

Russian Journal of General Chemistry 2000 vol.70 N6, pages 879-884

Electrochemical oxidation of aryldisilanes

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Abstract

Oxidation of disilanes containing at least one aromatic substituent at the silicon atom involves reversible electron transfer with formation of radical cations of different stabilities. The subsequent transformations of the radical cations are governed by the possibility of charge delocalization over the developed HOMO and the presence of a good leaving group. Two nitroaryl fragments in the disilane molecule destabilize this orbital, so that for bis(*p*-nitrophenyl)tetramethyldisilane the dissociative electron transfer becomes energetically preferable over the step process, and the reaction involves no radical-cation intermediate.
