Polymeric supports with amino groups from halogenoacetylated styrene/divinylbenzene copolymers.

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Streszczenie

The introduction of amino groups to halogenoacetylated styrene/divinylbenzene (St/DVB) expanded gel or porous copolymer (2% or 10% DVB) with ethylenediamine (EtDA) or hydrazine (H) was carried out as a reductive or nonreductive amination. It has been found that the reductive amination in the presence of $NaBH_3CN$ is more effective than aminolysis without the reducing agent at room temperature. The amino groups were transformed to guanidyl ligands using thiourea/ethyl iodide mixture. Obtained supports with Schiff base bonds and guanidyl ligands after complexing Cu(II) ions are useful as oxidation catalysts. Their catalytic activity was tested in the model reaction – oxidation of hydroquinone to *p*-benzoquinone or 2,5-di-*tert*-butylhydroquinone to 2,5-di-*tert*-butylbenzoquinone. The expanded gel catalysts with guanidyl groups (ethylenediamine modification) showed the highest activity. EPR investigation on this group of catalysts indicated higher amounts of nitrogens in Cu(II) coordination sphere and formation of N_3O complex between three amino nitrogens and water oxygen. The catalysts with aminoguanidyl groups (hydrazine modification) were characterized by low catalytic activity. It was a result of increase in intra and intermolecular crosslinking.

Adres publiczny

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