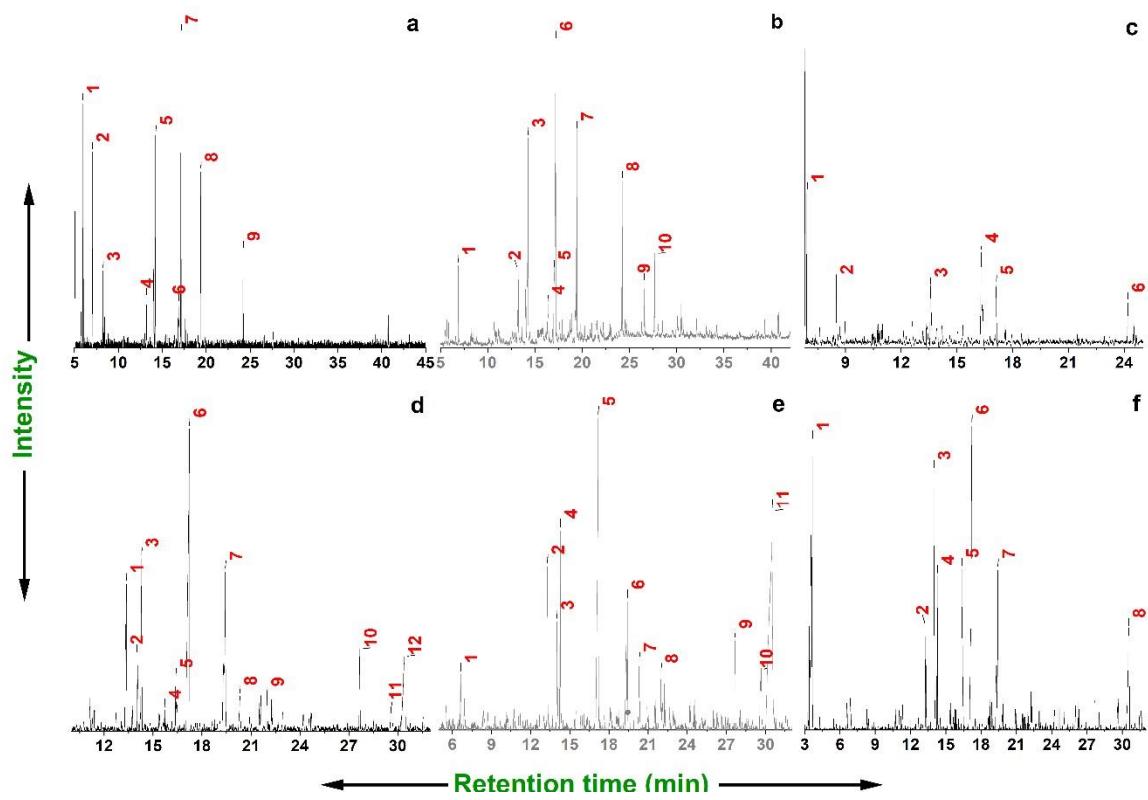


**Figure S1.** GC-MS chromatogram resulting from H-ZSM-5 upgraded bio-oil from Kraft Lignin-Toluene Soluble: (a) 673 K; (b) 773 K and; (c) 873 K--MeOH Soluble; (d) 673 K; (e) 773 K and; (f) 873 K.



**Figure S2.** GC-MS chromatogram resulting from H-ZSM-5 upgraded bio-oil from Spruce (Softwood)  
Toluene Soluble: **(a)** 673 K; **(b)** 773 K and; **(c)** 873 K--MeOH Soluble; **(d)** 673 K; **(e)** 773 K and; **(f)** 873 K