

## OR-29

## QUINAZOLINONE DERIVATIVES: SYNTHESIS AND LUMINESCENCE PROPERTIES

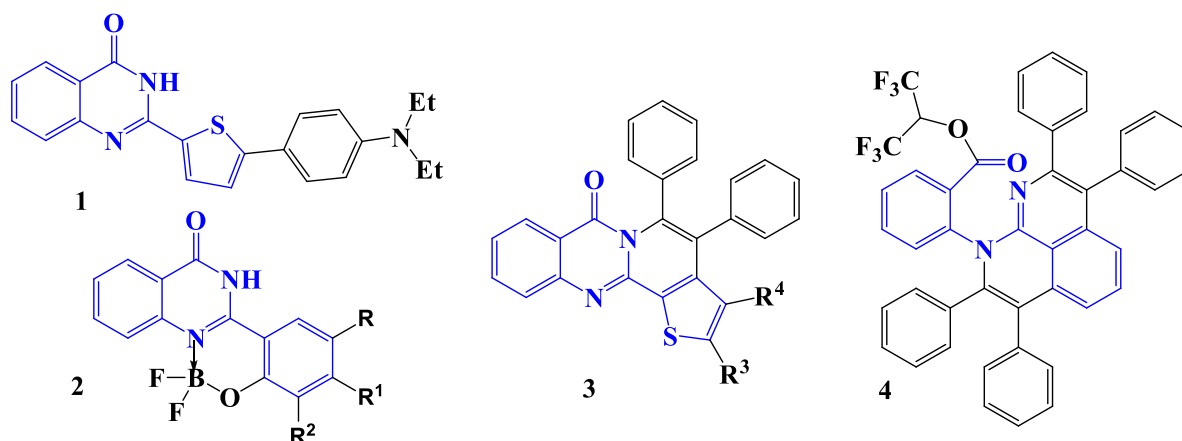
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**Abstract.** Benzazines are widely studied heterocyclic compounds<sup>1</sup> its framework possesses strong electron withdrawing ability and can be used as acceptor fragment to form push-pull molecules with ITC character. Quinazolin-4(3*H*)-one **1** represent promising fluorescence molecule with quantum yield 71% in toluene.<sup>2</sup> 2-(2-Hydroxyphenyl)quinazolin-4(3*H*)-ones can serve as N,O-chelating ligand favorable for construction BF<sub>2</sub> complexes **2**.<sup>3</sup> The introduction of methoxy group at *para*-position of phenol ring leads to increase in quantum yield compared to unsubstituted counterpart (from 24 to 70%).



R = H, *t*-Bu, Cl, Br, OMe, -NPh<sub>2</sub>C<sub>6</sub>H<sub>4</sub>; R<sup>1</sup> = H, NEt<sub>2</sub>; R<sup>2</sup> = H, *t*-Bu, Br, OEt;  
R<sup>3</sup> = H, Br, C<sub>6</sub>H<sub>13</sub>; R<sup>3</sup>-R<sup>4</sup> = benzo.

Additionally, 2-aryl(heteryl)quinazolinones are starting materials for the synthesis of the rigid polycyclic systems and have potential application as organic optical materials.<sup>4,5</sup> Compounds **3** and **4** have been synthesized by Rh(III)-catalyzed C-H/C-N annulation of quinazolinone and diphenylacetylene. Photophysical properties studies of considered polycyclic compounds **3,4** are in progress.

### References

1. Functionalized benzazines as luminescent materials and components for optoelectronics / E. V. Nosova, S. Achelle, G. N. Lipunova [et al.] // Russ. Chem. Rev. – 2019. – Vol. 88. – P. 1128–1178.
2. Synthesis and photophysical studies of novel 2-[5-(4-diethylaminophenyl)thiophen-2-yl]quinazoline derivatives / E. V. Nosova, T. N. Moshkina, G. N. Lipunova [et al.] // Mendeleev Commun. – 2018. – Vol. 28, Iss. 1. – P. 14–16.
3. Synthesis, structure and photoluminescent properties of BF<sub>2</sub> and BPh<sub>2</sub> complexes with N,O-benzazine ligands / E. V. Nosova, T. N. Moshkina, G. N. Lipunova [et al.] // J. Fluor. Chem. – 2015. – Vol. – 175. – P. 145–151.
4. Direct diversification of unmasked quinazolin-4(3*H*)-ones through orthogonal reactivity modulation / J. B. Lee, M. E. Kang, J. Kim [et al.] // Chem Commun. – 2017. – Vol. 53. – P.10394–10397.
5. Cu-Catalyzed Direct Diversification of 2-(2-Bromophenyl)quinazolin-4(3*H*)-ones through Orthogonal Reactivity Modulation / S. Chatterjee, R. Srinath, S. Bera [et al.] // Org. Lett. – 2019. – Vol. 21. – P. 9028–9032.

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