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Lignin Extraction from Biomass Resources using an Efficient and Cost-Effective Method

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Abstract—Biomass lignin has long been recognized as a promising renewable feedstock for the production of valuable aromatic compounds. Lignocellulosic agriculture produces a lot of biomasses all around the world. It offers a lot of potential for making chemicals and biomaterials out of renewable resources. because its components may be used to make several useful goods for a lower cost After cellulose, lignin is the second most common natural polymer, accounting for 10 to 25% of total lignocellulosic materials. As a result, lignin's physical and chemical properties vary depending on the source and extraction process. Because lignin is the most abundant natural source of aromatics. The objective is to obtain lignin from biomass (walnut shells, almond shells, neem, and babool trees). The amount of lignin in biomass is extremely high. Biomass has been established as having). The lignin was washed and dried to remove impurities. Walnut shell lignin has a high production and a wide range of uses. As a result, it's crucial to know how biomass husk lignin is structured and how different isolation processes affect it. This research explains how lignin is extracted from biomass. The extraction of lignin using alkali is detailed, as well as the acid properties of the extracted lignins. The NaOH extraction approach at 150^0C was the most convenient due to the small amount of condensed lignin produced.

Keywords—Lignocellulose Biomass, Lignin, Green Biotechnology, Environmentally Friendly, Cellulose, Renewable Resource