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Žádný, Jaroslav
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Helicene-based Imidazolium Salt and Its Application for Organic Molecular Electronics

Jaroslav Žádný,¹ Jan Storch*,¹ Tomáš Strašák,¹ Jan Sýkora,¹ Vladimír Církva,¹ Miloš Krbal,² Jan Vacek*,³

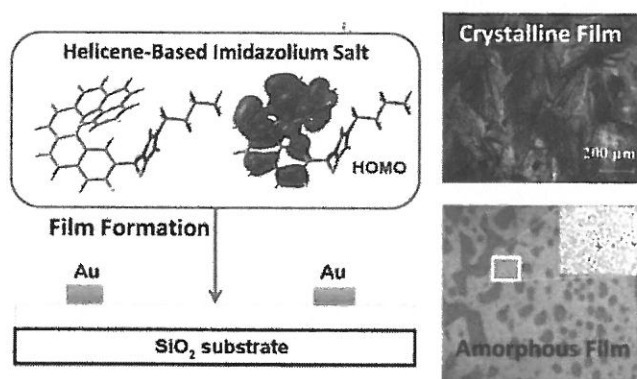
¹Institute of Chemical Process Fundamentals, v.v.i., ASCR, Rozvojova 1/135, Prague 6, 165 02

²Department of General and Inorganic Chemistry, Faculty of Chemical Technology, University of Pardubice, Cs. Legion's sq. 565, Pardubice, 532 10

³Department of Medical Chemistry and Biochemistry, Faculty of Medicine, Palacky University, Hnevotínska 3, Olomouc, 775 15
e-mail: zadny@icpf.cas.cz

Helicenes are functional molecules with broad spectrum of applications in physical and (bio)chemical research and development¹ and were shown to be effective in the development of materials with chiroptical properties useful for molecular-based electronics applications.² In this work we have focused on the substitution of the imidazolium cation with [6]helicene. The hypothesis for the preparation of the imidazolium-helicene hybrid was based on improving the properties of helicene for surface immobilization, enhancing its solubility in more polar solvents and last but not least finding advanced applications for helicenes in the development of electronic devices. The earlier prepared 1-butyl-3-([6]helicen-2-ylmethyl)imidazolium bromide was investigated in this manner.

Fig. 1



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1 Gingras, M. *Chem. Soc. Rev.* **2013**, *42*, 1051.

2 (a) Yang, Y.; Da Costa, R. C.; Fuchter, M. J.; Campbell, A. J. *Nature Photon.* **2013**, *7*, 634. (b) Yang, Y.; Da Costa, R. C.; Smilgies, D. M.; Campbell, A. J.; Fuchter, M. J. *Adv. Mater.* **2013**, *25*, 2624.