Lignin graft copolymerization of acrylic monomer -1

Lignin monomer vinyl radical graft copolymerization, the most studied is the reaction of lignin and acrylamide because these monomers acrylamide maximum activity, the use of a cerium salt initiator, H2O2Fe(II), potassium permanganate, persulfate, and γ rays. 0.001mol/LNaOH dissolved lignin solution, adjusted with 5% H2SO4 to pH 8, concentration of 1g/L, with ceric ammonium nitrate as an initiator, and copolymerized acrylamide. They found that the grafting reaction product, relative molecular mass less than 50,000 parts significantly reduced, more than 100,000 parts increased significantly, almost no less than 5000 parts of the graft reaction can only generate short-chain, the relative molecular mass of each segment molecules also varies considerably; from scanning electron microscopy (SEM) shows the surface of the grafted products mesh structure exist, but the lignin ratio, has been basically no larger mesh, and the mesh is vague.

Of lignin sulfonate and acrylamide or acrylic acid graft copolymerization reaction conditions: lignin sulfonate 0.5g (7.35 \times 10^{-4}mol/L), the monomer acrylic acid 2.5mL (0.72mol/L) or acrylamide, 2.5g (0.70mol/L), ferrous chloride 18.5mg (2.95 \times 10^{-3}mol/ L), hydrogen peroxide 20mg (1.18 \times 10^{-2}mol/L), the reaction medium 50mL, reaction temperature of lignin sulfonate - acrylic system is 30 °C, the lignin sulfonate - acrylamide system is 50 °C, reaction time is 2h. Extracted with ethanol homopolymer of acrylic acid, and then extracted with methanol and the copolymer, the lignin sulfonate - acrylamide reaction, unreacted lignosulfonate with dimethyl formamide extraction.

MozeA, also studied the lignin and acrylamide, acrylic acid graft copolymer, the choice of CaCl2-H2O2 as initiator system, and effects of reaction temperature, the amount of monomer and lignin monomer ratio. H2O2-Fe(II) is the most commonly used initiator in the graft copolymerization, ferrous ion and hydrogen peroxide form hydroxyl radicals and iron ions, hydroxyl free radicals and the lignin aromatic vinyl monomer graft copolymerization, and also occur ethylene monomer itself polymerized. In such initiator systems, to achieve a high yield and conversion of lignin, however, a homopolymer of acrylic monomer is 50% to 60%.