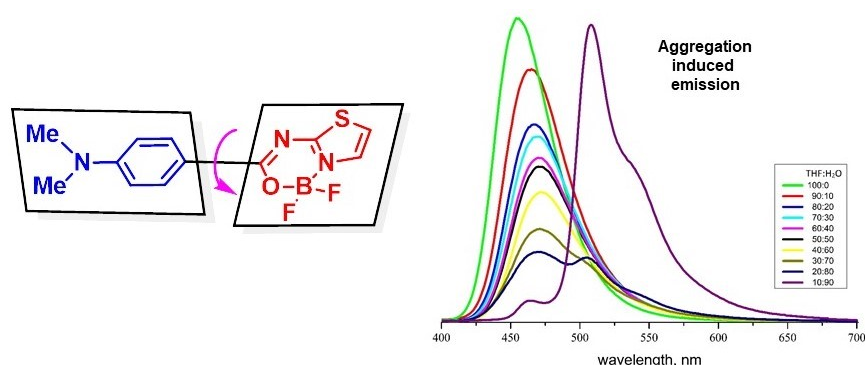


## Highly luminescent organoboron complexes (M.A. Potopnyk).

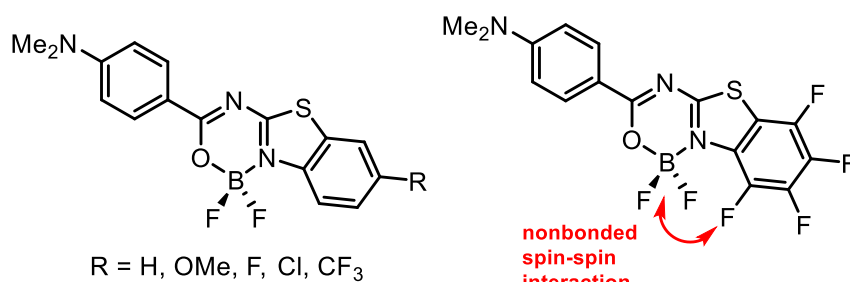
Tetracoordinated organoboron complexes, due to their photophysical properties, are among the most intensively investigated organic fluorophores. Our team has developed new *N,O*-chelated organoboron complexes based on amide ligands containing a thiazole or benzothiazole core. These compounds exhibit intensive fluorescence in solutions and solvatofluorochromism. Special attention is paid to the study of compounds exhibiting solid-state emission, in particular mechanochromic luminescent (MCL) materials. Current work is underway to discover new organoboron analogs for optoelectronic applications.

Recent results are shown below:

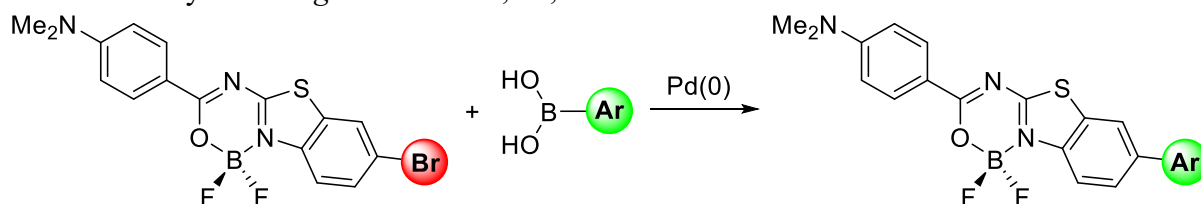
M. A. Potopnyk, R. Lytvyn, Y. Danyliv, M. Ceborska, O. Bezvikonnyi, D. Volyniuk, J. V. Gražulevičius, "*N,O*  $\pi$ -Conjugated 4-Substituted 1,3-Thiazole BF<sub>2</sub> Complexes: Synthesis and Photophysical Properties", *J. Org. Chem.* **2018**, 83, 1095.



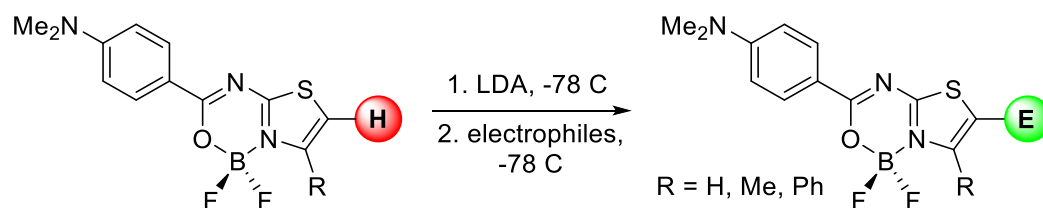
M. A. Potopnyk, D. Volyniuk, M. Ceborska, P. Cmoch, I. Hladka, Y. Danyliv, J. V. Gražulevičius, "Benzo[4,5]thiazolo[3,2-*c*][1,3,5,2]oxadiazaborinines: Synthesis, Structural, and Photophysical Properties", *J. Org. Chem.* **2018**, 83, 12129.



M. A. Potopnyk, D. Volyniuk, R. Luboradzki, M. Ceborska, I. Hladka, Y. Danyliv, J. V. Gražulevičius, "Application of the Suzuki-Miyaura Reaction for the Postfunctionalization of the Benzo[4,5]thiazolo[3,2-*c*][1,3,5,2]oxadiazaborinine Core: An Approach towards Fluorescent Dyes" *J. Org. Chem.* **2019**, 84, 5614.



M. A. Potopnyk, D. Volyniuk, R. Luboradzki, M. Ceborska, I. Hladka, Y. Danyliv, J. V. Grazulevicius, "Organolithium-Mediated Postfunctionalization of Thiazolo[3,2-c][1,3,5,2]oxadiazaborinine Fluorescent Dyes", *J. Org. Chem.* **2020**, *85*, 6060.



M. A. Potopnyk, "1,3,5,2-Oxadiazaborinines as a class of fluorescent organoboron dyes", *Targets in Heterocyclic Systems*; Societa Chimica Italiana, 2020, 24, 397–417.

M. A. Potopnyk, M. Kravets, R. Luboradzki, D. Volyniuk, V. Sashuk, J. V. Grazulevicius, "Carbazole-modified thiazolo[3,2-c][1,3,5,2]oxadiazaborinines exhibiting aggregation-induced emission and mechanofluorochromism", *Org. Biomol. Chem.* **2021**, *19*, 406.

