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Preparation of 5-[4-(carbazol-9yl)phenyl]thiophene-2-carbaldehyde and its condensation with malonic acid derivatives. Optical properties and electrochemical polymerization.

© **Artur N. Bakiev**,[4+] **Alexey A. Gorbuov**,[4] **Igor V. Lunegov**,[2]
Elena V. Shklyaeva,[1,3] and **Georgy G. Abashev**[1,4]*[+]
[1] *Department of Organic Chemistry. Perm State University. Bukireva St., 15. Perm, 614990. Russia. Phone: +7 (342) 239-66-12. E-mail: seshurov@yandex.ru*
[2] *Department of Radio Electronics and Information Security. Perm State University. Bukireva St., 15. Perm, 614990. Russia. Phone: +7 (342) 239-62-31. E-mail: lunegov@psu.ru*
[3] *Laboratory of Organic Semiconductors. Natural Scientist Institute. Perm State University. Genkel St., 4. Perm, 614990. Russia. Email: gabashev@psu.ru*
[4] *Laboratory of Active Reagents Synthesis. Institute of Technical Chemistry, Russian Academy of Sciences, Ural Division. Academician Korolev St., 3. Perm, 614990. Russia. Phone: +7 (342) 237-82-89. E-mail: gabashev@psu.ru*

*Supervising author; [+]Corresponding author
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Abstract

There have been synthesized a new series of carbazole-containing chromophores with the structure D-π-A, as electron-acceptor moieties we used fragments of aldehyde and ethyl ether of 2-cyanoacrylic acid. 5-[4-(Carbazole-9-yl)phenyl] thiophene-2-carbaldehyde (**1**) was obtained with the help of с помощью cross-coupling reaction of Suzuki, further modification was carried out by the reaction of Knoevenagel. For the compounds produced we obtained absorption and fluorescence spectra, based on the values of the red boundary of the calculated value of the optical width of the prohibited zone, and the electrochemical behavior was investigated. We have shown that the aldehyde **1** and ethyl-3-{5-[4(9*H*-carbazole-9-yl)phenyl]thiophene-2-yl}-2- cyanoprop-2-enoate capable of electrochemical polymerization.