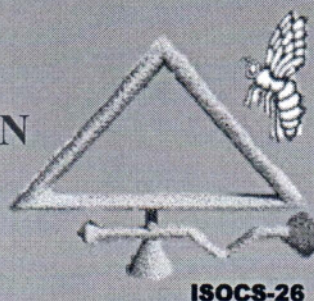




ISOCS-26

26th INTERNATIONAL SYMPOSIUM ON
ORGANIC CHEMISTRY OF SULFUR

24-29 AUGUST 2014
ISTANBUL, TURKEY



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PROGRAMME



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LABORATUVAR VE TIBBİ
ÇÖZÜMLER



Day 4: August 27th, 2014 Wednesday

SESSION 9 (Conference Hall)		
09.30-11.20	Session Chair : Prof. Dr.Jozef DRABOWICZ	
09:30-10:15	Prof. Dr.Takeshi TAKEDA Department of Applied Chemistry, Graduate School of Engineering, Tokyo University of Agriculture and Technology JAPAN	Diversity Oriented Construction of Unsaturated Systems Using Silyl Group-Containing Organosulfur Compounds
10:15-10:45	Prof. Dr.Françoise COLOBERT University of Strasbourg / ECPM FRANCE	Enantiopure Sulfoxides: New Tools for the Control of Axial Chirality
10:45-11:05	Prof. Dr.Grzegorz MLOSTON University of Łódź, Faculty of Chemistry, Tamka, Łódź POLAND	New Applications of Hetaryl and Aryl/Hetaryl Thioketones in Selected [2+2], [2+3], and [2+4]-Cycloaddition Reactions

11:05- 11:20 Coffee/Tea Break

SESSION 10 (Conference Hall)		
11:20-12:10	Session Chair :Prof. Dr. Mao MINOURA	
11:20-11:50	Dr.Noureddine KHIAR CSIC SPAIN	Sweet Sulfur-Based Nanomaterials: Design, Synthesis and Bioapplications
11:50-12:10	Mr.Damiano TANINI Dipartimento di Chimica, Università di Firenze, Via della Lastruccia ITALY	Azyridines Ring Opening by Silyl Chalcogenides: A Selective Access to Polyfunctionalized Molecules as Precursors of Sulfurated and Selenated Heterocycles

12:10 - 13:10 LUNCH

13:15-18:00 CITY TOUR

20:00-24:00 GALA DINNER

Day 5: August 28th, 2014 Thursday

SESSION 11 (Conference Hall)		
09:30-11:05	Session Chair :Prof. Dr. Peter J. SKABARA	
09:30-10:15	Prof. Dr. Levent TOPPARE Middle East Technical University, Department of Chemistry TURKEY	A Short Story of Neutral State Green Polymer and One Polymer for ALL Colors?
10:15-10:45	Prof. Dr. Martin HEENEY Department of Chemistry,Imperial College UNITED KINGDOM	Thiophene and Selenophene Containing Conjugated Polymers for FET and OPV Applications
10:45-11:05	Mr. Hakan BILDIRIR Department of Chemistry Technische Universität Berlin GERMANY	Synthesis and Properties of Sulfur Based Conjugated Microporous Polymers

11:05 - 11:20 Coffee/Tea Break

SESSION 12 (Conference Hall)		
11:20-12:50	Session Chair :Prof. Dr.Takeshi TAKEDA	
11:20-11:50	Prof. Dr. Ahmet M. ONAL Middle East Technical University Department of Chemistry, Ankara TURKEY	The Effect of Heteroatoms in Conjugated Polymers: Sulphur versus Selenium
11:50-12:10	Prof. Dr. Vladimir POTAPOV A. E. Favorsky Irkutsk Institute of Chemistry, Siberian Branch of the Russian Academy of Sciences, RUSSIAN FEDERATION	Comparison of the Reactivity of Analogous Sulfur, Selenium and Tellurium Compounds. Influence of the Chalcogen Atom on the Course of Reactions
12:10-12:30	Prof. Dr. Bouzid BOUDJEMA Department of Physics, Faculty of Sciences, University 20 august1955 ALGERIA	Studies on AC Response of M ₆ P ₆ Thin Films Molecular Materials
12:30-12:50	Prof. Dr. Maris Turks Faculty of Material Science and Applied Chemistry, Riga Technical University LATVIA	The Use of Vogel's Silyl Sulfinat in Synthesis and Gas Chromatography

12:50 - 13:50 LUNCH

OP19 THE USE OF VOGEL'S SILYL SULFINATE IN SYNTHESIS AND GAS CHROMATOGRAPHY

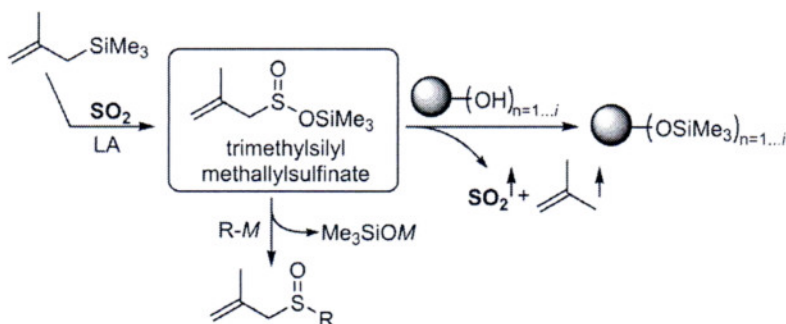
Māris Turks, Irina Novosjolova

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The extensively used derivatization procedure to enhance the volatility of organic substances for their gas chromatographic analysis is silylation.¹ This method is also good for thermal and gas chromatographic stability of polar and non-stable organic compounds.²

In 2002, Vogel *et al.* reported synthesis of trimethylsilyl 2-methylprop-2-ene-1-sulfinate in a Lewis acid catalyzed sila-ene reaction between methallylsilane and sulfur dioxide.³ Also simple isobutene reacts with SO₂ in the presence of BCl₃ and provides the same target product.⁴ It was found that this reagent easily transfers the silyl group to alcohols.⁵

The present work deals with the use of Vogel's silyl sulfinate in qualitative and quantitative gas chromatographic analysis of organic substances, as well as in organic synthesis.



In our hands the aforementioned reagent has been successfully applied in the user-friendly silylation procedure of alcohols, polyols, carboxylic and hydroxycarboxylic acids and mixtures of different polyhydroxy compounds (e.g.: glycerol, resorcinol, tartaric acid, malic acid, D-ribose, D-mannose and D-glucose) and their subsequent gas chromatographic analysis. A typical experimental procedure involves simple mixing of the aforementioned reagent with the selected analyte in MeCN or THF directly before injection in a gas chromatograph. The elaborated analysis conditions are suitable for both qualitative and quantitative analysis. In the latter case both the internal standard method and application of calibration curve gave good results. The main advantage of this silylation process is the generation of volatile byproducts: sulfur dioxide and isobutene.

In the case of persilylated monosaccharides the developed technique can be further coupled with the glycosidation techniques. This and the reactions of silyl sulfinates with organometallic reagents providing a direct entry in sulfoxide synthesis will be discussed.

References:

1. Halket, J.M.; Zaikin, V.G. *Eur. J. Mass Spectrom* **2003**, *9*, 1.
2. a) Rojas-Escudero, E.; Alacon-Jimenez, A.L.; Elizalde-Galvan, P.; Rojo-Callejas, R. *J. Chromtogr. A* **2007**, *1027*, 117; b) Medeiros, P.M.; Simoneit, B.R.T. *J. Chromtogr. A* **2007**, *1141*, 271; c) Nadulski, T.; Pragst, F. *J. Chromtogr. B* **2007**, *846*, 78. d) Shareef, A.; Angove, M.J.; Wells, J.D. *J. Chromtogr. A* **2006**, *1108*, 121.
3. a) Bouchez, L.C.; Vogel, P. *Synthesis* **2002**, *225*; b) Bouchez, L.C.; Reddy Dubbaka, S.; Turks, M.; Vogel, P. *J. Org. Chem.* **2004**, *69*, 6413.
4. Marković, D.; Volla, C. M. R.; Vogel, P.; Varela-Álvarez, A.; Sordo, J. A. *Chem. Eur. J.* **2010**, *16*, 5969.
5. Huang, X.; Craita, C.; Awad, L.; Vogel, P. *Chem. Commun.* **2005**, 1297.