

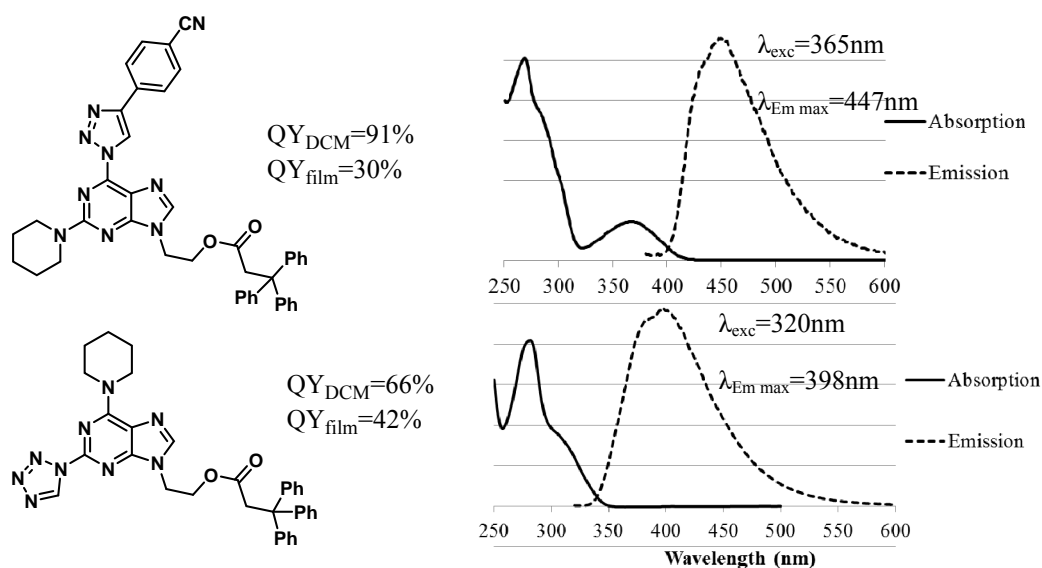
# AMORPHOUS PURINE-AZOLE CONJUGATES AND THEIR PHOTOPHYSICAL PROPERTIES

Armands Sebris, Irina Novosjolova, Kaspars Traskovskis and Māris Turks

Faculty of Materials Science and Applied Chemistry, Riga Technical University,  
LV-1048, Latvia

Earlier we reported the synthesis of fluorescent 2/6-triazolyl purine nucleosides [1,2]. Now we have developed the synthesis of purine derivatives with various azoles at C(6) and C(2) positions. Multiple combinations of electron-donor and electron-acceptor groups were used for the derivatization of purine derivatives to find the relationship between structure and photophysical properties. Trityl group containing substituent at N(9) position of purine provided amorphous properties.

The synthetic routes for various C(6) and C(2) functionalized purines were designed and the final products were obtained with 11–54% overall yields. The photophysical properties were studied in DCM solution and in the thin layer film. Target compounds exhibited fluorescence with emission maxima corresponding to the blue light. Quantum yields in DCM solution reached up to 91% and up to 59% in the thin layer films.



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[1] Kovaļovs, A.; Novosjolova, I.; Bizdēna, Ē.; Bižāne, I.; Skardziute, L.; Kazlauskas, K.; Jursenas, S.; Turks, M. *Tetrahedron Lett.* **2013**, *54*, 850–853.

[2] Šišūjins, A.; Bucevičius, J.; Tseng, Y.-T.; Novosjolova, I.; Traskovskis, K.; Bizdēna, Ē.; Chang, H.-T.; Tumkevičius, S.; Turks, M. *Beilstein J. Org. Chem.* **2019**, *15*, 474–489.