

# Synthesis, characterization and electrical properties of dihalogenated polyanilines

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## Abstract

Poly(2,5-dichloroaniline), poly(2,3-dichloroaniline), poly(3,5-dichloroaniline), poly(2,5-dibromoaniline) and poly(2,6-dibromoaniline) have been synthesized from dihaloanilines in protic and aprotic media with different oxidizing agents, such as copper perchlorate, potassium dichromate and potassium permanganate. Each polymer is characterized by elemental analysis, IR and UV-Vis spectroscopy, scanning electron microscopy (SEM) and conductivity measurements. To obtain the doped polymers, they are treated with inorganic acids and then their electric properties determined. The use of different oxidants allows the obtention of polymers with different redox states which, in some cases, present semiconducting properties and are soluble in methanol and acetone. For the sake of comparison of the electrical and structural properties of the new polymers, polyaniline (PANI) has also been synthesized in a manner analogous to the poly(dihaloanilines).

## Keywords

Poly(dihaloanilines) synthesis, Polyaniline, Redox states, Electric properties of polyanilines.