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The Effects of Catalysts on the Conversion of Organic Matter and Bio-fuel Production in the Microwave Pyrolysis of Sludge at Different Temperatures

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ABSTRACT: Adding catalyst could improve the yields and qualities of bio-gas and bio-oil, and realize the oriented production. ¹Results showed that the catalytic gas-production capacities of CaO were higher than those of Fe₂O₃, and the bio-gas yield at 800 °C reached a maximum of 35.1 %. Because the polar cracking active sites of CaO reduced the activation energy of the pyrolysis reaction and resulted in high catalytic cracking efficiencies. In addition, the quality of bio-oil produced by CaO was superior to that by Fe₂O₃, although the bio-oil yield of CaO was relatively weak. The light bio-fuel

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