OLTCHIM
RESEARCH CENTER

ROMANIAN ACADEMY
SECTION OF CHEMICAL
SCIENCES

ROMANIAN CHEMICAL
SOCIETY

PROGRAMME

XXXV-th ROMANIAN CHEMISTRY CONFERENCE

October 2-5, 2018
Călimăneşti-Căciulata, Vâlcea
ROMANIA

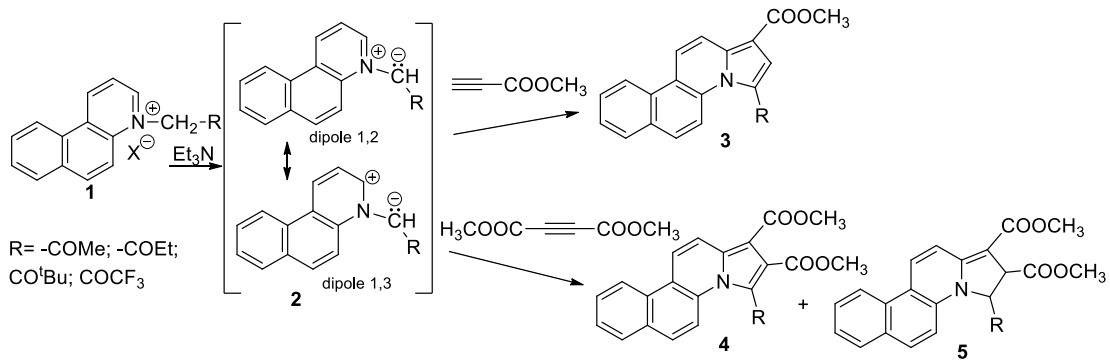
SYNTHESIS OF NEW AZASTEROID DERIVATIVES WITH FLUORESCENT PROPERTIES

Gheorghiță Zbancioc, Costel Moldoveanu, Vasilichia Antoci, Dorina Mantu, Ionel Mangalagiu

„Al. I. Cuza" University Iasi, Faculty of Chemistry, Carol I Bd., no. 11, Iasi, 700506, email: gheorghita.zbancioc@uaic.ro;

The synthesis of highly fluorescent derivatives continues to arouse strong interest because of their fascinating applications such as sensors and biosensors, electroluminescent materials, lasers, and other semiconductor devices.[1-4].

Initially, we generate *in situ* the benzo[f]quinolinium ylides from the corresponding benzo[f]quinolinium salts **1**, using Et_3N as base. In the next step, the ylides **2** were treated with methyl propiolate or DMAD (dimethyl acetylenedicarboxylate) (as activated alkynes), leading to the corresponding azasteroid derivatives **3**, **4** and **5**.



The reaction mechanism occurs as a typical 3+2 dipolar cycloaddition. When methyl propiolate was used as dipolarophiles, an azasteroid fully aromatized was obtained. In the case of DMAD, the cycloaddition occurred with the obtaining of a mixture of dihydro- and fully aromatized azasteroids. The structures of all compounds were proved unambiguously by spectral analysis (IR, ^{1}H-NMR, ^{13}C NMR, two-dimensional experiments).

Aknowledgements: Authors are thankful to UEFISCDI Bucharest, Romania, project **PN-III-P1-1.1-TE-2016-1205** for financial support and the **POSCCE-O 2.2.1, SMIS-CSNR 13984-901, No. 257/28.09.2010 Project, CERNESIM**, for NMR experiments.

1. Valeur, B.*'Molecular Fluorescence'*, Willey-VCH, Weinheim, **2002**.
2. Lee, S.; Nakamura, T.; Tutsui, T. *Org. Lett.* **2001**, *3*, 2005-2007.
3. Thompson, M.A.; Forrest, S.R. *Nature* **2000**, *403*, 750-751.
4. McQuade, D.T.; Pullen, A.E.; Swager, T.M. *Chem. Rev.* **2000**, *100*, 2537-2574.