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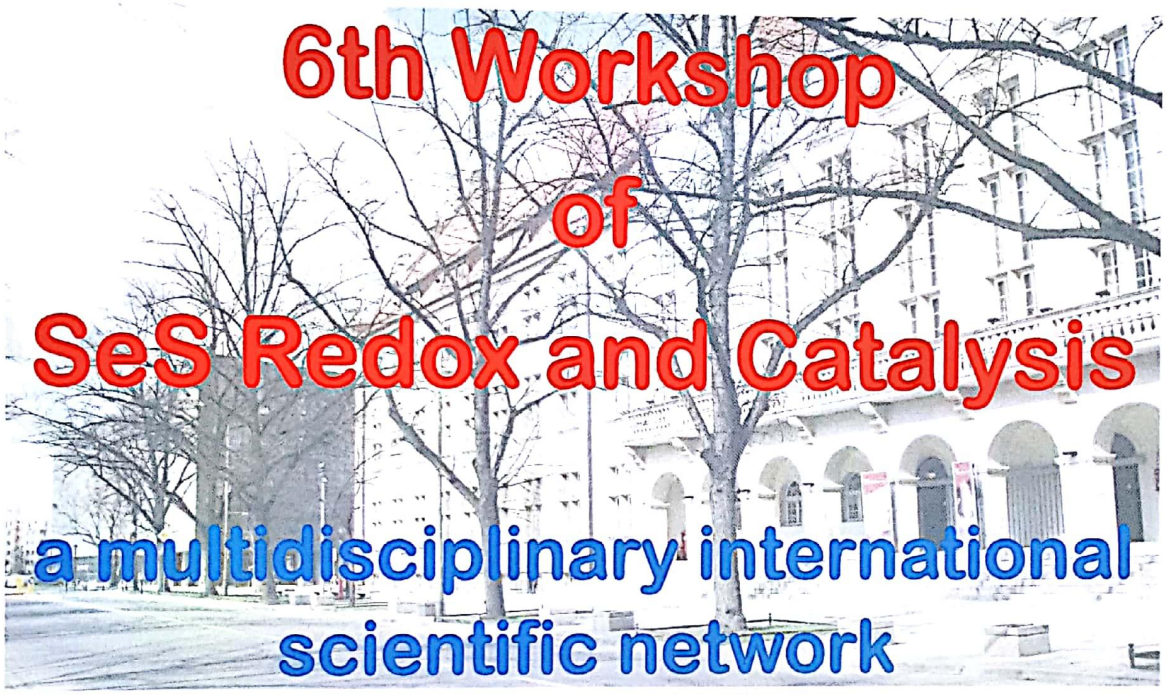

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P18: Synthesis of alkyl benzisoselenazol-3(2*H*)-ones and their sulfur analogues

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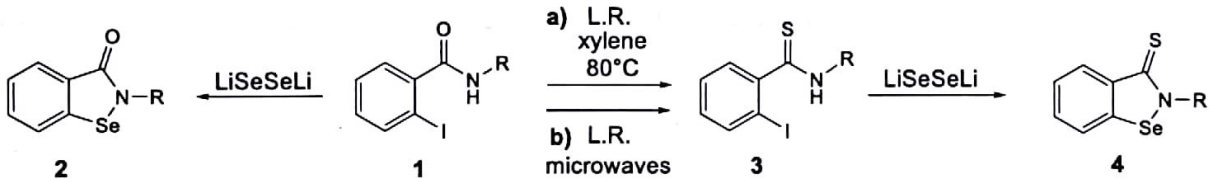
Benzisoselenazolones are important group of organoselenium compounds particularly due to their antioxidant properties. They can control the imbalance between the production and elimination of reactive oxygen species (ROS), which can lead to several frequently occurring diseases such as cancer, diabetes, atherosclerosis, hypertension, Alzheimer's disease.[1]

The aim of this study was the synthesis of alkyl benzisosenenazole-3(2*H*)-ones and their sulfur analogues. In the first step *N*-substituted *o*-iodobenzamides **1** by the reaction of amines with *o*-iodobenzoic acid chloride were obtained. Then they were transformed into benzisoselenazol-3(2*H*)-ones **2** by the reaction with dilithium diselenide[2] or into the corresponding *N*-substituted *o*-iodobenzothioamides **3** by two alternative methods. The first one **a** was the reaction of **1** with Lawesson's reagent in xylene at 80 °C.[3] The second one **b** was based on the reaction without the presence of solvent under the influence of microwave radiation.[4] The corresponding thiocarbonyl benzisoselenazole-3(2*H*)-ones **4** were prepared by the reaction *N*-substituted *o*-iodobenzothioamides **3** with dilithium diselenide.[2]



Scheme 1. *Synthesis of benzisosenenazole-3(2H)-ones and thiocarbonyl derivatives*

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References:

1. M. Iwaoka *Organoselenium Chemistry: Between Synthesis and Biochemistry* ed. C. Santi, Bentham Science Publishers **2014**, 18, 355-361.

2. Pacuła, J. Ścianowski, K. Aleksandrzak *RSC Adv.* **2014**, 4, 76, 48959-48962.

3. S. Scheibye, J. Kristensen, S.O. Lawesson *Tetrahedron* **1979**, 35, 1339-1343.

4. R.S. Varma, D.Kumar *Org. Lett.* **1999**, 1, 697-700.