

## Accepted Manuscript

Title: Highly selective and reversible colorimetric detection of mercury ions by a hydrophilic cycloruthenated complex in water

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PII: S0925-4005(14)00496-1  
DOI: <http://dx.doi.org/doi:10.1016/j.snb.2014.04.085>  
Reference: SNB 16851

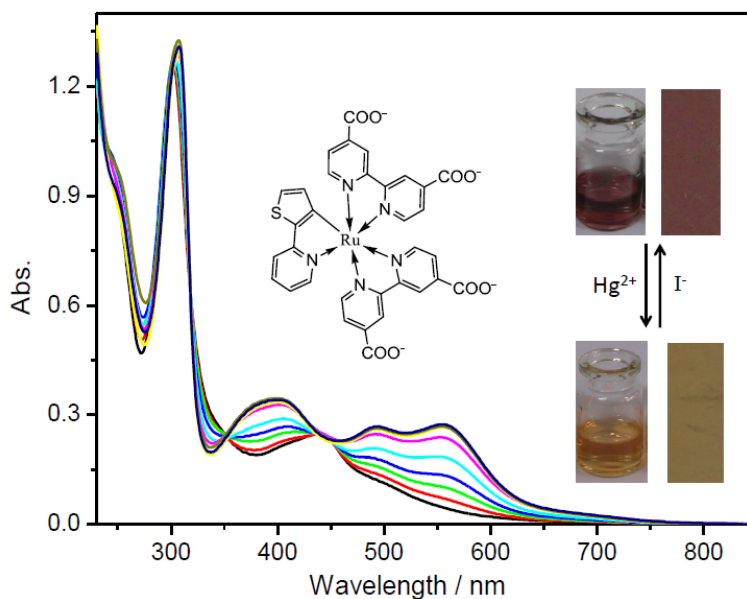
To appear in: *Sensors and Actuators B*

Received date: 1-3-2014  
Revised date: 11-4-2014  
Accepted date: 26-4-2014

Please cite this article as: X. Li, X. Su, Z. Shi, X. Cheng, S. Liu, Q. Zhao, Highly selective and reversible colorimetric detection of mercury ions by a hydrophilic cycloruthenated complex in water, *Sensors and Actuators B: Chemical* (2014), <http://dx.doi.org/10.1016/j.snb.2014.04.085>

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## Graphic Abstract- Pictogram



A new hydrophilic cyclometallated ruthenium complex based on 2-(2-thienyl)pyridine was successfully synthesized to selectively detect mercury ion in water. Only upon addition of mercury ions, the aqueous solution of the complex exhibit very remarkable color change from red to yellow with the detection limit of 0.59  $\mu\text{M}$ . Interestingly, the complex can be recovered from complex- $\text{Hg}^{2+}$  both in solution and silica gel plates by adding  $\text{I}^-$ . Therefore, it can serve as a reusable and “naked-eye” indicator for  $\text{Hg}^{2+}$  in natural environment.

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