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5-AMINOBIPHENYL-SUBSTITUTED [1,2,4]TRIAZOLO[4,3-*c*]- AND [1,2,4]TRIAZOLO[1,5-*c*]QUINAZOLINES: SYNTHESIS AND PHOTOPHYSICAL PROPERTIES

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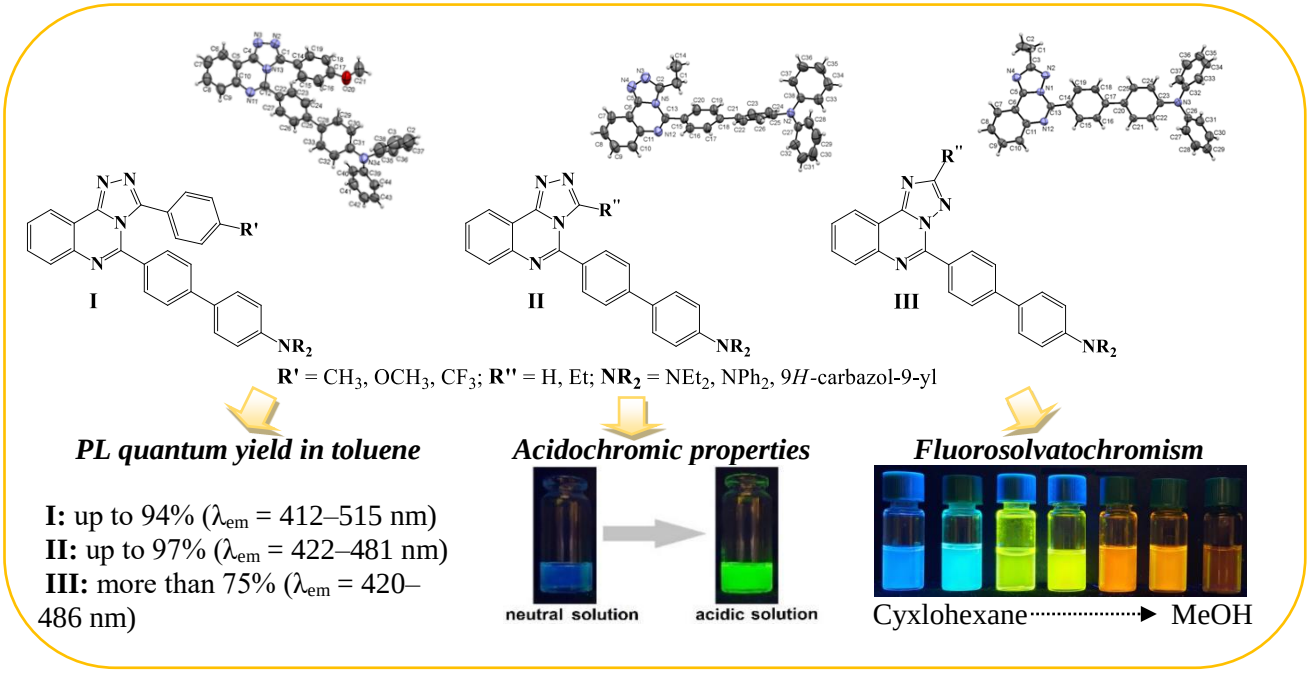
Abstract. [1,2,4]Triazoloquinazoline core is of great interest owing to its electron withdrawing property; it can be used for design of donor-acceptor small molecules displaying preferable for optical materials characteristics. For example, some related compounds were shown to be an efficient luminescent components for OLEDs [1,2] or fluorescent probes toward Fe^{3+}[3].

The synthetic approach to desired [1,2,4]triazoloquinazolines **I**–**III** is based on condensation of 4-hydrazino-2-(4-bromophenyl)quinazoline with arylbenzaldehyde following by treatment with Br_2 as oxidant (compounds **I** [4]), or with ortoester (compounds **II** and **III**), and subsequent Pd-catalyzed cross-coupling reaction with arylboronic acid or its pinacol ester.



All the compounds are emissive in blue-cyan region in toluene and in yellow-orange region in MeCN with different fluorescence intensity and quantum yield. Some [1,2,4]triazoloquinazolines display strong emission in solid state. The properties (absorption, emission and PLQY) are influenced by the nature of substituent at triazole ring, arylamino fragment as well as annulation type. Synthesized push–pull organic systems exhibit pronounced fluorosolvatochromism, reversible acidochromism and emission changes in presence of water.

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