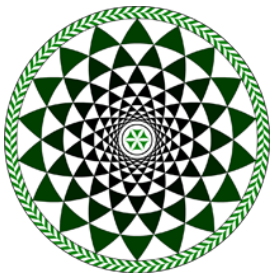

Contribution ID: **64** Type: **not specified**

Studies of magnetic and photomagnetic properties of a new member of Cu(II)-Mo(IV) photomagnetic family

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In molecular magnetism, the use of [M(CN)₈]^{n−} (M= Mo, W; n=3, 4) ions as building block for the generation of cyanido bridged coordination polymers is growing rapidly due to their potential functionalities [1]. In the paramagnetic [M(CN)₈]^{n−} (M= Mo, W; n=3] ions the metal centre provides more diffuse single occupied orbital which causes stronger magnetic exchange interaction [1,2]. On the other hand the diamagnetic [M(CN)₈]^{n−} (M= Mo, W; n=4] ions show interesting photoredox properties which make them interesting photomagnetic materials after photo irradiation [3]. Within this family, the Cu^{II}−[Mo(CN)₈]^{4−} assemblies have been extensively studied. Keeping this point in mind, we have synthesized novel coordination polymer [Cu(1,2-DAP)₂Mo(CN)₈]_n[Cu(1,2-DAP)₂H₂O]_n·3nH<sub
(1) (1,2-DAP = 1,2-diaminopropane). The X-ray crystal structure analysis reveals that (1) consists of anionic chains and cationic [Cu(1,2-DAP)₂H₂O]+ species between the chains. The magnetic properties of (1) is related to two uncoupled paramagnetic copper(II) centers. The solid state UV-vis-NIR absorption spectra have revealed the presence of the band at 430 nm for (1), which can be attributed to the MMCT band. After the irradiation of compound (1) with the light of 430 nm a photo response consisting of increase of magnetic susceptibility and magnetization at 1.8 K has been found.

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