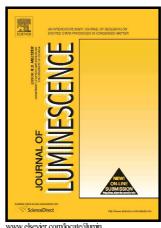
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www.elsevier.com/locate/ilumin

PII: S0022-2313(18)30007-3

https://doi.org/10.1016/j.jlumin.2018.03.041 DOI:

LUMIN15460 Reference:

To appear in: Journal of Luminescence

Received date: 2 January 2018 Revised date: 12 March 2018 Accepted date: 16 March 2018

Cite this article as: Safaa El-din H. Etaiw and Mohamed M. El-bendary, Cd(II) supramolecular coordination polymer incorporating pyrazine-2-carboxylic acid: Crystal structure, spectral characteristics and catalytic activity, Journal of Luminescence, https://doi.org/10.1016/j.jlumin.2018.03.041

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Cd(II) supramolecular coordination polymer incorporating pyrazine-2carboxylic acid: Crystal structure, spectral characteristics and catalytic

activity

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Abstract

supramolecular coordination Faint pink crystals polymer the

{[Cd₃(pyzca)₆(H₂O)₄].8H₂O}, 1 were obtained by the reaction of cadmium sulfate with pyrazine-

2-carboxylic acid (pyzcaH) as ligand. The structure of 1 was characterized by single crystal X-

ray diffraction, elemental analyses, electronic, infrared (IR), NMR spectra and thermal studies.

The SCP 1 expands along the a-axis creating 1D-chain which compressed like a sprig. The 1D-

chains extends via coordinate bonds forming 2D-layer constructing wide rectangular rings. The

2D-layers are stacked to give rise to the 3D-open framework generating voids accommodating

the guest water molecules. The catalytic behavior of 1 was investigated for the degradation of

acid blue 92 dye (AB-92). The reaction is first order with respect to AB-92 dye. Mineralization

of AB-92 was investigated by FT-IR spectra. Disodium salt of terephthalic acid

photoluminescence probing technology was carried out to identify the reactive 'OH radicals. The

kinetic data indicated that 1 are effective catalyst for degradation of AB-92. The luminescent

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