NEW SYNTHESES AND REACTIONS OF SOME QUINONEDIIMINES

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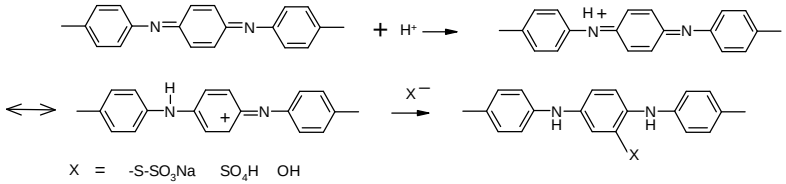
On the base of the scheme of oxidative condensation of p-phenylenediamine (PPDA) new method for the synthesis of 1,4-disubstisuted quinonediimines have been worked out [1, 2]. This method provides possibilities for the synthesis of different polymers and oligomers. New semiconducting electroactive, processable and soluble polymers and oligomers have been obtained on the base of different diamines by the new method of oxidative condensation. So the universality of this method has been proved. Particularly, poly(1.4-benzoquinonediimine-N,N'-diyl-1,4-phenylene) (PBQIP) and N,N`-di(4-aminophenyle)-1,4-benzoquinonediimine had been synthesized by this method. For the first time we prove that obtained compounds, that contain 1.4-disubstituted quinonediimine groups, in terms of their high reactivity, can participate in 1.4- addition Michael reaction with different compounds i.e. with sulfuric acid, thiosulphate, water



The reaction processing has been proved by H^1 NMR, UV spectra and elemental analysis data of the model compounds of the polymers. Elemental analysis data were confirmed the presence of i.e. thiosulphate and sulphate groups in polymer, also. Using UV spectral data dependence of conversion percentage on different reaction conditions was established.

References

[1] A.H. Durgaryan, N.A. Durgaryan, R.H. Arakelyan, N.Sh. Martikyan. Method for synthesis of 1,4-quinonediimine.Patent Armenia, 2849, 25.06 2014.
[2] A.H. Durgaryan, R.H. Arakelyan, N.A. Durgaryan, oxidative polymerization of p-phenylenediamine, Russian J Gen Chem, 2014, 84, 1095