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## Tēžu krājums

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# ĶĪMIJAS SEKCIJA

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# SYNTHESIS AND PHOTOPYSICAL PROPERTIES OF SUBSTITUTED PURINE-CARBAZOLE CONJUGATES

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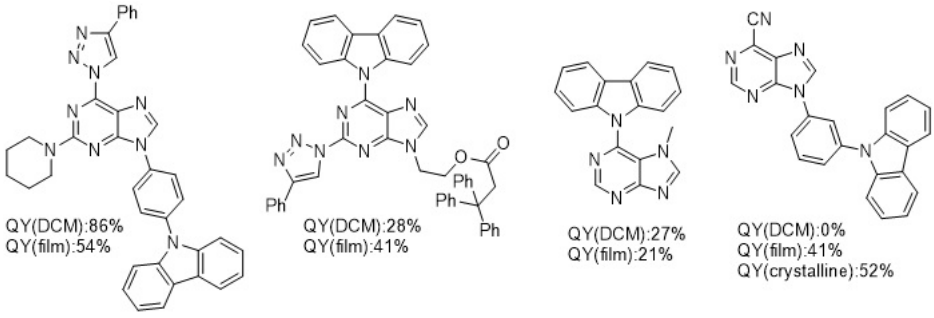
Earlier we reported the synthesis of fluorescent purine derivatives containing 1,2,3-triazolyl electron withdrawing groups and aliphatic amine electron donating groups at purine *C*(2) and *C*(6) positions and their photophysical properties [1]. This work was followed up by modification at purine *N*(9) position to increase amorphous properties of the fluorescent compounds which was achieved by introducing a trityl moiety there [2].

In this work we investigated the use of carbazole as an electron donating group in electron deficient purine systems and studied photophysical properties of such compounds. The synthetic routes for introduction of carbazole moiety at purine *C*(6) and *N*(9) positions and various electron withdrawing groups at purine *C*(2) and *C*(6) positions were designed. The photophysical properties were studied in the solutions, in the films and in some cases in the crystalline phase. Quantum yields reached up to 86% in DCM, up to 54% in the films, and up to 52% in the crystalline phase.

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***References:***

[1] Šišuļins, 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.

[2] Traskovskis, K., Mihailovs, I., Tokmakovs, A., Kokars, V., Rutkis, M. *Proceedings of SPIE*, **2012**, *8434*: Nonlinear Optics and Applications VI, 1.