

S1007 Feedstock Engineering Proposal

Title:

Investigation of Breakthrough Densification Technologies Using Biomass Grasses as a Test Substance

Overview:

Biomass densification is a major factor that influences the sustainability of numerous feedstock sources. Previous attempts primarily focused on using existing harvest systems to collect and compress biomass with limited success. This proposal is aimed to identify breakthrough densification technologies that identify the biomass as an engineering material to be efficiently designed with specific properties to enable efficient utilization and conversion. Biomass grasses were identified as the test substance because of wide applicability of results to other biomass feedstocks, and the promise of grasses as a prominent feedstock.

Personnel:

		Organization	Expertise
Facilitator/ Contact	Alvin R. Womac	The University of Tennessee	Biomass Failure Strength, Particle Sizing
Co-PI	John Cundiff	Virginia Tech University	Harvest Equipment
Co-PI	Raymond L. Huhnke	Oklahoma State University	Grass Biomass Conversion Processes /Temperate Biomass Grass
Co-PI	Michael Montross	University of Kentucky	Biomass Handling Equipment
Co-PI	Luis R. Perez-Alegria	University of Puerto Rico	Tropical Grasses/ Field Equipment
Co-PI	Shahabaddine Sokhansanj	University of British Columbia/ ORNL	Compaction of Biomass Grinds, Process Modeling
Co-PI	Alvin R. Womac	The University of Tennessee	Biomass Failure Strength, Particle Sizing
Needed Expertise(s)			
Chemical conversion – typical feedstock property requirements – grasses			
Microbiological conversion – typical feedstock property requirements – grasses			

Anticipated Program Deadline(s): Dec 1 – Mar 1