

Pt(II) complexes with NNC pincer ligands capable of aggregation-induced emission (AIE). Study of the effect of substituents on their photophysical properties

Durova E.V., Shakirova J.R.

Institute of Chemistry, St. Petersburg State University, Russia

e-mail: st068755@studen.spbu.ru

The increased interest in Pt (II) phosphorescent complexes is due to their potential use as agents for visualizing biological objects and sensing physiological parameters, as well as in the creation of optoelectronic devices¹.

These applications require a high concentration of emitters, which makes the development of AIE-active emitters reasonable. Moreover, the ability of phosphorescent molecules to AIE additionally increases the efficiency of emission and the depth of its penetration into biological samples².

Planar Pt (II) complexes with NNC pincer ligands and alkynyl monodentate ligands have already proven to be effective emitters³. Their planar architecture explains the ability of complexes to aggregate in the ground or excited states.

As part of this work, flat phosphorescent Pt (II) complexes with different substituents in the cyclometallated fragment were synthesized with the aim of creating biocompatible micelles based on them (**Figure 1**).

The final compounds were fully characterized using ESI-MS, 1D (1H) and 2D (1H-1H-COSY) NMR spectroscopy, and the [Pt(NNC)Me-Me] complex was studied using X-ray diffraction. The luminescent properties of all complexes were studied in acetonitrile solution and water-organic solutions. The influence of substituents (Me, Cl, OMe) in the cyclometallated fragment and aggregation processes on the photophysical properties of the obtained complexes was studied.

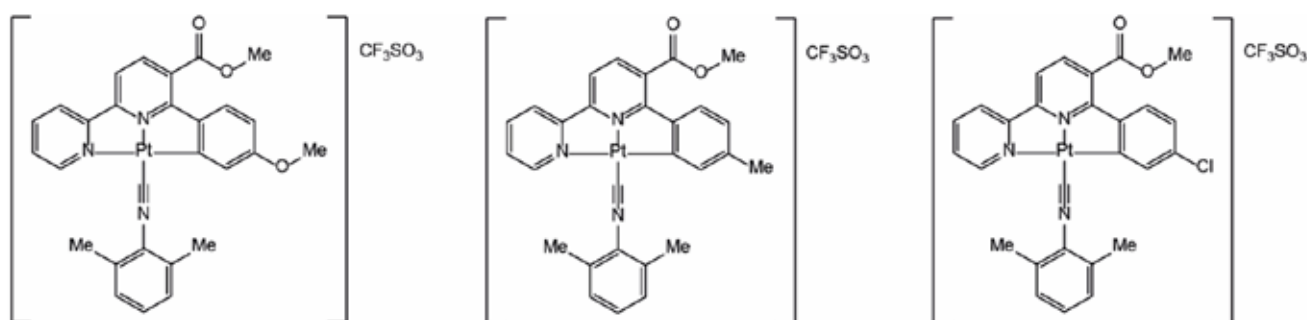


Figure 1. New Pt (II) compounds

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