A new mixed-valence Cu^{I}/Cu^{II} three-dimensional coordination polymer constructed with an *N*,*O*-donor ligand generated *via* solvothermal synthesis: structural features and magnetic properties.

Autorzy

Andrzej Kochel

Małgorzata Hołyńska

Kamil Twaróg

Aneta Jezierska

Jarosław J. Panek

Jacek Wojaczyński

Rok wydania

2022

Czasopismo

Acta Crystallographica Section C: Structural Chemistry

Numer woluminu

C78

Strony

405-413

DOI

10.1107/s2053229622005812

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

A new mixed-valence Cu^{I}/Cu^{II} three-dimensional coordination polymer, poly[[diaquabis[μ_4-2-(pyrazin-2-yl)quinoline-4-carboxylato]dicopper(I)copper(II)] bis(tetrafluoridoborate)], $\{[Cu_3(C_{14}H_8N_3O_2)_2(H_2O)_2](BF_4)_2\}_n$, was synthesized and characterized, with 2-(pyrazin-2-yl)quinoline-4-carboxylic acid being employed as a linker ligand. The ligand was isolated as its hydrochloride salt, 4-carboxy-2-(pyrazin-2-yl)quinolin-1-ium chloride dihydrate, $C_{14}H_{10}N_3O_2^{+}\cdot Cl^{-}\cdot 2H_2O$. The compounds show luminescence at 550 nm for the ligand and at 565 nm for the polymer at 297 K. The ligand structure was rationalized by means of quantum-chemical calculations, which led to a similar conformation to that determined from X-ray diffraction studies.

Słowa kluczowe

quinolinecarboxylic acid, quinolinium chloride, photoluminescence, magnetic properties, coordination polymer, crystal structure, quantum–chemical calculations.

Adres publiczny

http://dx.doi.org/10.1107/s2053229622005812