

Lignin polymer field of application

Lignin and cellulose and hemicellulose constitute the main component of plant skeleton . In nature after cellulose, lignin is the second largest reserves of natural organic matter . Human use of cellulose for several thousand years of history , but has not been a lot of lignin , widespread use . While people in the use of cellulose , lignin produces a lot of waste , not only a waste of resources , but also seriously pollute the environment. Of papermaking wastewater accounted for 30% of the country's industrial wastewater [1] , and has become the first industrial wastewater control object , papermaking wastewater pollutants mainly lignin, therefore , in terms of resource utilization , or from the perspective of environmental protection of lignin research, development and utilization are very important.

Half a century, the United States , the former Soviet Union, Japan and other countries and some European countries conducted extensive research on lignin , published many papers and patents , especially the United States in the development and utilization of lignin has accumulated a wealth of experience, but also the formation of many types of lignin products , mainly used for rubber reinforcing agent, concrete water reducer , oil field chemicals , etc., and to obtain a higher economic efficiency. Since the 1990s , the use of the basic ideas of lignin slight change , many experts pay more attention on the development of lignin -based synthetic polymers , synthetic resins , surfactants and adhesives and other products. Prior to the synthesis reaction to form the first modified lignin more reactive groups, i.e. oxidation (formation of new carbonyl group or a phenolic hydroxyl group) , acylation (acetic acid, formic acid) , alkylated (hydroxymethyl benzene methyl , methylation) , then with several monomer