

PARTICULATE EMISSION FROM THE GASIFICATION OF SOLID WASTES: FEEDSTOCK-DEPENDANT PARTICLE SIZE DISTRIBUTIONS AND CHEMICAL COMPOSITIONS.

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Gasification technologies have been widely employed to produce chemicals and fuels from solid wastes. However, as a technology that has great potential for decentralized, community-based applications, the pollutant emission characterization and management is a must. In this work, we characterize the particulate matters (PM) emitted from the gasification experiments of different types of solid wastes (i.e., food wastes, horticulture wastes, and sludge). The associations between particle size distributions and chemical compositions and the properties of food wastes are explored. Measures towards the reduction of particulate emission from the gasification of solid wastes are recommended. The results of this work could serve as the basis for proposing protective measures against the particulate pollution from gasification technologies.

Keywords: Gasification; Solid Wastes; Particle Emission; Particle Size Distribution; Chemical Compositions.