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

Course: Biomass characterization

Development Team

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Module Title : 9 Lignin: Structure and chemistry

Id :LN/LSFR/9

Pre-requisites: Composition of plant cell wall; carbohydrate polymer, Glycosidic linkages, primary structure of lignin.

OBJECTIVES: To study

- the structure of lignin and the process of lignification in plants
- how lignin imparts biomass recalcitrance

KEYWORDS: Lignin, monolignols, biomass, linkage, pretreatment, lignin-carbohydrate complexes

OUTCOME: This module will help students to understand the structural complexity of lignin which is the major hurdle in second generation biofuel production. A detailed knowledge on the lignification process and lignin structure will help to reengineer the feedstocks and to design improved pretreatment methods for enhanced biofuel production.

9. 1 OVERVIEW: WHAT IS LIGNIN?