

Synthesis and Physicochemical Properties of New Redox-active Pt(II) Complex functionalized with Flexible Chains

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The control of macroscopic physical properties linked with switchable molecular properties is fascinating targets and expected to give new functional materials. For example, Ikeda and co-workers reported a light-driven plastic motor by using molecule-based photoisomerization.¹ Irie and co-workers reported that the macroscopic change of crystals synchronously occurred with the structural change of photochromic molecules.² These studies revealed that molecular change driven by the external stimuli could link with macroscopically detectable physicochemical properties.

Previously, we reported that Pt(II) metallomesogens possessing redox-active catecholato (Cat) or 1,2-benzenedithiolato (Bdt) and 4,4'-di(3-octyltridecyl)-2,2'-bipyridyl (C8,10bpy), [Pt(Cat)(C8,10bpy)] or [Pt(Bdt)(C8,10bpy)] (Figure 1), form a hexagonal columnar ordered liquid crystalline phase and show the direct electrochemical activity.³ The combination of flexible liquid crystalline structures and redox activity must be attractive, because they have potential to allow control both molecular and macroscopic physicochemical properties, *via* controllable electron transfer processes. This presentation reports the synthesis and physicochemical properties of new platinum diimine complexes functionalized with flexible chains.

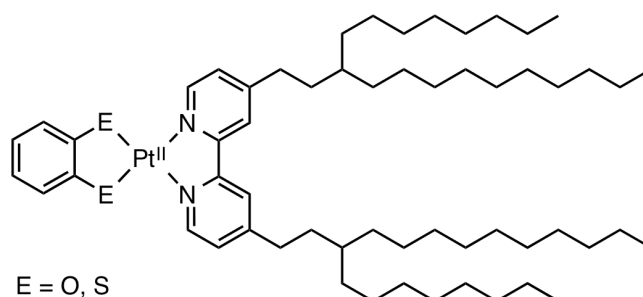


Figure 1. The structure of Pt complex

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