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(57) Abstract :
[045] The present invention provides a sustainable and efficient process for extracting high-purity lignin from rice husk and stalk biomass through a mild-temperature treatment using organic acids and a biocompatible solvent system. The method integrates controlled pretreatment, optimized solvent–biomass interaction, and selective precipitation to produce structurally intact lignin suitable for industrial applications such as biopolymers, adhesives, coatings, and value-added chemicals. The system further enhances resource utilization through energy-efficient operations, reduced chemical load, and environmentally responsible waste handling. This invention addresses the limitations of conventional high-temperature chemical pulping methods by offering a greener, safer, and more economical alternative for lignin recovery from abundant agricultural residues. Accompanied Drawing [FIGS. 1-2]

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