

New materials for electrochromic devices: synthesis and properties

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Abstract

Materials exhibiting reversible color change when a voltage is applied, called electrochromic materials, have been drawing a great attention due to their applications as active materials in organic electronics. Many kinds of organic and inorganic compounds are used for electrochromic applications. Among them the most interesting are conjugated polymers which show high coloration efficiencies, low operating voltage, fast switching capabilities and the wide range of colors in both neutral and charged states, and transition metal complexes combining the electrochromic properties of transition metal ions and organic molecules or polymers. Electrochromic properties of transition metal complexes based on the redox reaction of metal ion or ligand molecule and can be modified by changing the structure of ligand molecule or the metal ion.

We present a new materials for electrochromic applications based on conjugated polymers as well as transition metal complexes. Their synthesis, properties and application as active materials in electrochromic as well as dual-functioning electrochromic and fluorochromic devices will be presented.

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Biography:

Monika Wałęsa-Chorab has completed her PhD from Adam Mickiewicz University in Poznań, Poland and postdoctoral studies from Université de Montréal, Canada. Recently she is an associated professor at Department of Chemistry, Adam Mickiewicz University, where she works on synthesis and characterization of materials for organic electronics.

Speaker Publications:

1. Engaging the Reversible Bonds of an Immobilized Styrene-Thiophene Film; Monika Wałęsa-Chorab, W. G. Skene; *Crystal Growth & Design*; DOI: 10.1021/acs.cgd.9b01235
2. New Artificial Biomimetic Enzyme Analogues based on Iron(II/III) Schiff Base Complexes: An Effect of (Benz)imidazole Organic Moieties on Phenoxazinone Synthase and DNA Recognition; Bocian, Martyna Szymbalska, Brykczynska, Kubicki; *Molecules* 24(17):3173
3. First example of asymmetrical μ -oxo bridged dinuclear iron complex with terpyridine ligand; *New Journal of Chemistry*; Sergiusz Napierała, Aleksandra Bocian, Adam Gorczyński, Maciej Kubicki; DOI: 10.1039/C9NJ02413A

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