Subject: PG Elective course for Environmental Science/biological science/chemistry/Agriculture
Course: Biomass characterization

Development Team

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Module Title: 8. Biomass recalcitrance

Id:BL/LHAM/8

Pre-requisites: Structure of plant cell wall, Lignin in biomass, Lignocellulose, Recalcitrance.

OBJECTIVE: The major objective of this module is to study the plant cell wall complexity and the major factors causing the inherent resistance of wall degradation.

KEYWORDS: Recalcitrance, Lignocellulose, Cross-linkage, Pretreatment, Biofuel, Saccharification

OUTCOME: This module will help students to understand different factorscausing the biomass resistance to degradation thereby adversely affecting biofuel production.

8.1 Biomass recalcitrance

The resistance of lignocellulosic biomass to enzymatic saccharification is generally termed as biomass recalcitrance. Rigid and complex structure of plant cell wall consisting of mainly cellulose, hemicellulose, lignin and their diverse interactions accounts for the recalcitrance of feedstocks.