THE PROBLEM OF REGIOSELECTIVITY IN THE CHEMISTRY OF NITROTHIOLENE-1,1-DIOXIDES.

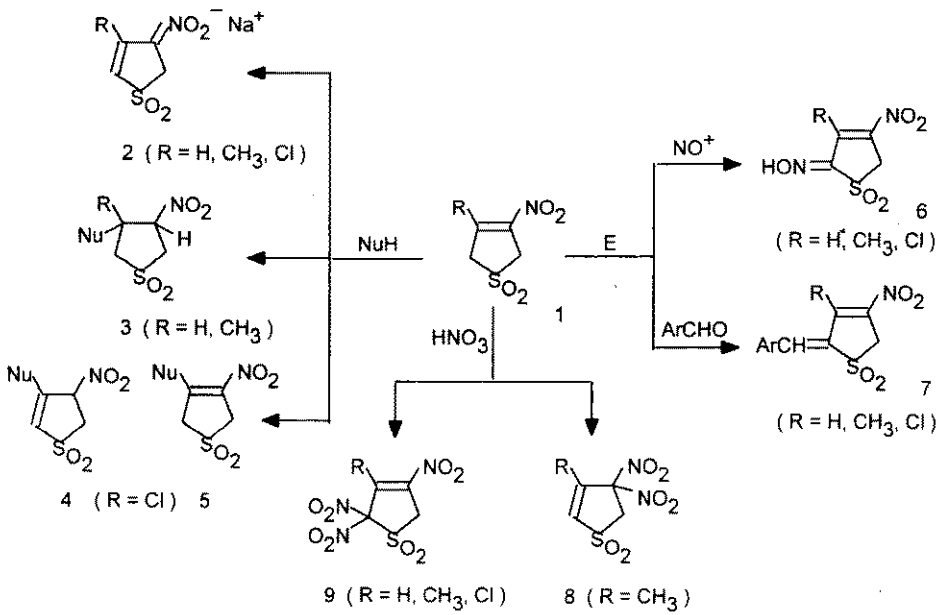
Berestovitskaya V.M., Efremova I.E., Khlytin A.L., Trukhin E.V.
State Pedagogical University of Russia named after Gertsen,
St.Petersburg, Russia

Nitro- group containing thiolene-1,1-dioxides (1) are the perspective objects for the investigation of regioselectivity problem in the series of compounds with several competative reaction centres.

Thus, the reactions with nucleophilic reactants proceed along two competative directions: high basic reactants (Nu = CH_3O^-, $EtNH_2$) form nitronates (2) through the deprotonation of methylene group; soft nucleophiles (NuH = $ArNH_2$, ArSH, $ArNHNH_2$, piperidine) attack the activated double bond to form addition products (3) or addition-elimination products (4,5).

The interaction between nitrothiolene-1,1-dioxides (1) and electrophiles (nitrosation, condensation with aldehydes) proceeds through the attack of C^2-centre with the formation of oximes (6) and s-trans fixed dienes (7) respectively.

Under homolytic reaction conditions diluted HNO_3 nitrates compounds (1) at C^2- and C^4- centres depending on the conditions with formation of polynitrothiolene-1,1-dioxides (8,9).



High reactivity of nitrothiolene-1,1-dioxides (1), their sensitivity to the reactant nature and the reaction conditions allows to consider them to be convenient synthones for the synthesis of a big number of various compounds.