

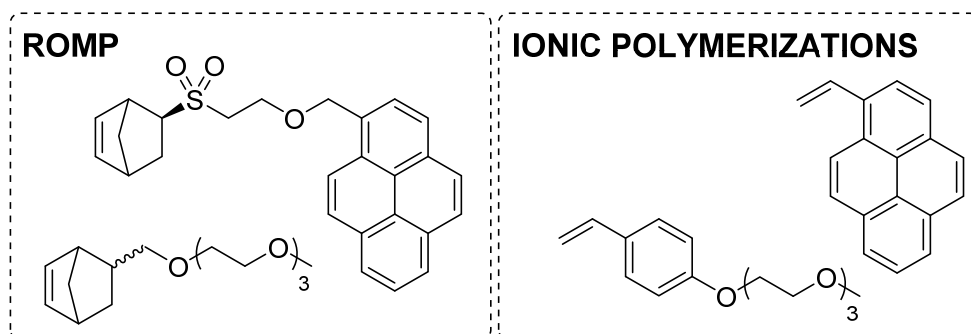
ORGANIC MIXED CONDUCTORS WITH A LARGE ELECTROCHEMICAL WINDOW

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The development of bulk materials with both a high electronic and ionic conduction is an ongoing challenge. Such materials are believed to enable the realization of large volume electrochemical cells and might enable next generations of alkali battery layouts [1]. In electrochemical applications not only the conductivity of electrons and ions but also the electrochemical window is of importance.

Herein we describe the syntheses and characterizations of organic mixed conducting polymers based on pyrene and oligo glycol segments in their sidechains. We used Ring-opening Metathesis Polymerization (ROMP) and anionic, as well as cationic polymerizations for obtaining homo- and copolymers of the monomers depicted below.



The electrochemical characterization via cyclic voltammetry and impedance measurements allowed for qualifying these polymers and revealed an electrochemical window of about 2.5 V (measured against Li) in certain cases.

[1] Malti, A.; Edberg, J.; Granberg, H.; Ullah Khan, Z.; Andreasen, J. W.; Liu, X.; Zhao, D.; Zhang, H.; Yao, Y.; Brill, J. W.; Engquist, I.; Fahlman, M.; Wågberg, L.; Crispin, X.; Berggren, M. *Adv. Sci.* **2016**, *3*, 1500305.