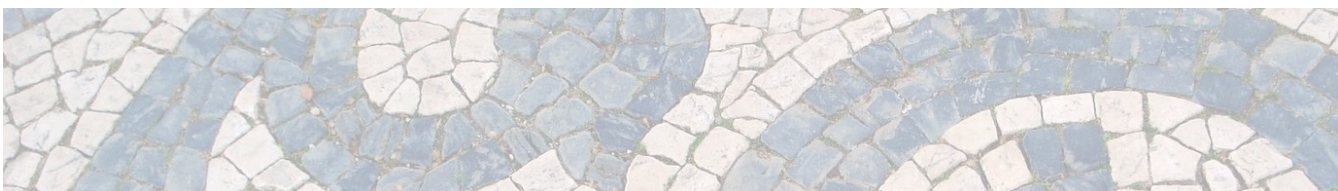


**19TH EUROPEAN SYMPOSIUM
ON ORGANIC CHEMISTRY**

BOOK OF ABSTRACTS

JULY 12TH – 16TH, 2015

LISBOA, PORTUGAL



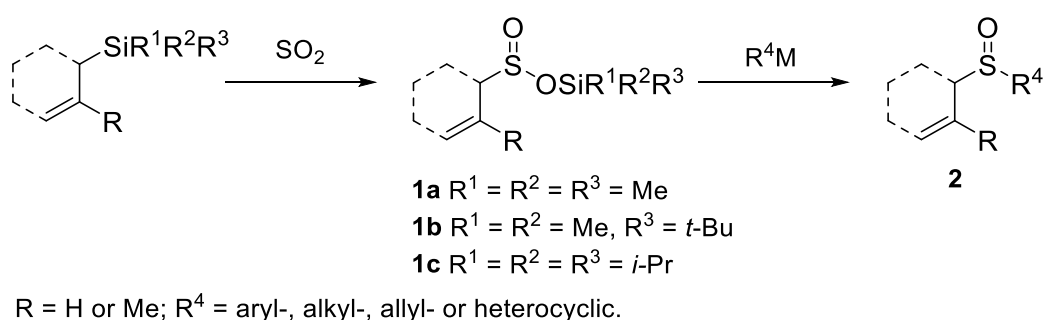
APPLICATION OF SILA-ENE REACTION IN ALLYLSULFOXIDE SYNTHESIS

A. Stikute, V. Peipins, M. Turks

Faculty of Material Science and Applied Chemistry, Riga Technical University, Paula Valdena Str. 3/7, LV-1007, Riga, Latvia; maris_turks@ktf.rtu.lv

Ene-reaction of allyltrialkyltin, allylgermanes, allylsilanes and enoxysilanes with sulfur dioxide are well known.¹ Our research is focused on application of silyl sulfinates **1** in the synthesis of functionalized sulfoxides **2** (Scheme 1). Application of silyl sulfinates **1** in organic chemistry has been demonstrated in different fields, including their transformation into sulfones, sulfonamides, sulfonic esters,¹ in total synthesis of polypropionate antibiotics² and as silylation reagents for GC-MS quantitative analysis.³ Traditional synthesis of sulfoxides **2** includes oxidation of sulfides and C-S bond formation with nucleophilic substitution.⁴ Various sulfinyl transfer agents have been used for C-S bond creation, but silyl sulfinates **1** provide a new approach towards sulfoxide **2** synthesis.

In order to optimize the reaction conditions for sulfoxide **2** synthesis we investigated influence of solvent, temperature, organometallic reagent and Lewis acid additive on sulfoxide **2** yield. We have also diversified silyl moiety in sulfinates **1** structure, examining trimethylsilyl- (**1a**), *tert*-butyldimethylsilyl- (**1b**) and triisopropylsilyl sulfinates (**1c**) in order to increase the yields of sulfoxides **2**. The optimal reaction conditions will be discussed and the scope of the method will be demonstrated on aryl-, alkyl-, allyl- and heterocyclic organometallic reagents.



Scheme 1. Strategy of sulfoxide **2** synthesis.

References:

- [1] P. Vogel, M. Turks; L. Bouchez, D. Markovic, A. Varela-Alvarez, J. A. Sordo, *Acc. Chem. Res.* **2007**, *40*, 931-942.
 [2] P. Vogel, M. Turks, L. Bouchez, C. Craita, X. Huang, M. C. Murcia, F. Fronquene, C. Didier, C. Flowers, *Pure Appl. Chem.* **2008**, *80*, 791-805.
 [3] I. Novosjolova, M. Turks, *Phosph. Sulf. Silicon Rel. Elem.* **2015**, *in press* [doi: 10.1080/10426507.2014.996644].
 [4] E. Wojaczynska, J. Wojaczynski, *Chem. Rev.* **2010**, *110*, 4303-4356.