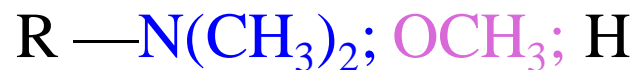
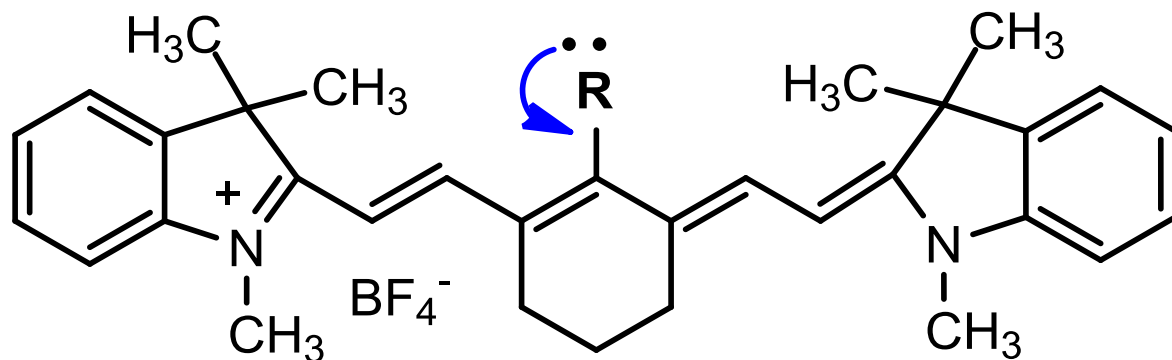


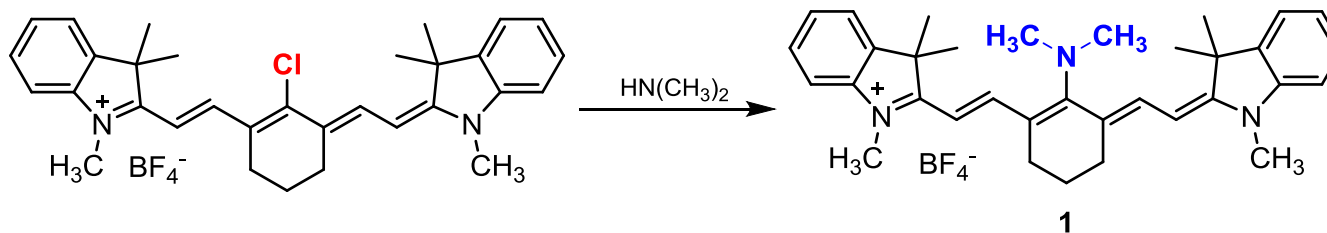
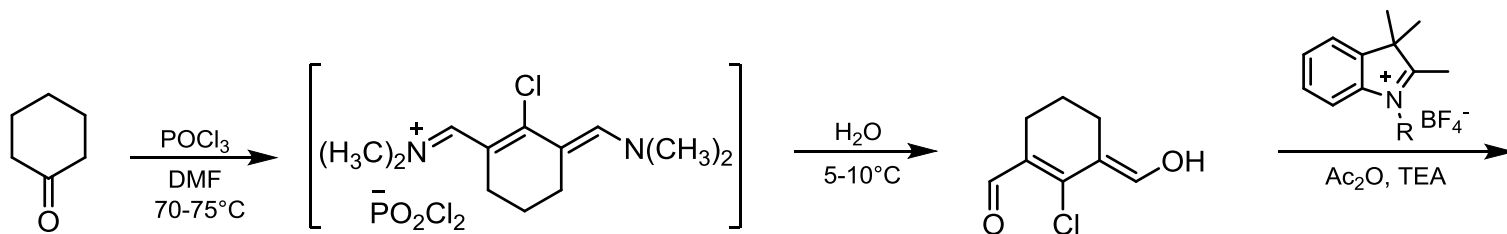
# ELECTRONIC STRUCTURE AND SPECTRAL- FLUORESCENT PROPERTIES OF MESO- SUBSTITUTED INDOTRICARBOCYANINES

Presented by  
Sharanov I.P.\*, Slominskii Yu.L., Ishchenko A.A.

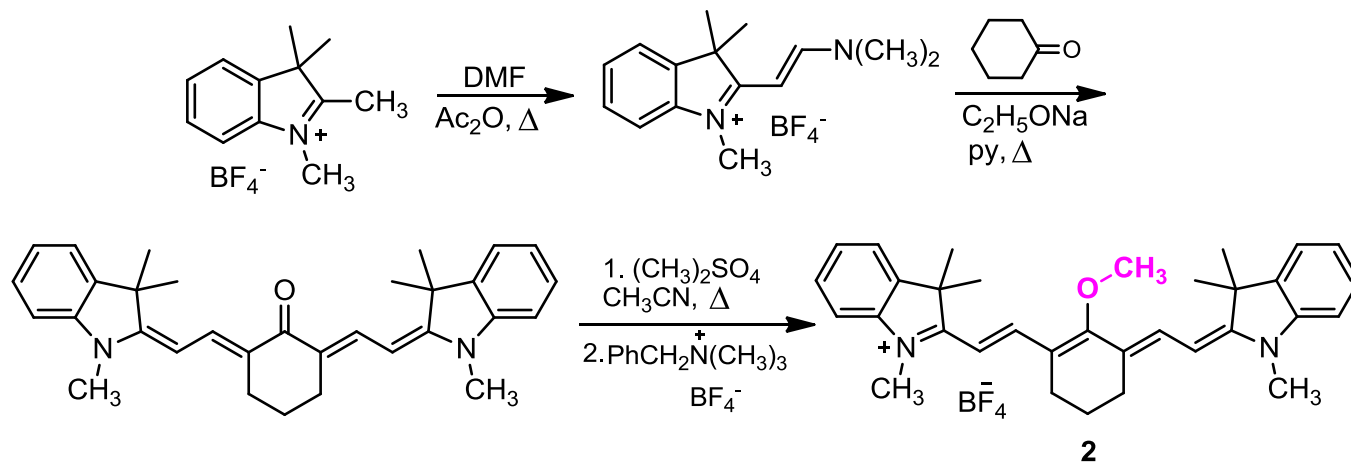
Our goal was to develop methods of synthesis of the indotricarbocyanines with a polymethylene bridge in  $\gamma, \gamma'$ -positions of the polymethine chain that have donor substituents in the meso position and to study their spectral-luminescent properties.



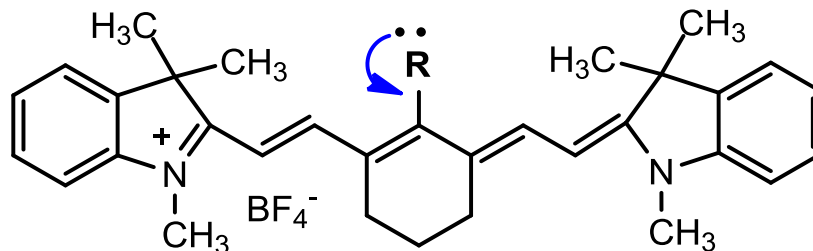
➤ **Synthesis of *meso*-substituted tricarboyanines with trimethylene bridge (1)**



➤ **Alternative synthesis of *meso*-methoxy substituted indoheptamethinecyanine derivative 2**



## Spectral-luminescent properties of indoheptamethinecyanine derivatives



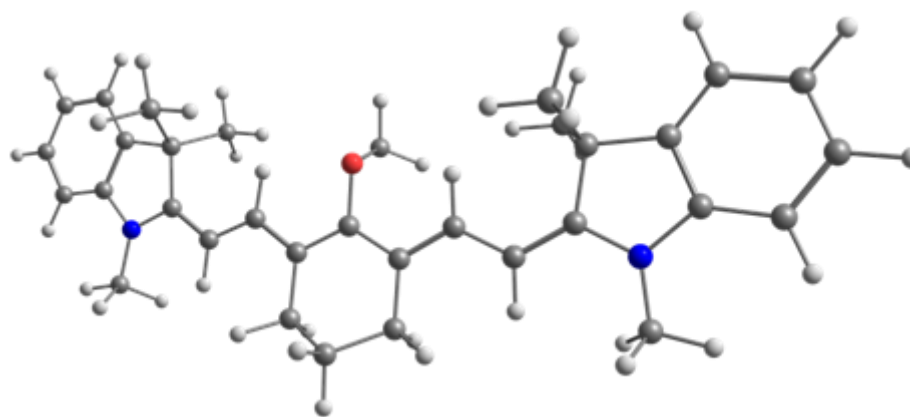
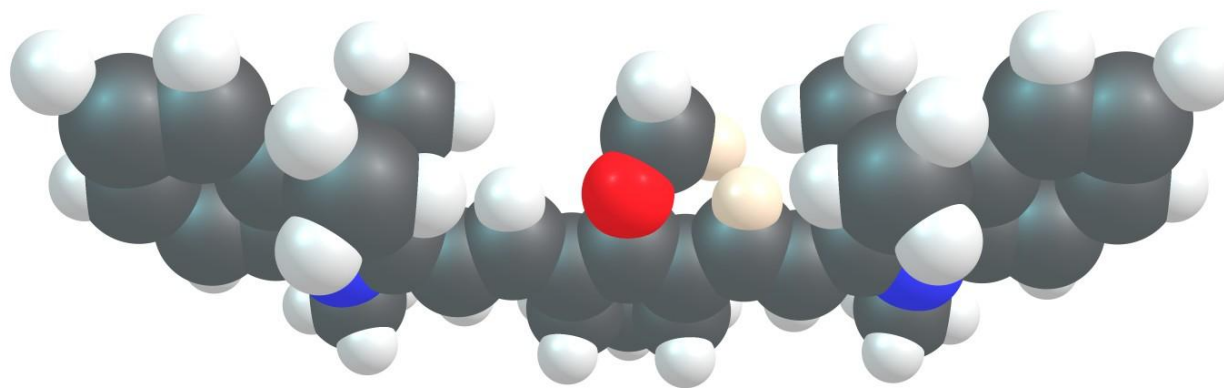
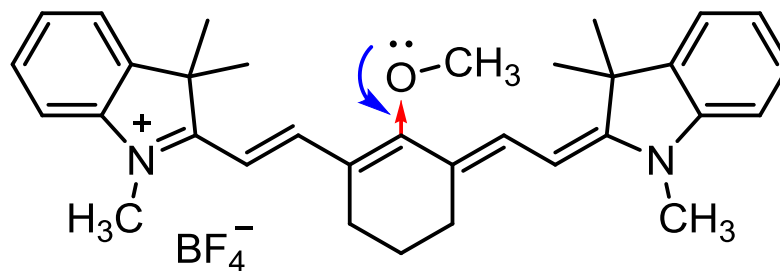
### Absorption

R	$\lambda_{\text{max}}^{\text{a}}$ , nm ( $\epsilon \cdot 10^{-4}$ l/mole·cm)		$\Delta\lambda$ , nm ( $\Delta\nu$ , $\text{nm}^{-1}$ )	
	EtOH	CH <sub>2</sub> Cl <sub>2</sub>	EtOH	CH <sub>2</sub> Cl <sub>2</sub>
H	748 (28.15)	760 (37.99)	-	-
N(CH <sub>3</sub> ) <sub>2</sub>	657 (7.9)	664 (8.34)	-91 (-1852)	-96 (-1902)
OCH <sub>3</sub>	756 (28.2)	762 (33.8)	8 (141)	2 (35)

### Fluorescence

R	$\lambda_{\text{max}}^{\text{f}}$ , nm		SS, $\text{cm}^{-1}$		$\Delta$ SS, $\text{cm}^{-1}$	
	EtOH	CH <sub>2</sub> Cl <sub>2</sub>	EtOH	CH <sub>2</sub> Cl <sub>2</sub>	EtOH	CH <sub>2</sub> Cl <sub>2</sub>
H	774	782	449	370	-	-
N(CH <sub>3</sub> ) <sub>2</sub>	782	784	2432	2305	1983	1935
OCH <sub>3</sub>	778	784	374	368	-75	-2

## Spatial orientation and the unexpected bathochromic effect of the methoxy group in the meso position of indoheptamethinecyanine





*Thank you for your attention!*