NEW MACROCYCLIC ZINC(II) COMPLEXES AS NEW FLUORESCENT MATERIALS OBTAINED BY SPIN COATING METHOD

Dominika Jankowska, Magdalena Barwiołek, Tadeusz Muzioł

Faculty of Chemistry, Nicolaus Copernicus University in Torun, Gagarina 7, 87-100 Torun, Poland, dominikajankowska@doktorant.umk.pl

Macrocyclic metal complexes with Schiff bases are of great interest to researchers, thanks to various properties of importance in design and synthesis of functional molecular materials. Macrocyclic zinc(II) complexes with Schiff bases exhibit luminescence and optical properties, hence can be used as energy efficient organic layers in OLEDs and other emissive organic devices. It is well known, that zinc(II) complexes could create thin materials by using wet methods especially spin coating forming thin, homogeneous and fluorescent layers. [1,2]

A new macrocyclic zinc(II) complexes with Schiff base ligand was isolated. The compounds were characterized by the spectroscopic methods: NMR, IR, UV-ViS, XRD structure analysis and thermal analysis. Thin films of zinc(II) complexes were obtained using spin coating method. The morphology and composition of new materials were determined using SEM/EDS, AFM microscopy. The fluorescent properties of the obtained films were studied. The emission of materials in the range of 450 to 600 nm was noted.

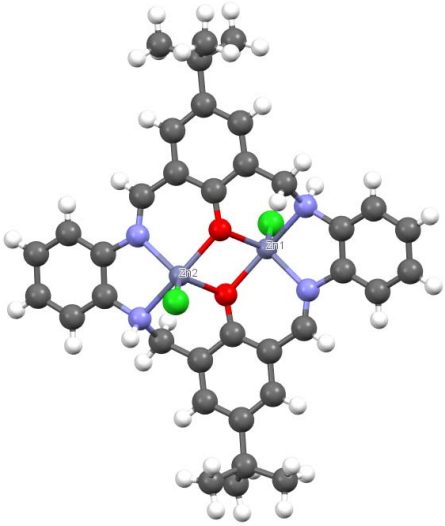

Figure 1. Structure of dinuclear macrocyclic zinc(II) complex with a numbering scheme.

[1] Jameel A. Marafie, Donal D. C. Bradley, Charlotte K. Williams, Inorg. Chem. 2017, 56, 5688−5695

[2] Leena Mandal, Samit Majumder, Sasankasekhar Mohanta, Dalton Trans., 2016, 45, 17365