridine
56.29	5.15	Benzoic acid, 3,5-dicyclohexyl-4-hydroxy-, methyl ester

**Table S2** GCMS results of ethanol (RE) oil with MgSO<sub>4</sub>.

Retention time in GC(min)	Area%	Compound
34.27	14.29	Heptadecane
37.88	9.24	Bicyclo[3.1.1]heptane, 2,6,6-trimethyl-
38.51	2.19	1,2-Dihexylcyclopropene
38.95	4.19	3,7,11,15-Tetramethyl-2-hexadecen-1-ol
41.17	2.31	Ethyl 9-hexadecenoate
41.69	48.40	Hexadecanoic acid, ethyl ester
45.05	8.50	8,11,14-Eicosatrienoic acid, (Z,Z,Z)-
45.44	6.84	Linoleic acid ethyl ester
45.57	1.39	Ethyl Oleate
46.17	2.65	Octadecanoic acid, ethyl ester