LATVIJAS UNIVERSITĀTES
77. STARPTAUTISKĀ ZINĀTNISKĀ
KONFERENCE

ĶĪMIJAS SEKCIJA

Tēžu krājums

Book of Abstracts

The 77th International Scientific Conference
of the University of Latvia

Chemistry Section

2019

LIQUID SULFUR DIOXIDE – BENEFICIAL SOLVENT FOR TRANSFORMATIONS INVOLVING CARBENIUM ION INTERMEDIATES

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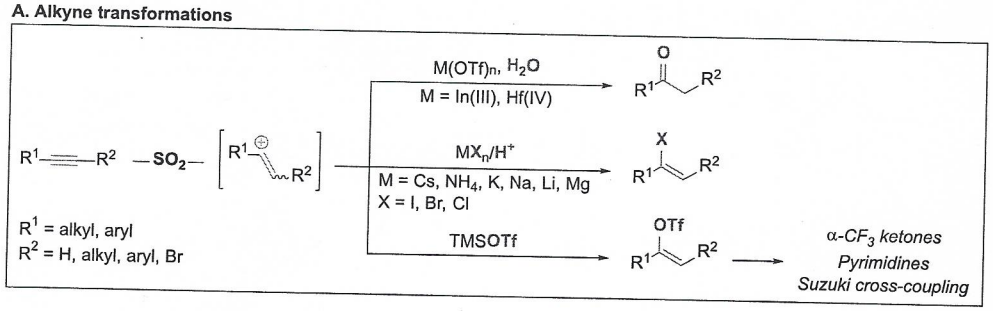
Due to its high polarity and Lewis acid properties liquid sulfur dioxide can be used as a strongly ionizing solvent. Consequently, it has promoting effect on various organic transformations that involve ionic intermediates [1–4].

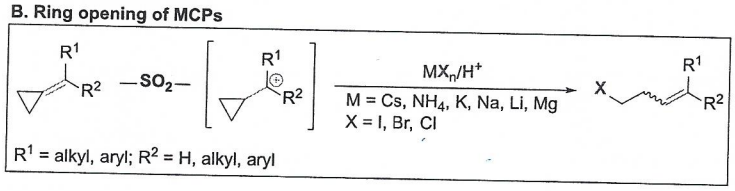
We have developed novel conditions for alkyne transformations through vinyl cation as an intermediate (**A**). The latter can be captured by nucleophiles like water, halide or triflate ion leading to the corresponding ketones, vinyl halides or vinyl triflates, respectively.

Recently, we have also discovered that similar conditions to alkyne hydrohalogenation can be used for ring opening of differently substituted methylene cyclopropanes (MCPs) to obtain b-haloalkenes (**B**).

A. Alkyne transformations



B. Ring opening of MCPs



Supervisor: prof., Dr. chem. Māris Turks

References:

[1] Posevins, D., Suta, K., Turks, M. *Eur. J. Org. Chem.* **2016**, 1414.
[2] Luginina, J., Uzuleņa, J., Posevins, D., Turks, M. *Eur. J. Org. Chem.* **2016**, 1760.
[3] Luginina, J., Turks, M. *Synlett* **2017**, *28*, 939.
[4] Suta, K., Turks, M. *ACS Omega* **2018**, *3*, 18065.