

결합제로서 가능성 있는 새로운 작용기를 갖는 Aminosilane 제조에 관한 연구(I)

A Study on the Preparation of New Functionalized Aminosilanes as a promising coupling agent(I)

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Michael Reaction을 이용하여 상업적으로 이용 가능한 APS(3-aminopropyltrimethoxysilane)과 AEAPS(N-[3-(trimethoxysilyl)propyl] ethylenediamine)을 다수의 Michael acceptor(ethyl acrylate, acrylonitrile, acrylamide, 2-cyanoethyl acrylate, 2-hydroxyethyl acrylate 그리고 3-(trimethoxysilyl)propylmethacrylate)와 반응시켜 10종류의 aminosilane ([3-(N-2-carboethoxyethyl)aminopropyl]triethoxysilane, [3-(N-2-cyanoethyl)aminopropyl]triethoxysilane, [3-(N-di-2-carboethoxyethyl)aminopropyl]triethoxysilane, [3-(N-di-2-cyanoethyl)aminopropyl]triethoxysilane, [3-(N-2-cyanoethoxypropionyl)aminopropyl]triethoxysilane, [3-(N-di-2-cyanoethoxypropionyl)aminopropyl]triethoxysilane, [3-(N-di-2-hydroxyethoxypropionyl)aminopropyl]-triethoxysilane, [3-(N-2-amidoethyl)aminopropyl]triethoxysilane, [3-(N-(N-di-2-cyanoethyl)ethyl)aminopropyl]triethoxysilane, [3-(N-(3-trimethoxy-silylpropyl)-2-methylpropionyl)aminopropyl]triethoxysilane 등을 35~70% 수율로 제조하였으며, 이들의 구조는 $^1\text{H-NMR}$ 과 FT-IR spectroscopy를 이용하여 확인하였다.