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## **ABSTRACT**

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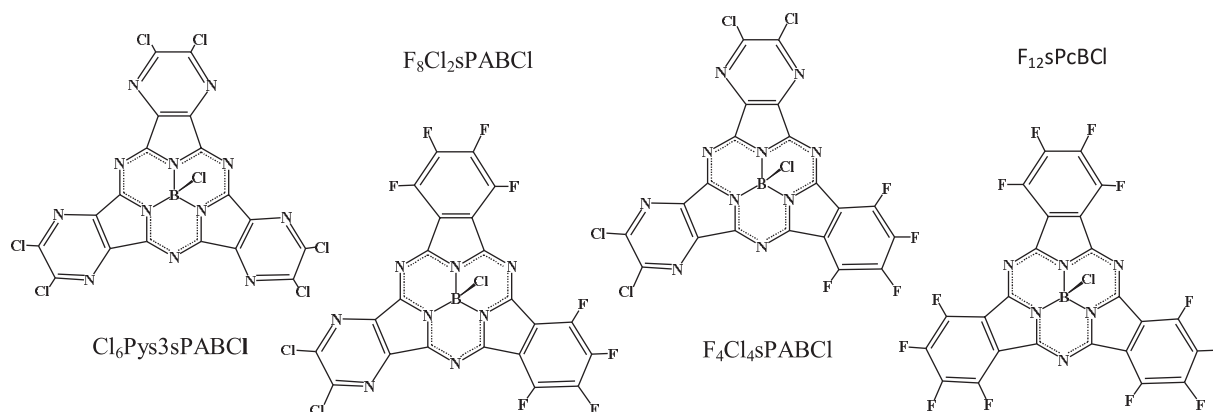
## PERHALOGENATED AZAANALOGUES OF SUBPHTHALOCYANINE AS A PERSPECTIVE ACCEPTORS FOR ORGANIC ELECTRONICS

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Introduction of different substituents in a subphthalocyanine molecule leads to considerable modification of its properties [1]. While subphthalocyanines behave as donor p-layers in hybrid organic solar cells, perfluorinated subphthalocyanine analogs have n-type conductivity and can be used as electron acceptors [2]. Moreover, not only halogenation, but also aza-substitution in benzene rings of subphthalocyanine may be used to enhance its acceptor properties. In our work we combined both modification methods: halogenation and aza-substitution. Thus, by co-condensation of tetrafluorophthalonitrile and 5,6-dichloro-pyrazin-2,3-dicarbonitrile in the presence of  $\text{BCl}_3$  in a p-xylene we have obtained a set of perhalogenated porphyrazines, containing dichloropyrazine and tetrafluorobenzene fragments.



The structure of obtained porphyrazines was characterized by MALDI-TOF mass spectroscopy and NMR-spectroscopy ( $^{11}\text{B}$ ,  $^{13}\text{C}$ ,  $^{19}\text{F}$ ). Preliminary results of DFT calculations and electrochemical measurements indicate that obtained compounds are perspective acceptor materials for organic electronics.

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### References

- [1] Claessens C.G. et al. Chem. Rev. 2014, 114, 2192.  
 [2] Dearden C.A. et al. Phys. Chem. Phys. 2014, 16, 18926–18932.