

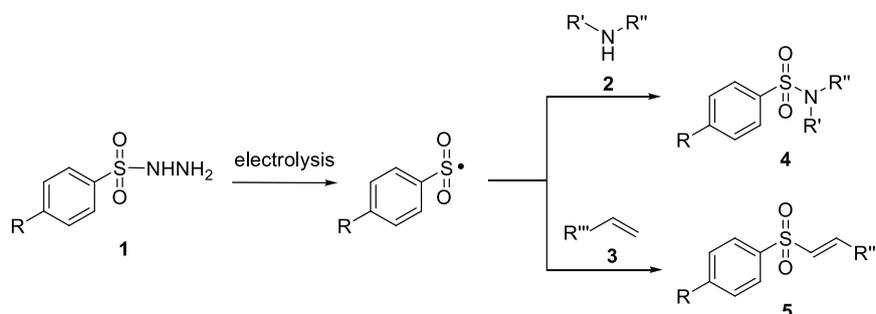
Oxidative transformations of sulfonyl hydrazides under the action of electric current

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In recent decades, in order to obtain structures with carbon-sulfur and nitrogen-sulfur bonds, actively used as antibacterial, anti-inflammatory and antitumor drugs, oxidative strategies are finding ever-widening application. The main reasons for the rapid development of this area are a wide scope of substrates used and mild reaction conditions of such processes. Sulfonyl hydrazides in such transformations are widely applied as S-reagents: sulfonyl radicals, entering into various oxidative processes, are generated from them under the action of a wide range of oxidants [1]. Electric current is actively used to conduct redox processes involving organic compounds. This is due to its availability and low cost, the variety of electrochemical reactions mechanisms, as well as no need for disposal of waste, inevitably generated in the case of chemical reagents [2].

We have carried out the oxidative functionalization of amines **2** and alkenes **3** under the action of electric current with the use of sulfonyl hydrazides **1** for the first time. As a result, sulfonamides **4** and vinyl sulfones **5** were obtained in 25-95% yields respectively (Scheme 1).



Scheme 1

Halides were used as supporting electrolytes and redox catalysts. The processes are conducted in an unseparated electrochemical cell, which allows one to achieve high current densities, using electrodes made of inexpensive materials: a graphite anode and an iron cathode [3, 4].

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