

Synthesis, spectroscopic and structural properties of uranyl complexes based on bipyridine N-oxide ligands.

Autorzy

Zbigniew Hnatejko
Stefan Lis
Przemysław Starynowicz
Z. Stryła

Rok wydania

2011

Czasopismo

Polyhedron

Numer woluminu

30

Strony

880-885

DOI

10.1016/j.poly.2010.12.016

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

By using 2,2'-bipyridine N-oxide (bipyO) and 2,2'-bipyridine N,N'-dioxide (bipyO₂), three new uranyl complexes [UO₂(bipyO)SO₄] \cdot H₂O (**1**), [UO₂(bipyO)(OH)(NO₃)₂] \cdot H₂O (**2**) and [UO₂(bipyO₂)H₂O](ClO₄)₂ \cdot (**3**) were synthesized using uranyl salts including non-coordinating or weakly coordinating power of the ClO₄⁻ anion and the strongly coordinating power of NO₃⁻ and SO₄²⁻ anions. All of the compounds were characterized by CHN microanalytical procedures, infrared and luminescence spectroscopy and by single crystal X-ray diffraction. Spectroscopic studies indicate that the bipyO is bound to the uranyl group via the nitrogen and oxygen atoms. Structural analyses revealed that overall bonding pattern is different in each case: **1** is a polymer; in **2** dimeric complex molecules are formed, whereas **3** is composed of monomers. In all of the complexes, the uranium atom is in a seven-coordinate environment.

Słowa kluczowe

Complexes, O, O' and N, O'-chelating ligands, spectroscopy, structure, uranyl, xerogel

Adres publiczny

<https://doi.org/10.1016/j.poly.2010.12.016>

Strona internetowa wydawcy

<http://www.elsevier.com>