

Controlled Synthesis of Water Soluble Polymers

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Imine formation is an easy condensation between amino and aldehyde functionalized monomers to give polymers with tunable properties. Amino and aldehyde functionalized monomers were reacted to form water soluble polymers for potential use as hole injection layers.

Reactions were carried out at different concentrations to correlate concentration with molecular weight. Polymers were characterized by UV-Vis, fluorescence, and phosphorescence spectroscopies, as well as thermal gravimetric analysis, light scattering, cyclic voltammetry, and differential scanning calorimetry.

A model trimer was synthesized to decipher the polymer properties, and was further analyzed with laser flash photolysis.