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Electrochemical Amination. Selective Introduction of Two Amino Groups into an Aromatic Ring

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Abstract—Indirect cathodic amination of anisole via a Ti(IV)–NH_2OH system in aqueous solutions of sulfuric acid is studied. The major products of the radical cation substitution in these media are *para*- and *ortho*-anisidines and 4-methoxy-1,3-phenylenediamine. The most efficient electrochemical process takes place in 10–12 M H_2SO_4. Under these conditions, complete conversion of the source of amino radicals is observed, and the total current yields, which correspond to the yields per hydroxylamine, reach 60%.

Keywords: cathode, Ti(IV)/Ti(III) mediator system, hydroxylamine, anisole, radical cation aromatic substitution, 4-methoxy-1,3-phenylenediamine

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