Electronic Supplementary Information

Electrical conductivity of wood sawdust using graphite catalytic coating: Unlocking the microwave-assisted pyrolysis efficiency of lignocellulosic biomass

Florent P. Bouxin, Jiajun Fan, Vitaliy L. Budarin* and James H. Clark*

Green Chemistry Centre of Excellence, Department of Chemistry, University of York, York, YO10 5DD, UK

**Corresponding authors:* florent.bouxin@york.ac.uk, vitaliy.budarin@york.ac.uk

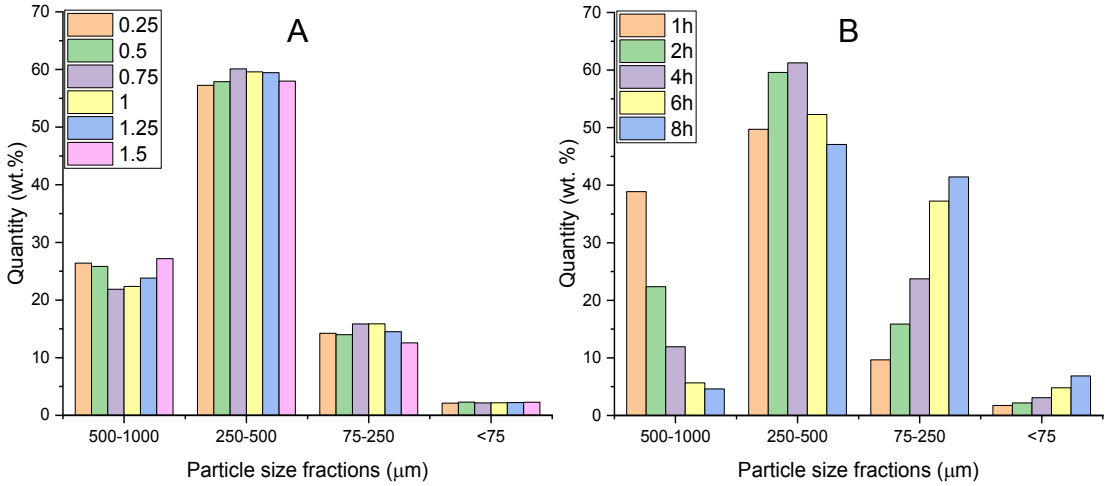

Figure S.1. Particle size distribution of the coated beech sawdust samples as a function of (A) the graphite loading (500-1000 μm initial particle size, 2h ball milling); (B) ball milling duration (500-1000 μm initial particle size, 1 wt% graphite loading)

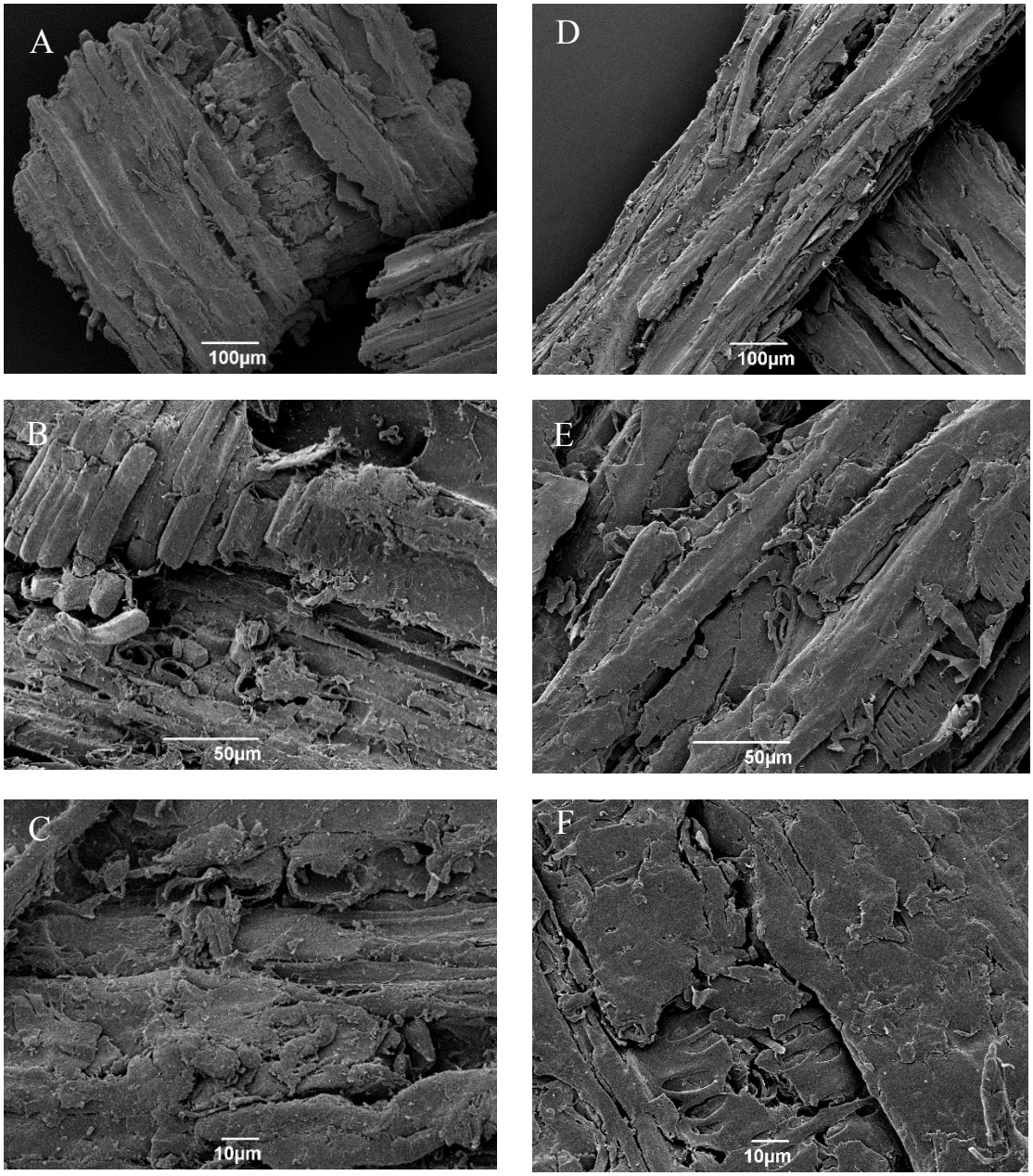

Figure S.2. SEM pictures of ball milled beech sawdust [(A,B,C)-0 wt. % graphite-2h ball milling; (D,E,F)-1 wt.% graphite-2h ball milling]

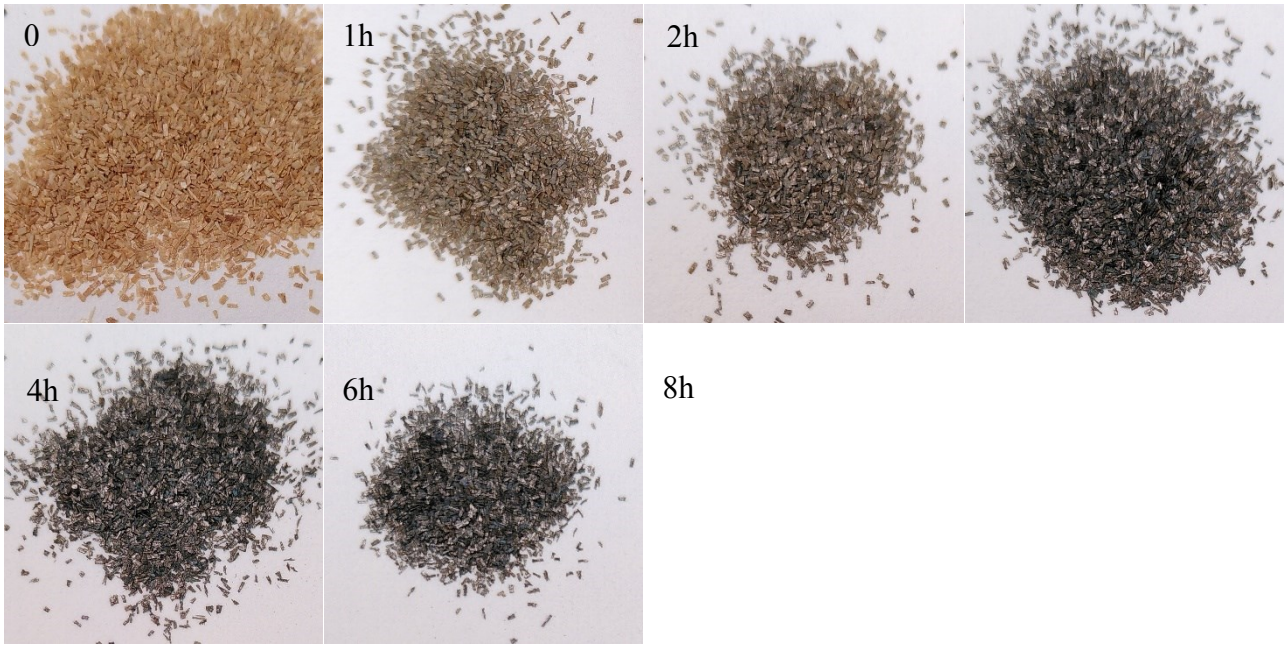

Figure S.3. Pictures of graphite coated beech sawdust (Selected particle size 250 to 500 μm) after 1 to 8h ball milling [Initial particle size 500 to 1000 μm, 1 wt.% graphite] (Pictures taken by Fairphone 3 camera)

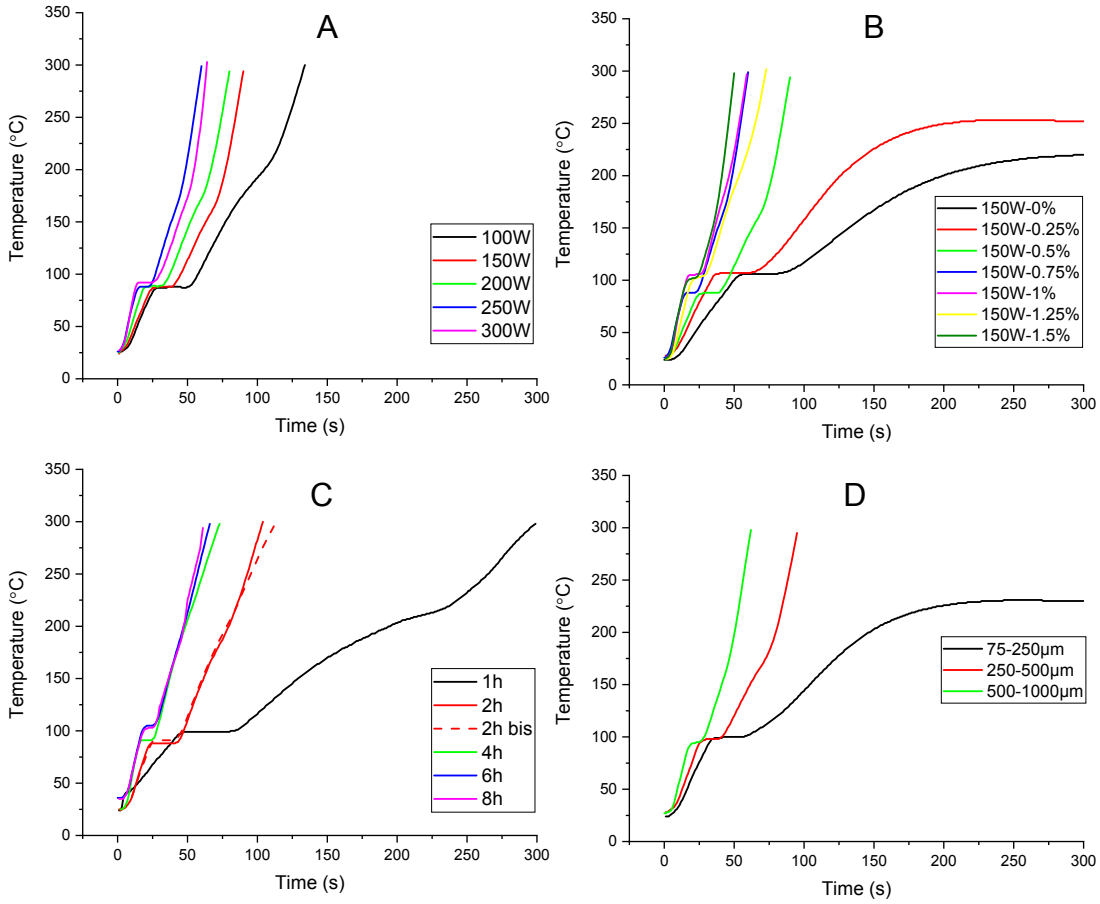

Figure S.4. Temperature profile of the coated beech sawdust pyrolysis as function of the MW power (A), graphite loading (B), ball milling duration (C) and initial particle size (D) [A: 0.5wt.% graphite coated samples (500-1000µm), 2h ball milling; B: Graphite coated samples (500-1000µm), 2h ball milling, 150W; C: 1wt.% graphite coated (selected particle size of 250-500µm), 100W; D: 0.75wt.% graphite coated samples, 2h ball milling, 200