



This is a repository copy of *Highly selective detection of Hg<sup>2+</sup> and MeHgI by di-pyridin-2-yl-[4-(2-pyridin-4-yl-vinyl)-phenyl]-amine and its zinc coordination polymer.*

White Rose Research Online URL for this paper:  
<http://eprints.whiterose.ac.uk/107865/>

Version: Supplemental Material

---

**Article:**

Chen, M.M., Chen, L., Li, H.X. et al. (2 more authors) (2016) Highly selective detection of Hg<sup>2+</sup> and MeHgI by di-pyridin-2-yl-[4-(2-pyridin-4-yl-vinyl)-phenyl]-amine and its zinc coordination polymer. *Inorganic Chemistry Frontiers*, 3 (10). pp. 1297-1305.

<https://doi.org/10.1039/c6qi00160b>

---

**Reuse**

Unless indicated otherwise, fulltext items are protected by copyright with all rights reserved. The copyright exception in section 29 of the Copyright, Designs and Patents Act 1988 allows the making of a single copy solely for the purpose of non-commercial research or private study within the limits of fair dealing. The publisher or other rights-holder may allow further reproduction and re-use of this version - refer to the White Rose Research Online record for this item. Where records identify the publisher as the copyright holder, users can verify any specific terms of use on the publisher's website.

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.



[eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk)  
<https://eprints.whiterose.ac.uk/>

## Electronic Supplementary Information

### Highly selective detection of Hg<sup>2+</sup> and MeHgI by di-pyridin-2-yl-[4-(2-pyridin-4-yl-vinyl)-phenyl]-amine and its zinc coordination polymer

Min-Min Chen,<sup>ab</sup> Liang Chen,<sup>a</sup> Hong-Xi Li,<sup>\*a</sup> Lee Brammer<sup>\*c</sup> and Jian-Ping Lang<sup>\*ab</sup>

<sup>a</sup> State and Local Joint Engineering Laboratory for Novel Functional Polymeric Materials, College of Chemistry, Chemical Engineering and Materials Science, Soochow University, Suzhou 215123, Jiangsu, People's Republic of China

<sup>b</sup> State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai 200032, People's Republic of China

<sup>c</sup> Department of Chemistry, University of Sheffield, Brook Hill, Sheffield S3 7HF, UK

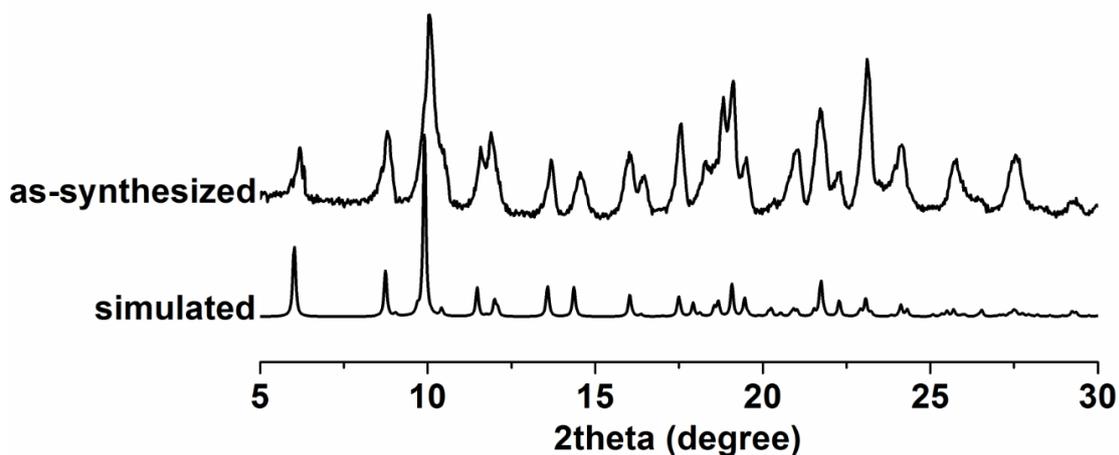
\*E-mail: lihx@suda.edu.cn

\*E-mail: lee.brammer@sheffield.ac.uk

\*E-mail: jplang@suda.edu.cn

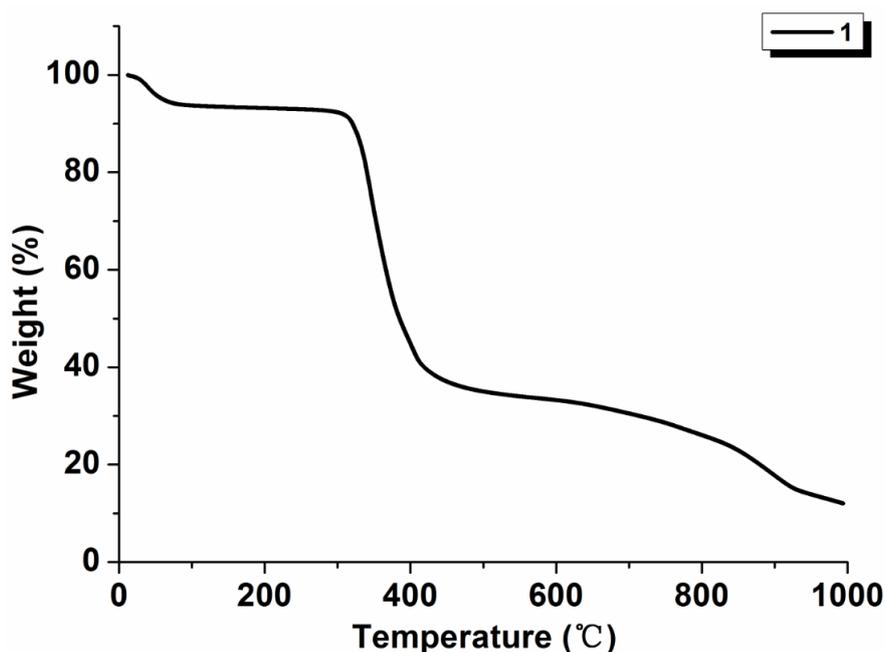
## Table of Contents

<b>Fig. S1</b>	PXRD patterns for <b>1</b> . .....	S3
<b>Fig. S2</b>	The TGA curve for <b>1</b> . .....	S3
<b>Fig. S3</b>	Plot of the fluorescence intensity of <b>1</b> dispersed in water at different concentrations of (a) $\text{Hg}^{2+}$ ; (b) MeHgI. ....	S4
<b>Fig. S4</b>	The XPS spectra for two samples.....	S5



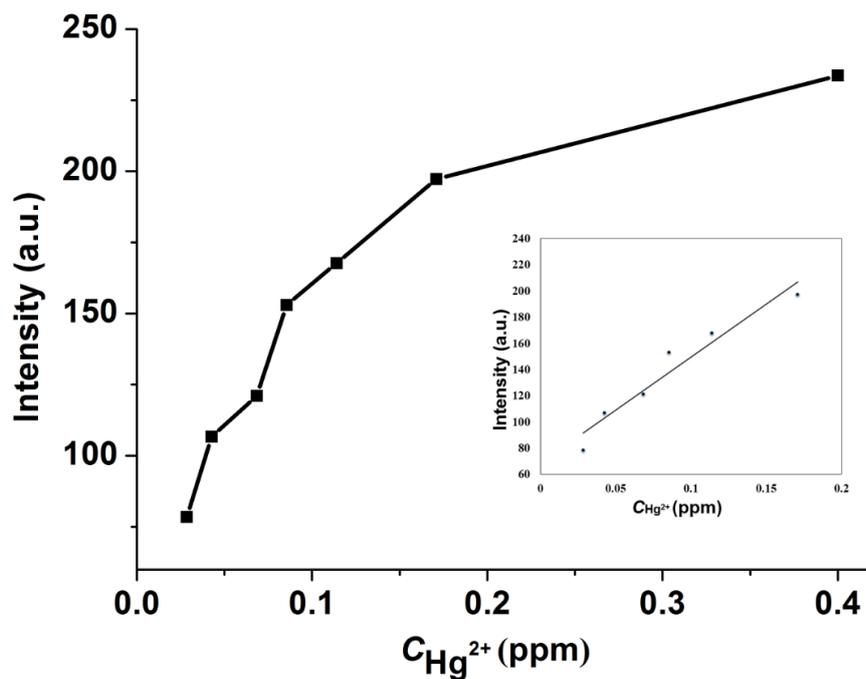
**Fig. S1** PXRD patterns for **1**.

The powder X-ray diffraction (PXRD) measurements were carried out on a PANalytical X'Pert PRO MPD system (PW3040/60) using Cu-K $\alpha$  radiation ( $\lambda = 1.54050 \text{ \AA}$ ). The data were collected at room temperature in flat-plate mode in a  $2\theta$  range of 5-30° with a scan speed of 20 °/min. The operating power was 40kV/40mA.

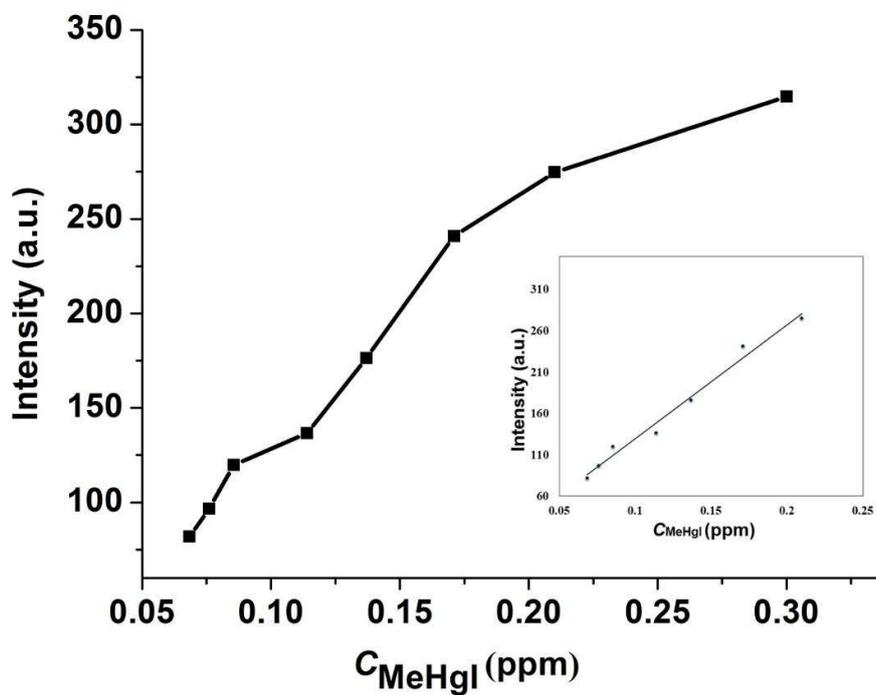


**Fig. S2** The TGA curve for **1** (scan rate 5 °C/min)

The framework stability of **1** was investigated by thermogravimetric analysis (TGA) under an ambient atmosphere (Fig. S2). The first weight loss from 20 °C to 70 °C corresponds to the loss of solvent molecules. The main weight loss produced in the temperature range 300–900 °C can be attributed to the decomposition of the organic linkers. The residual species was assumed to be ZnO (12.61% vs calcd. 12.92 %).

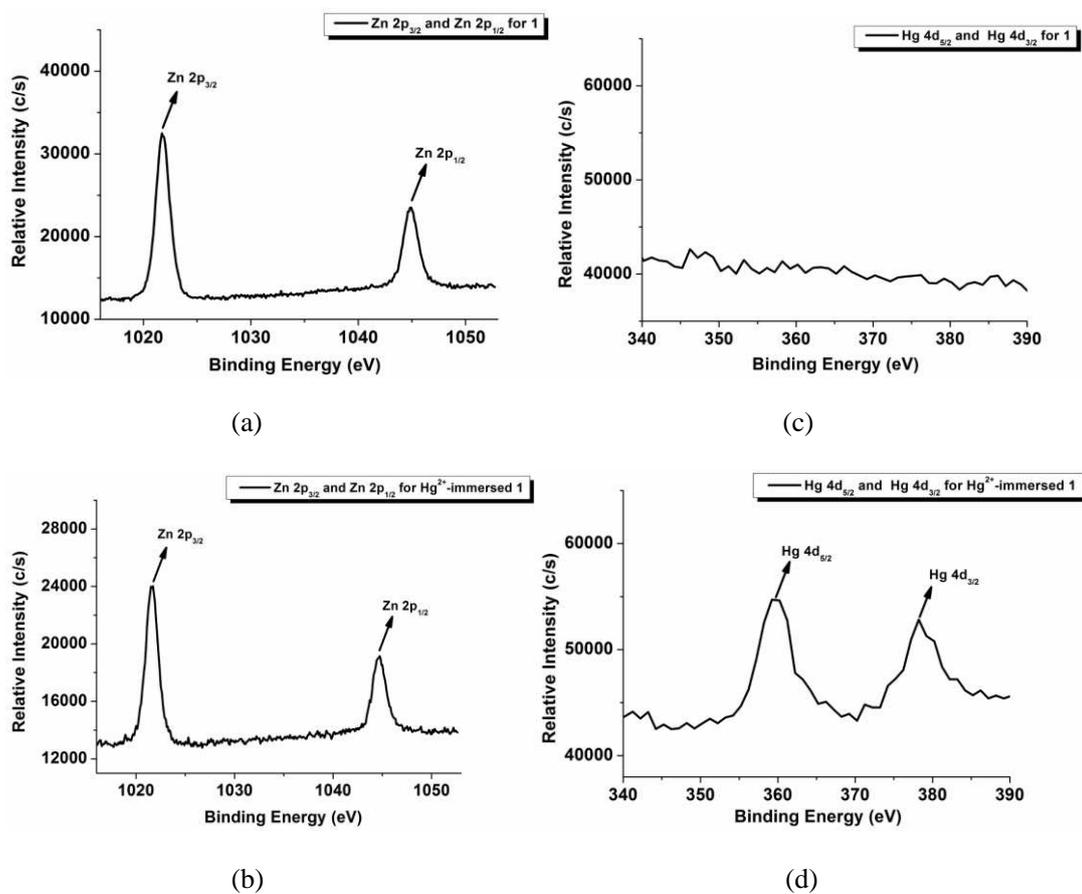


(a)



(b)

**Fig. S3** Plot of the fluorescence intensity of **1** dispersed in water at different concentrations of (a)  $\text{Hg}^{2+}$ ; (b) MeHgI. Inset: linear relation between the fluorescence intensity and the concentrations of (a)  $\text{Hg}^{2+}$  in the range of 0.02–0.17 ppm ( $R^2 = 0.94$ ); (b) MeHgI in the range of 0.06–0.21 ppm ( $R^2 = 0.98$ ).



**Fig. S4** The XPS spectra for four samples. (a) The Zn 2p<sub>3/2</sub> and Zn 2p<sub>1/2</sub> core level spectrum for **1**; (b) The Zn 2p<sub>3/2</sub> and Zn 2p<sub>1/2</sub> core level spectrum for Hg<sup>2+</sup>-immersed **1**; (c) The Hg 4d<sub>5/2</sub> and Hg 4d<sub>3/2</sub> core level spectrum for **1**; (d) The Hg 4d<sub>5/2</sub> and Hg 4d<sub>3/2</sub> core level spectrum for Hg<sup>2+</sup>-immersed **1**.