A bench fluidized bed reactor for Cuban biomass pyrolysis

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In Cuba, different types of biomass have been investigated for energy conversion through thermochemical processes into solid, liquid, and gaseous products. Biomass pyrolysis in atmospheric fluidized bed, seem to be an attractive option for the conversion of agricultural residues into pyrolysis liquids suitable for use as alternative liquid fuels in boiler, or as feedstock for recovery of chemicals. A continuous bench fluidized bed pyrolysis with a nominal throughput of 20 kg/h has been constructed and is currently under testing. This paper summarizes the main characteristics of a bench fluidized bed pyrolysis reactor, as well as provides experimental data derived from a cold model, which was constructed and operated for determination of the reactor hydrodynamic behavior.