

## Accepted Manuscript

Syntheses, structures, luminescent and catalytic properties of two 3D metal-organic frameworks

Jun-Xia Xiao, De-Yun Ma

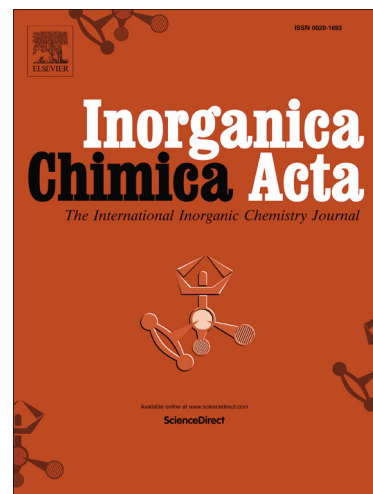
PII: S0020-1693(18)30616-9  
DOI: <https://doi.org/10.1016/j.ica.2018.07.054>  
Reference: ICA 18400

To appear in: *Inorganica Chimica Acta*

Received Date: 24 April 2018  
Revised Date: 26 July 2018  
Accepted Date: 30 July 2018

Please cite this article as: J-X. Xiao, D-Y. Ma, Syntheses, structures, luminescent and catalytic properties of two 3D metal-organic frameworks, *Inorganica Chimica Acta* (2018), doi: <https://doi.org/10.1016/j.ica.2018.07.054>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## Syntheses, structures, luminescent and catalytic properties of two 3D metal-organic frameworks

Jun-Xia Xiao<sup>a</sup>, De-Yun Ma<sup>b\*</sup>

<sup>a</sup> School of Environmental and Chemical Engineering, Zhaoqing University, Zhaoqing 526061, P. R. China

<sup>b</sup> School of Food and Pharmaceutical Engineering, Zhaoqing University, Zhaoqing 526061, P. R. China

\* Corresponding author. Tel.: +86 758 2739629; fax: +86 758 2739589. E-mail address: [mady82@126.com](mailto:mady82@126.com) (D.Y. Ma).

### Abstract

Two new 3D Zn(II)/Pb(II)-based MOFs,  $\{[\text{Zn}_9(\text{mbpdc})_7(3,3'\text{-dmbpy})_2(\mu_3\text{-OH})_4]\cdot(\text{H}_2\text{O})_5\}_n$  (**1**), and  $\{[\text{Pb}_{11}(\text{mbpdc})_7(\mu_4\text{-O})_3(\mu_3\text{-OH})_2]\cdot(\text{H}_2\text{O})\}_n$  (**2**) ( $\text{H}_2\text{mbpdc}$  = 2-methyl-4,4'-biphenyldicarboxylic acid, 3,3'-dmbpy = 3,3'-dimethyl-4,4'-bipyridine) have been synthesized and were structurally characterized. Complex **1** exhibits 3D network with 10-connected **ile** topology and is comprised of pentanuclear ( $\text{Zn}_5\text{N}_2\text{O}_{18}$ ) units bridged by mbpdc ligands and further pillared by 3,3'-dmbpy struts. Complex **2** is a new 3D lead(II) MOF constructed by dodecanuclear  $\{\text{Pb}_{12}(\text{COO})_{16}(\mu_3\text{-OH})_2(\mu_4\text{-O})_4\}$  units and mbpdc ligands. Furthermore, the luminescence and the catalytic activities of **1-2** for the degradation of methyl orange in a Fenton-like process have also investigated.

**Keyword:** Metal-organic Frameworks, 2-methyl-4,4'-biphenyldicarboxylate, Luminescent property, Catalytic activity

Download English Version:

<https://daneshyari.com/en/article/7750160>

Download Persian Version:

<https://daneshyari.com/article/7750160>

[Daneshyari.com](https://daneshyari.com)