PROGRAM

20th EUROPEAN SYMPOSIUM ON ORGANIC CHEMISTRY

ESOC 2017

JULY 2 – 6

COLOGNE | GERMANY

150 Years GDCh

University of Cologne

SY084 **One-Pot Synthesis of Dibenzo[b,d]oxepines via Olefinic C-F Bond Functionalization and Intramolecular Pd-Catalyzed C-H Arylation**

E. Ausekle, Rostock/DE , P. Ehlers, Rostock/DE, A. Villinger, Rostock/DE, P. Langer, Rostock/DE

SY085 **Facile Three-Component Synthesis of New Pyrano[3,4-c]pyrrole Derivatives**

N. Bennamane, Algiers/DZ , B. Cherfaoui, Algiers/DZ, M. Khalfaoui, Algiers/DZ, H. Lakhdari, Algiers/DZ, B. Nedjar-Kolli, Algiers/DZ

SY086 **Efficient Phosphine-Mediated Formal $C(sp^3)$-$C(sp^3)$ Coupling Reactions of Alkyl Halides in Batch and Flow**

U. Tran, Sydney/AU , V. Nguyen, Sydney/AU, C. Gordon, Cambelltown/AU, R. Koenigs, Aachen/DE, K. Hock, Aachen/DE

SY087 **Synthesis of aromatic sulfonamides as inhibitors of carbonic anhydrases**

J. Ivanova, Riga/LV , R. Zalubovskis, Riga/LV

SY088 **Total Synthesis of Biselyngbyaside**

E. Sato, Yokohama/JP , M. Sato, Yokohama/JP, Y. Tanabe, Yokohama/JP, N. Nakajima, Yokohama/JP, A. Ohkubo, Yokohama/JP, K. Suenaga, Yokohama/JP

SY089 **Sulfur dioxide: useful reagent and solvent in organic chemistry**

M. Turks, Riga/LV , J. Luginina, Riga/LV, K. Suta, Riga/LV, D. Posevins, Riga/LV, A. Stikute, Riga/LV, I. Novosjolova, Riga/LV, D. Cirule, Riga/LV, M. Purins, Riga/LV

SY090 **Synthesis of C-linked Carbohydrates bearing Phthalocyanines and the Investigation of their Aggregation Behaviour in Solution**

F. Bächle, Tübingen/DE , T. Ziegler, Tübingen/DE

SY091 **One pot process for the production of diformylfuran and its transformation into gemini surfactants with particularly low critical micelle concentration**

N. Hoffmann, Reims/FR , Q. Girka, Reims/FR, S. Marinkovic, Pomacle/FR, B. Estrine, Pomacle/FR, J. Le Bras, Reims/FR, J. Muzart, Reims/FR

SY092 **Synthesis of pretubulysin-derivatives via the TubUgi-approach**

J. N. Gorges, Saarbrücken/DE , J. Hoffmann, Saarbrücken/DE, L. Junk, Saarbrücken/DE, U. Kazmaier, Saarbrücken/DE

SY093 **Domino Catalytic and Enantioselective [2,3]-Rearrangement of Allylic Ammonium Ylides**

S. Spoehrle, St Andrews/GB

SY094 **Synthesis of tryptophan containing cyclopeptides by late stage functionalization**

L. Junk, Saarbrücken/DE , U. Kazmaier, Saarbrücken/DE

Sulfur dioxide: useful reagent and solvent in organic chemistry

M. Turks, Riga/LV, J. Luginina, Riga/LV, K. Suta, Riga/LV, D. Posevins, Riga/LV, A. Stikute, Riga/LV, I. Novosjolova, Riga/LV, D. Cirule, Riga/LV, M. Purins, Riga/LV

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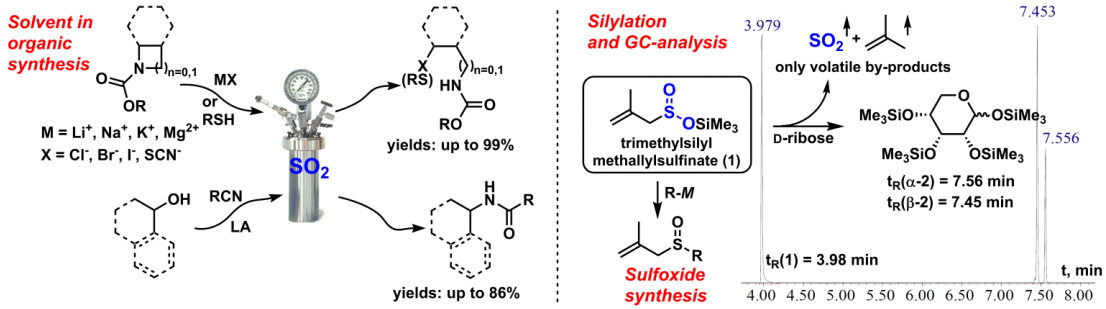
Sulfur dioxide reveals a rather long liquid range (b.p. -10 °C; m.p. -75.5 °C) and its phase diagram predicts only ~10 atm pressure at 60 °C in a closed reactor. The latter facts together with high dipole moment (1.61 D) of SO_2 and its Lewis acidic properties makes it a useful reaction medium for transformations involving charged intermediates.
We have discovered that unprotected and carbamate-protected aziridines and azetidines undergo efficient ring-opening reactions in liquid SO_2 with I and II group metal halides and thiols [1,2]. The advantage of this approach is based on the fact that carbamate groups (Cbz, Boc) can be easier removed if required than their well-described sulfonamide counterparts.
We have also found that liquid SO_2 facilitates the Ritter reaction. For the latter novel $In(OTf)_3$ – catalyzed conditions were developed [3]. Liquid SO_2 in combination with $In(OTf)_3$ or $Hf(OTf)_4$ (< 1 mol-%) greatly facilitates also alkyne hydration. Moreover, alkyne hydrohalogenation in liquid SO_2 with I and II group metal halides and NH_4X does not require Lewis acid catalysis. The optimization of the reaction conditions will be discussed.
We have developed catalytic conditions for synthesis of trialkylsilyl allylsulfinates in *ene*-reactions between allylsilanes and SO_2. The obtained products can be used as effective and traceless derivatization (silylation) reagents for qualitative and quantitative GC-analysis of non-volatile polyhydroxy compounds [4] and as starting materials in sulfoxide synthesis [5]. The developed trialkylsilyl methallylsulfinates are powerful silylating agents also on a preparative scale and their application in carbohydrate and nucleoside chemistry will be discussed.



Literature:

[1] J. Lugiņina, J. Uzuleņa, D. Posevins, M. Turks, Eur. J. Org. Chem. 2016, 1760. [2] J. Lugiņina, M. Turks, Synlett, 2017 in press, DOI: 10.1055/s-0036-1588670. [3] D. Posevins, K. Suta, M. Turks, Eur. J. Org. Chem. 2016, 1414. [4] D. Marković, W. A. Tchawou, I. Novosjolova, S. Laclef, D. Stepanovs, M. Turks, P. Vogel, Chem. Eur. J. 2016, 22, 4196. [5] A. Stikute, V. Peipiņš, M. Turks, Tetrahedron Lett. 2015, 56, 4578.