



Yi Li, born in Wuxi, China, obtained his Bachelor of Engineering (B.Eng) in Bioengineering from Jiangnan University, China and Bachelor of Applied Science (B.A.S.) in Life Sciences from HAN University, Netherlands. During the study in the Netherlands, he finished two half-year internships in Medical Microbiology Department, Radboud University Nijmegen Medical Center and Medical Microbiology Department, Leiden University Medical Center. In fall 2011, he joined graduate program in Agricultural and Biological Engineering, Purdue.

# Agricultural & Biological ENGINEERING

## Thesis Defense

**Speaker:** Yi Li

**Title:** Drum Agglomeration of Corn Stover and Corn Products from Bioprocessing

**Major Professor(s):** Dr. Klein Ileleji

**Date:** Tuesday, July 02, 2013

**Time:** 2:00 PM

**Location:** NLSN 2187

### Abstract:

Corn steep liquor (CSL) and corn molasses (CM) are common condensed fermented corn extractives from wet-milling ethanol plant. The high nutrient content makes the two coproducts a good choice for animal feed. However, transportation and handling of the liquids coproducts are also difficult. Animals are even unable to eat liquid feed efficiently. A lab scale drum agglomeration process was developed to produce granules of corn stover with the liquid coproducts, which improved handling properties of both corn stover and liquid coproducts. Drum agglomeration is a commonly used densification method, in food and pharmaceutical industry, to produce uniform spherical particles. Kinetics of corn stover agglomeration in a rotary drum must be properly understood in order to produce spherical pellets of corn stover of a given granule size and narrow size distribution which would promote effective drying and produce durable pellets. This thesis will discuss the results from an investigation of corn stover using a bench scale rotary drum for agglomeration and drying processes. The investigation will highlight the importance of process variables and drying parameters on the agglomeration behavior of corn stover and the improved physical and handling properties of agglomerated corn stover.