MECHANISM OF THE THERMAL DECOMPOSITION OF FURAN

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Both furan (C_4H_4O) and furfural (C_4H_3O-CHO) are important products in biomass pyrolysis. We have used a resistively-heated SiC tubular reactor with a 30 microseconds residence time to study the thermal cracking of furan. The decomposition products are identified by two independent techniques: 118.2 nm VUV photoionization mass spectroscopy and infrared spectroscopy. We observe three different thermal dissociation channels leading to: a) CH_3CCH + CO b) HCCH + CH_2CO c) $HCCCH_2$.