COMPACTING SOLID WASTE MATERIAL TO FORM NEW PRODUCTS

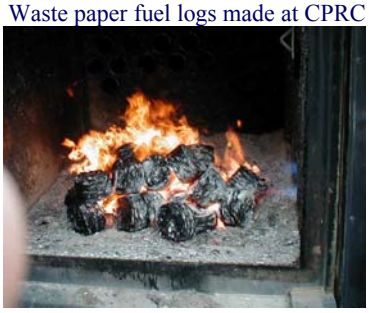
Sponsor: Missouri Department of Natural Resources

Project Scope:

Develop new technology for solid waste compaction to convert low-grade waste paper, plastics, textiles, and flyash in Missouri into useful products.

New technology include preparing the waste material by grinding into proper size distribution, controlling suitable moisture content, avoid using any binder in compaction and densification, identifying the best equipment for grinding and compaction, designing new equipment to improve production efficiency, and analyzing the economic feasibility of using the new technology.

Waste paper fuel logs made at CPRC



Paper logs used as fuel in the outdoor hot water furnace at MU Agronomy Research Center

Objectives:

- Study and establish the best methods to convert combustible Municipal Solid Waste (MSW) into power plant and household fuel, and make flyash which is a coal burning by –product into useful construction materials such as bricks.
- Study the economic feasibility of commercializing the above process.
- Reduce national energy dependence on imported fuel.
- Reduce greenhouse gases (COx, CHx, etc.).
- Save mineral fuel by using more renewable biomass fuel.

Applications:

- The method developed can be used to compact many other combustible waste materials into renewable energy sources. Saw dust, wood mulch, most low-grade waste paper, plastic wrappings and bags, container box have been tested. Corn residual is been tested.
- The compaction process can be used to improve the quality of machine components made from powder metallurgy process, and reduce waste powder material from currently used mechanical press.
- The method can be used to start a new industry making fuel logs, the method use much less thermal and electric energy than currently used palletizing process.

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