



BEILSTEIN SYMPOSIUM

ABSTRACTS

STEREOSELECTIVE ALKENE FUNCTIONALIZATIONS

BEILSTEIN
ORGANIC CHEMISTRY
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RUEDESHEIM / GERMANY



POSTER OVERVIEW

- | | |
|---------------|---|
| No. 1 | Stereoselective Diels–Alder-reactions of 2-methylfuran with maleic acid derivatives as key steps for preparing bio-based plasticizer molecules
Bastian Altemeier / Bielefeld University |
| No. 2 | Stereoselective synthesis of <i>N</i>-alkenyl compounds from azidofluoroalkanes
Petr Beier / Czech Academy of Sciences |
| No. 3 | Synthesis of highly functionalized alkenes from propargyl silanes via 1,2-silyl migration
Rūdolfs Belaunieks / Riga Technical University |
| No. 4 | Asymmetric <i>aza</i>-Wacker reactions driven by organo-π-acid catalysis
Sebastian Graf / University of Regensburg |
| No. 5 | Brønsted acid-catalysed enantioselective iodocycloetherification enabled by triphenylphosphine selenide cocatalyst
Sudip Guria / Vrije Universiteit Brussel |
| No. 6 | Boron- and indium-Lewis acid catalysed transfer-hydrogenation and regiodivergent hydrodeuteration of alkenes
Gerhard Hilt / University of Oldenburg |
| No. 7 | The electrochemical 200% current efficient <i>trans</i>-bromination and the <i>cis</i>-chlorination of alkenes
Gerhard Hilt / University of Oldenburg |
| No. 8 | Bimetallic catalysis with 2-phosphinoimidazole-derived Pd–Pd and Rh–Rh complexes
David Michaelis / Brigham Young University |
| No. 9 | Enantio- and regioselective lactonizations enabled by asymmetric photo-aerobic selenium-π-Acid catalysis
Christopher Schöll / University of Regensburg |
| No. 10 | Utilising frustrated Lewis pairs for alkene and alkyne functionalisation reactions
Katarina Stefkova / Cardiff University |
| No. 11 | Carbon dioxide enhances sulfur-selective conjugate addition reactions
Yang Yang / University of Copenhagen |



Poster

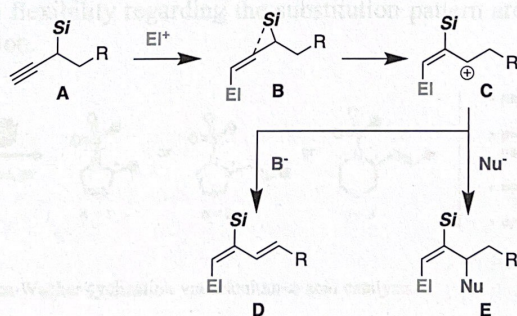
Synthesis of highly functionalized alkenes from propargyl silanes via 1,2-silyl migration

No. 3

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Stabilizing properties of β -silicon effect has been known to increase the rate of the reactions for unsaturated systems that proceed via the formation of β -silyl carbenium ion. The effect can be achieved by either vertical (hyperconjugation) or non-vertical (formation of cyclic silonium ion) stabilization. The formation of the latter in the combination with other stabilizing effects can lead the reactions to proceed via 1,2-silyl migration^[1]. Recently, we have reported the use of Brønsted acids as the catalyst for the synthesis of silyldienes and indenenes from propargylsilanes^[2,3].

Herein, we report the synthesis of highly functionalized alkenes by the activation of propargylsilane with various electrophiles like Br^+ , I^+ , PhSe^+ and *in situ* generated Cu^{3+} . The obtained allyl cation then reacts with various external or internal nucleophiles to obtain alkenes or with bases to obtain dienes. Functionalized alkenes **E** possess both vinyl halide moiety (El = halogen) and allyl ester moiety (Nu = OAc) and as such are prearranged for the cross-coupling chemistry, which further increases the molecular complexity. Our findings on synthesis and further transformations of products **D** and **E** will be reported in detail.



- [1] R. Beļauņieks, M. Puriņš, M. Turks, *Synthesis*, **2020**, 52, 2147
- [2] M. Puriņš, A. Mishnev, M. Turks, *J. Org. Chem.*, **2019**, 84, 3595
- [3] R. Beļauņieks, M. Puriņš, V. Kumpiņš, M. Turks, *Chem. Heterocycl. Compd.*, **2021**, 57, 20