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VAPOUR PHASE CRACKING OF TAR FROM PYROLYSIS OF BIRCH WOOD

ABSTRACT

The vapour phase cracking of tar from pyrolysis of birch wood (particles, 0.5-1.0 mm) was studied in a thermogravimetric analyser (TGA) and in a coupling of the TGA with a consecutive tubular reactor. The TGA was heated from 100 to 1000°C at a heating rate of 5 K/min in all experiments and the tubular reactor was operated at constant temperatures of 600°C, 700°C and 800°C at different residence times. Kinetic parameters for tar cracking and yield coefficients for the production of different gases from tar cracking were calculated.

KEYWORDS

[wood pyrolysis](#), [tar cracking](#), [secondary reaction](#)

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REFERENCES [view full list]

1. C. Brage, Q. Yu, G. Chen, K. Sjöström, Biomass and Bioenergy 18 (2000) 87.
2. O. Moersch, H. Spliethoff, K. R. G. Hein, Biomass and Bioenergy 18 (2000) 79.
3. P. Hasler, Th. Nussbaumer, Biomass and Bioenergy 16 (1999) 385.
4. M. L. Boroson, J. B. Howard, J. P. Longwell, W. A. Peters, AIChE Journal 35 (1989) 120.
5. J. P. Diebold, The Cracking of depolymerized Biomass Vapors in a continuous tubular Reactor, Master thesis, Colorado School of Mines, 1985.
6. A. G. Liden, F. Berruti, D. S. Scott, Chem. Eng. Comm. 65 (1988) 207.
7. H. N. Stiles, R. Kandiyoti, Fuel 68 (1989) 275.
8. J. A. Caballero, R. Font, A. Marcilla, J. Anal. Appl. Pyrol. 38 (1996) 131.
9. J. Rath, G. Steiner, M. Wolfinger, G. Staudinger, J. Anal. Appl. Pyrol. 62 (2001) 83.
10. M. J. Antal Jr., G. Varhegyi, Ind. Eng. Chem. Res. 34 (1995) 703.
11. I. Milosavljevic, E. M. Suuberg, Ind. Eng. Chem. Res. 34 (1995) 1081.
12. A. Conesa, J. A. Caballero, A. Marcilla, R. Font, Thermochimica Acta 254 (1995) 167.

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13. J. J. M. Órfao, F. J. A. Antunes, J. L. Figureido, Fuel 78 (1999) 349.
14. C. Di Blasi, J. Anal. Appl. Pyrol., 47 (1998) 43.
15. C. Courson, E. Makaga, C. Petit, A. Kiennemann, Catalysis Today 63 (2000) 427.
16. J. Rath, G. Staudinger, Fuel 80 (2001) 1379.
17. K. M. Sundaram, G. F. Froment, Chem. Eng. Sci. 32 (1977) 609.
18. Morf P., Secondary reactions of tar during thermochemical biomass conversion, Dissertation, ETH Zürich, 2001.

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