

# Effects of Porous Structure Development and Ash on the Steam Gasification Reactivity of Biochar Residues from a Commercial Gasifier at Different Temperatures

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## Supplementary material

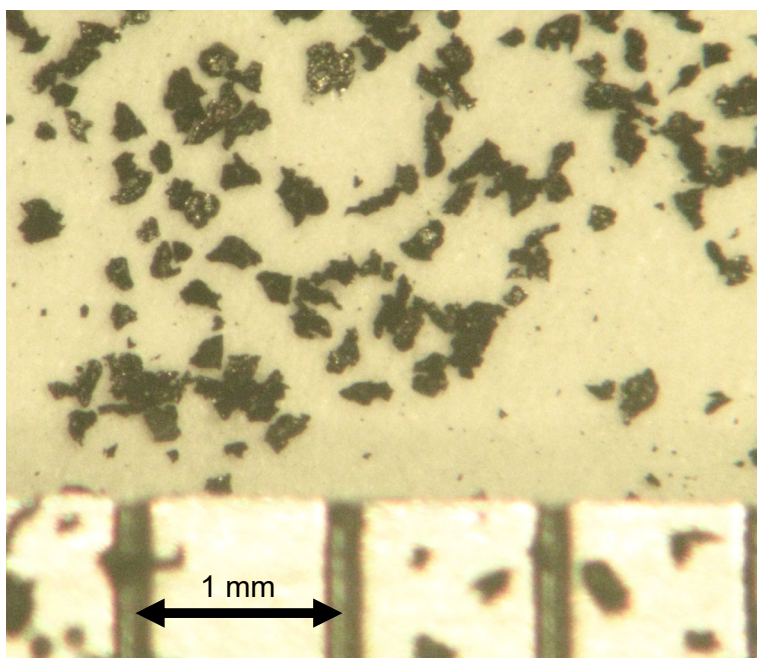


Figure S- 1 Photo of the original biochar used in the experiments.

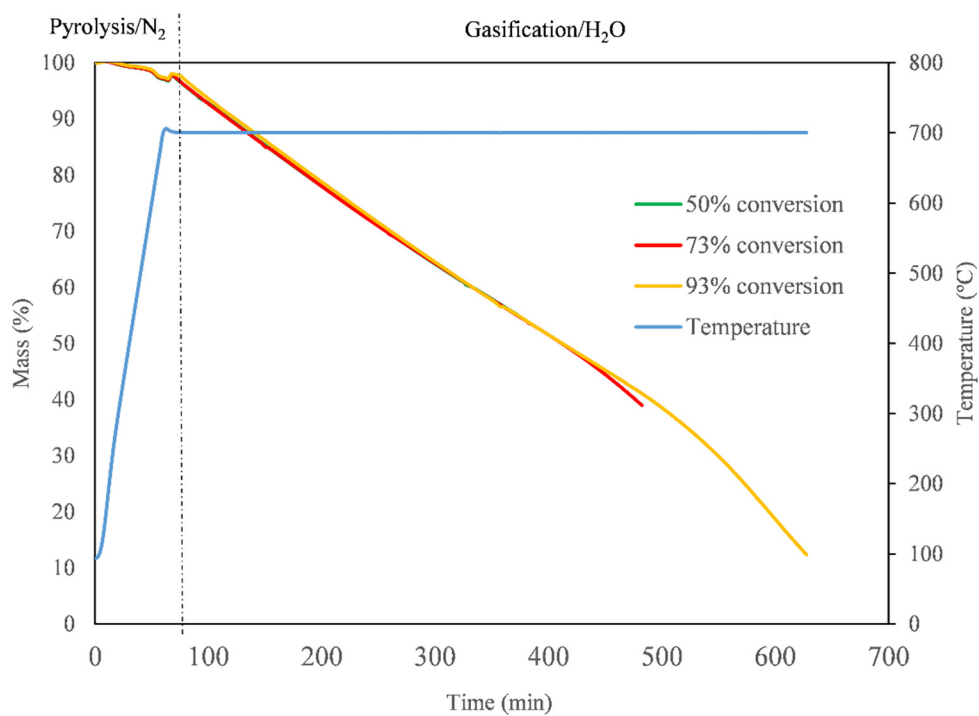


Figure S- 2 Mass loss curves of char versus time and temperature at different conversion rates (gasification temperature 700 °C).

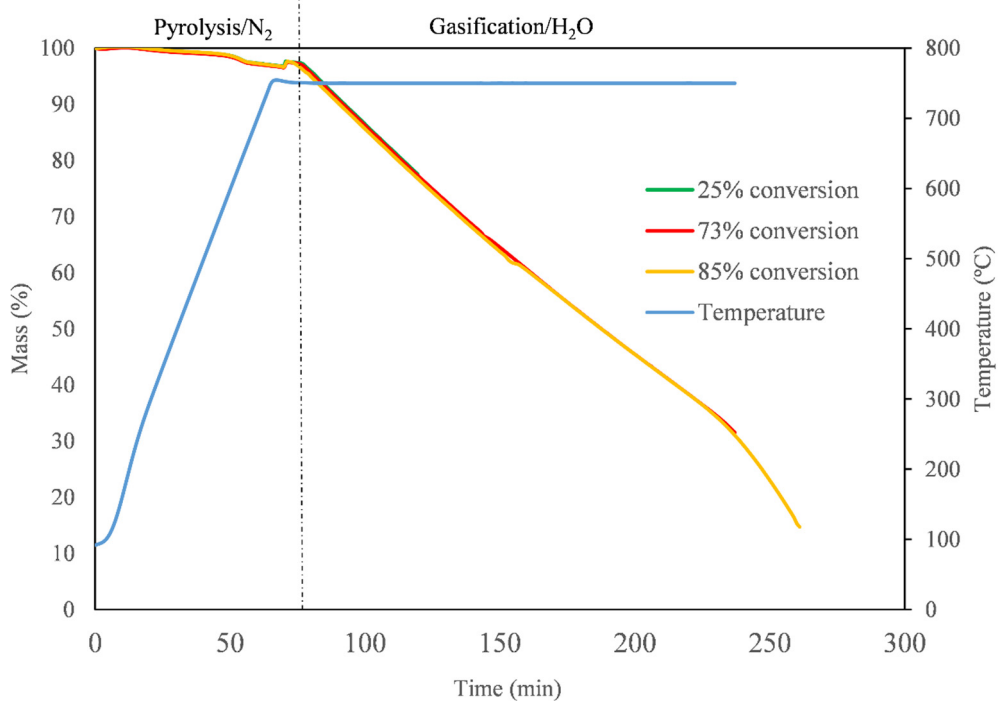


Figure S- 3 Mass loss curves of char versus time and temperature at different conversion rates (gasification temperature 750 °C).

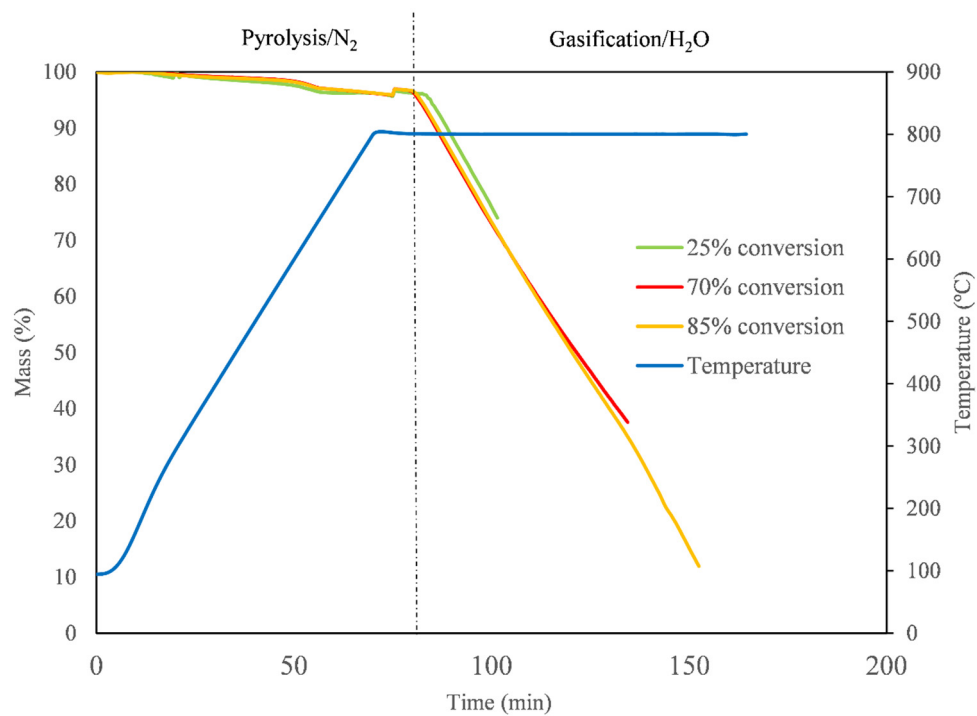


Figure S- 4 Mass loss curves of char versus time and temperature at different conversion rates (gasification temperature 800 °C).

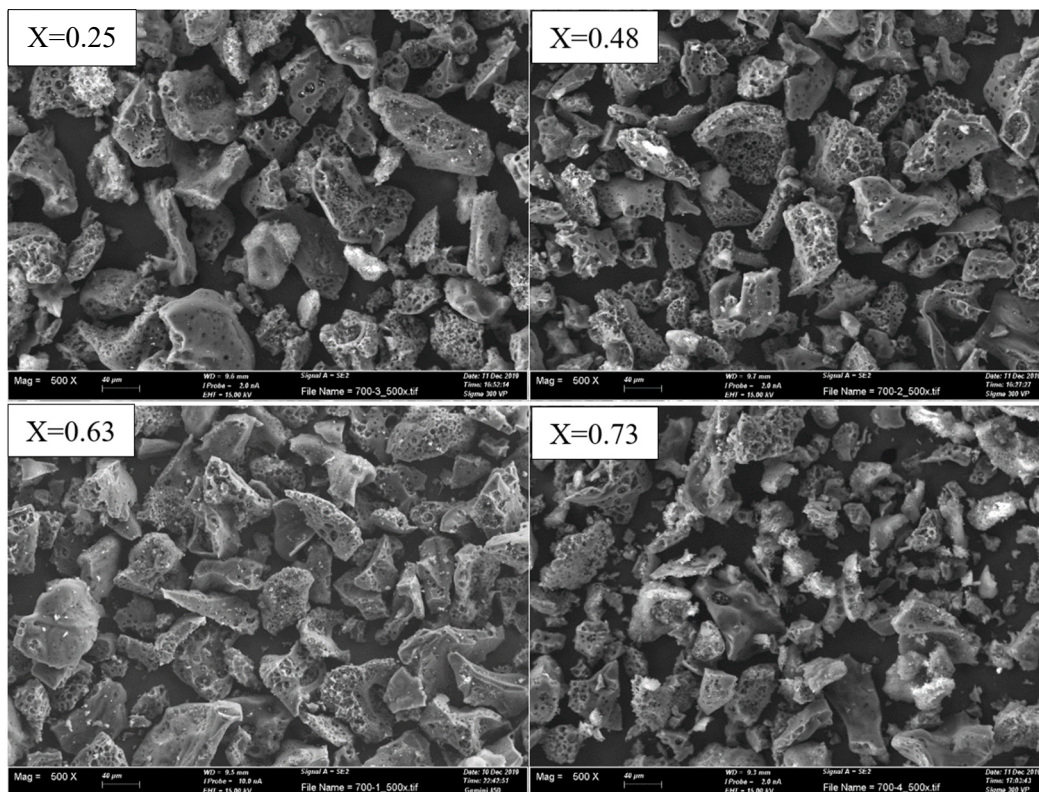


Figure S- 5 SEM images (500×magnification) of char at different carbon conversions in 30% steam at 700 °C.

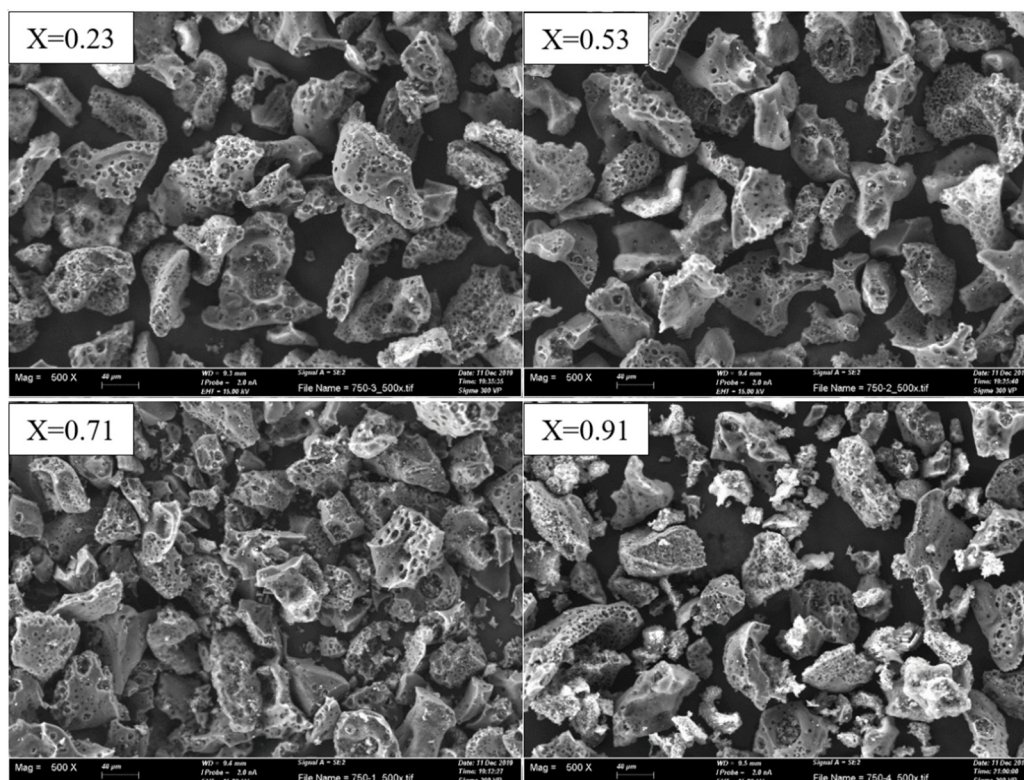


Figure S- 6 . SEM images (500×magnification) of char at different carbon conversions in 30% steam at 750 °C.

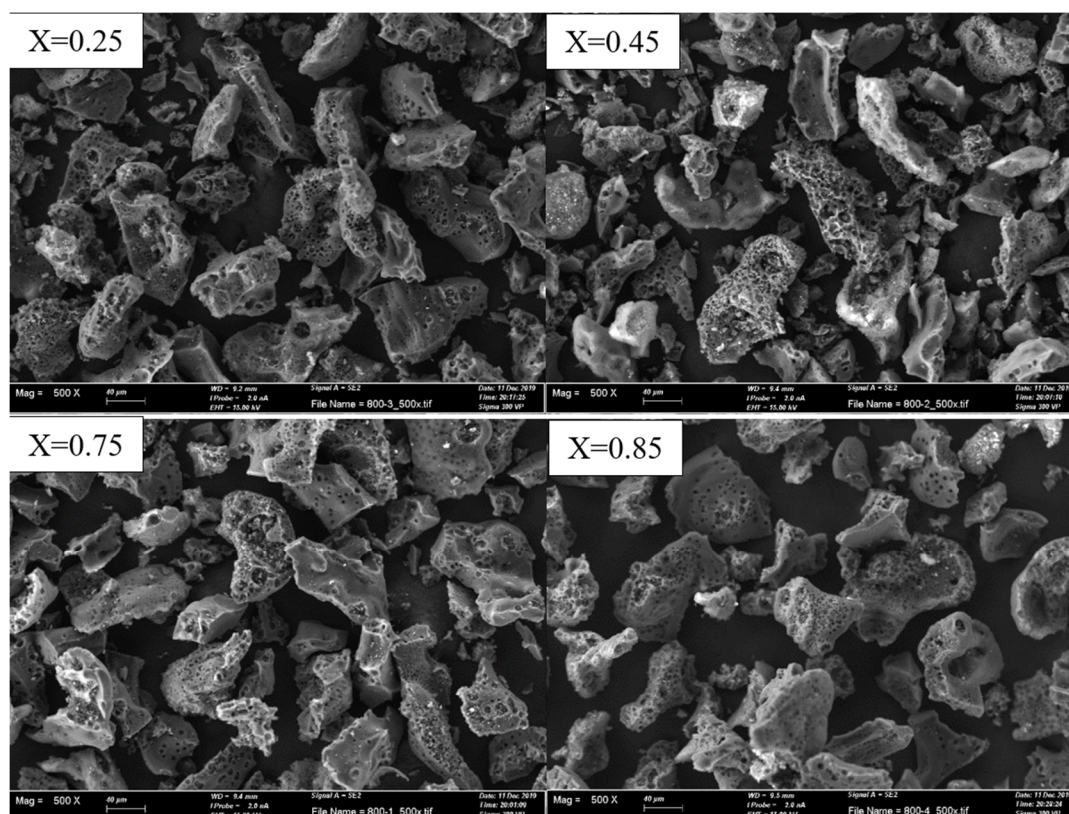


Figure S- 7 SEM images (500×magnification) of char at different carbon conversions in 30% steam at 800 °C.

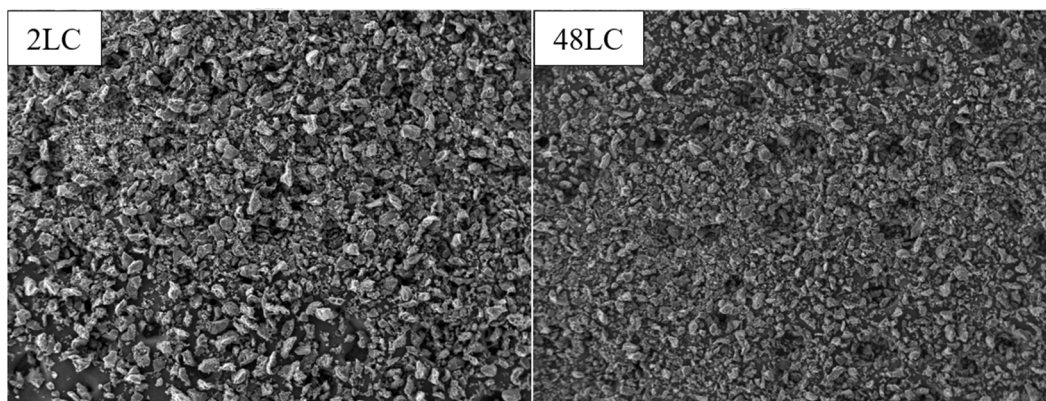


Figure S- 8 . SEM images (100×magnification) of 2LC and 48LC

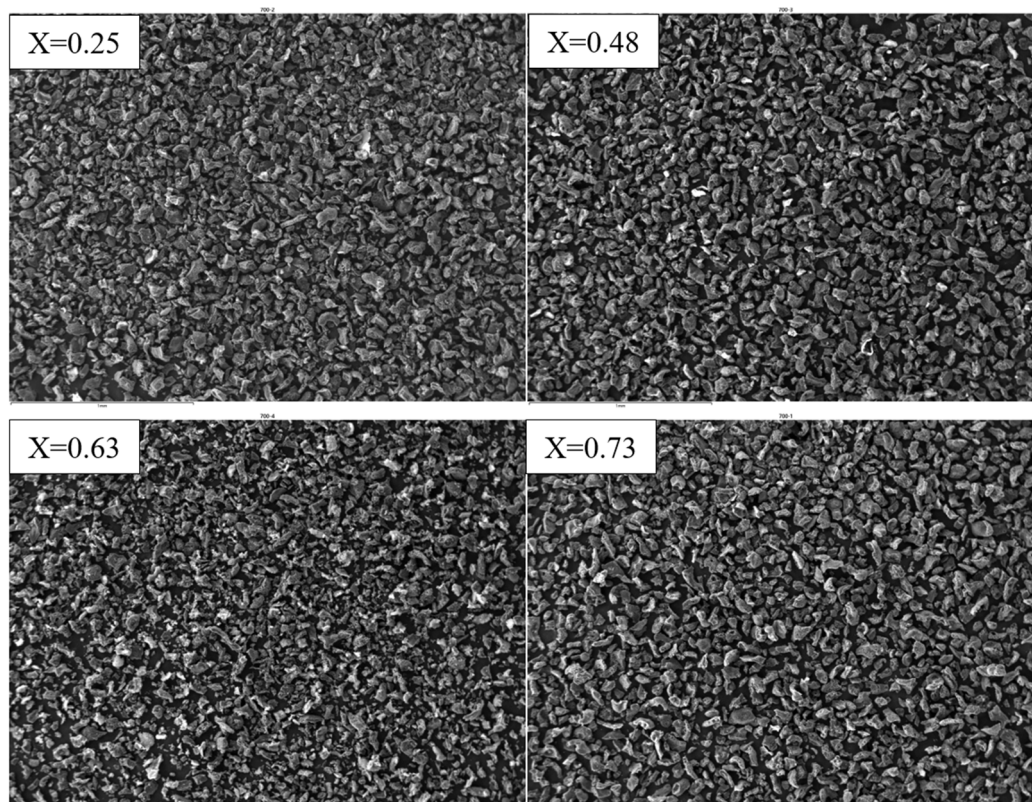


Figure S- 9 SEM images (100×magnification) of char at different carbon conversions in 30% steam at 700 °C.

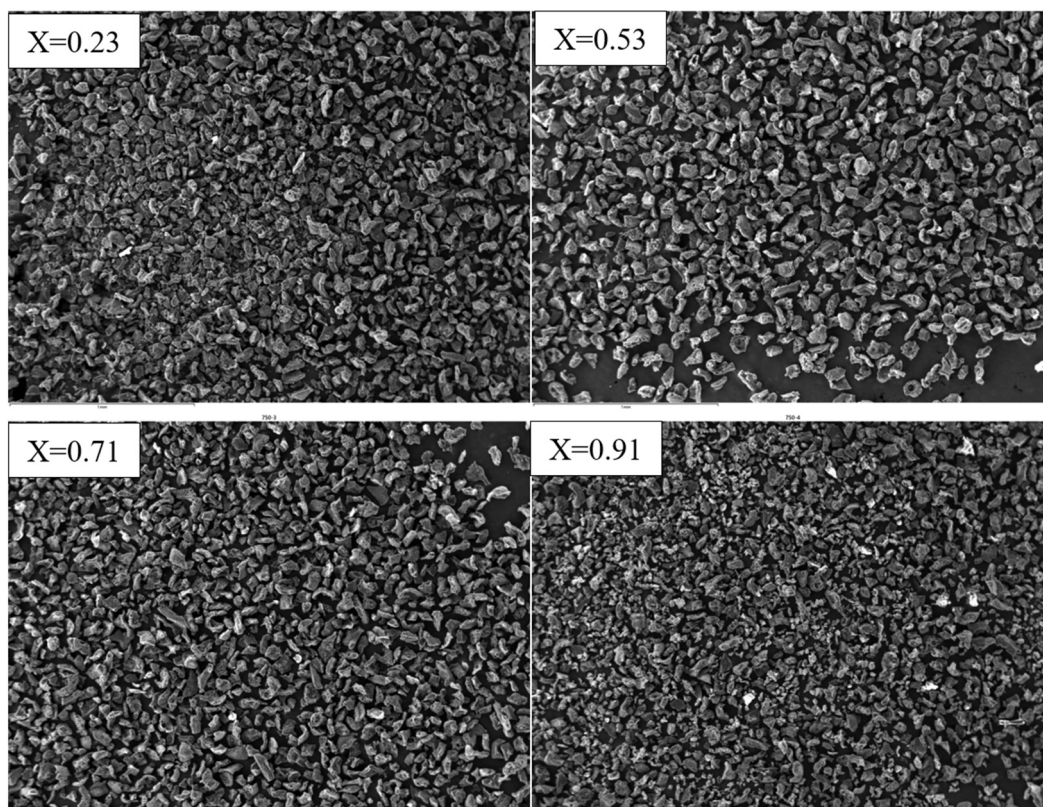


Figure S- 10 SEM images (100×magnification) of char at different carbon conversions in 30% steam at 750 °C.

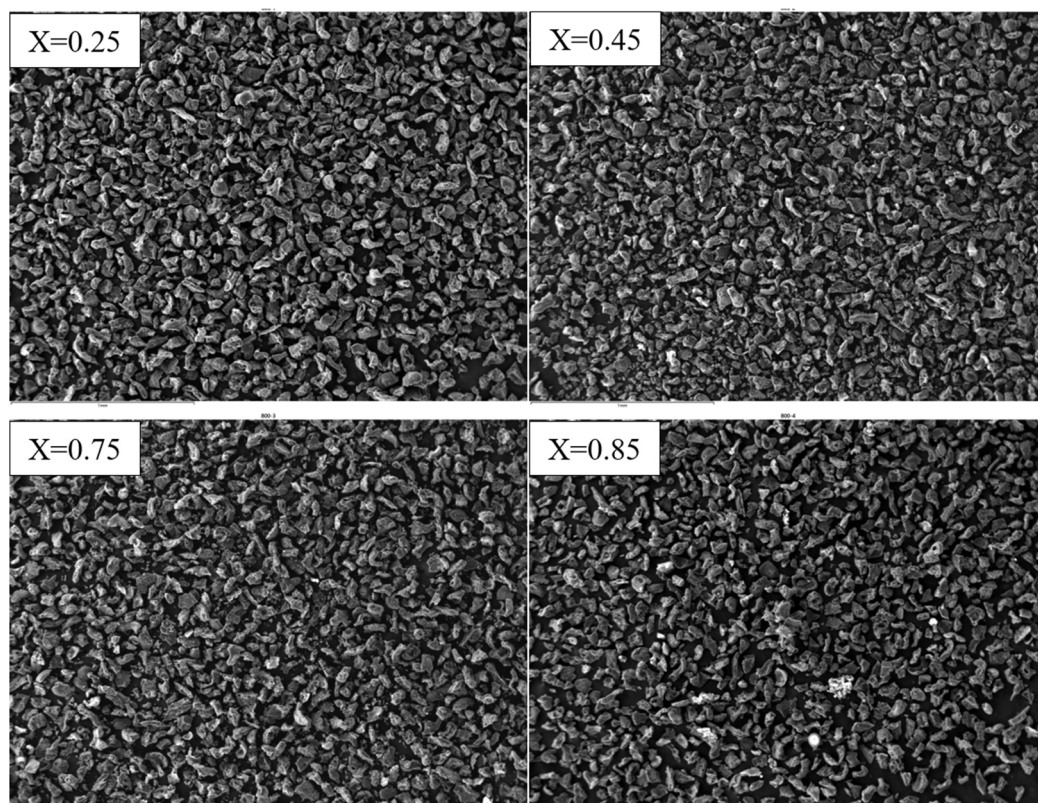


Figure S- 11 SEM images (100×magnification) of char at different carbon conversions in 30% steam at 800 °C.