

Interactive comment on “Characterization of hydrochars produced by hydrothermal carbonization of rice husk” by D. Kalderis et al.

D. Kalderis et al.

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Dear Referee, we would like to thank you for your efforts to improve the manuscript. Please find below the response to each specific comment.

1. Materials and Methods: Page 660-661 There was no monitoring of pressure inside the reactor. Given the small headspace allowed (about 5ml in a 25ml capacity), we assumed that the pressure was adequate to maintain water in the liquid state as the temperature was raised. Additionally, it has been proven that pressure has little effect on the conversion of biomass to bio-products and that the re-structuring of the biomass itself does not affect the pressure inside the cell considerably, especially over the long residence times examined here. However, it is within our plans to fit a pressure gauge to the reactor and monitor the exact pressure fluctuations over the 16 hr period of the

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experiment.

2. Analysis and characterization: Page 661-663 We agree with the reviewer that FTIR analysis is helpful in determining the exact composition of hydrochar. We are currently working on hydrochar production for a different biomass and FTIR will be included in the analysis of the products.

3. Page 666, Line 9: Corrected

4. Conversion of biomass to hydrochar and other products is a highly complex process, which is still under investigation. The basic mechanisms and reactions are provided in a comprehensive review compiled by Toor et al., 2011 and were beyond the scope of this study. A paragraph was added in Page 665 – line 29 stating: “Toor et al. (2011) provides a comprehensive review on the basic reaction pathways involved in the hydrothermal conversion of the main biomass components (carbohydrates, lignin, protein and lipids) to bio-products.”

5. Corrected

Interactive comment on Solid Earth Discuss., 6, 657, 2014.