

Accepted Manuscript

Title: A highly stable and luminescent mononuclear Cu(I) bis-{5-*tert*-butyl-3-(6-methyl-2-pyridyl)-1*H*-1,2,4-triazole} complex

Author: Yan-Sheng Luo Jing-Lin Chen Xue-Hua Zeng Lu Qiu Li-Hua He Sui-Jun Liu He-Rui Wen



PII: S1001-8417(16)30454-5
DOI: <http://dx.doi.org/doi:10.1016/j.cclet.2016.12.015>
Reference: CCLET 3921

To appear in: *Chinese Chemical Letters*

Received date: 2-9-2016
Revised date: 22-10-2016
Accepted date: 9-11-2016

Please cite this article as: Yan-Sheng Luo, Jing-Lin Chen, Xue-Hua Zeng, Lu Qiu, Li-Hua He, Sui-Jun Liu, He-Rui Wen, A highly stable and luminescent mononuclear Cu(I) bis-{5-*tert*-butyl-3-(6-methyl-2-pyridyl)-1*H*-1,2,4-triazole} complex, Chinese Chemical Letters <http://dx.doi.org/10.1016/j.cclet.2016.12.015>

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.

Original article

A highly stable and luminescent mononuclear Cu(I) bis-{5-*tert*-butyl-3-(6-methyl-2-pyridyl)-1*H*-1,2,4-triazole} complex

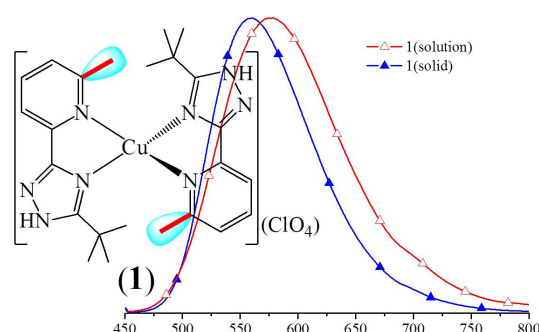
Yan-Sheng Luo, Jing-Lin Chen*, Xue-Hua Zeng, Lu Qiu, Li-Hua He, Sui-Jun Liu, He-Rui Wen

School of Metallurgy and Chemical Engineering, Jiangxi University of Science and Technology, Ganzhou 341000, China

* Corresponding author.

E-mail address: gzchenjinglin@126.com

Graphical Abstract



A new luminescent mononuclear Cu(I) bis-{5-*tert*-butyl-3-(6-methyl-2-pyridyl)-1*H*-1,2,4-triazole} complex has been synthesized and characterized. It is shown that the introduction of the methyl group at the *ortho*-position of the pyridyl ring is very important and helpful for improving the stability and luminescence properties of Cu(I) complexes.

ABSTRACT

A new emissive mononuclear homoleptic Cu(I) complex of 5-*tert*-butyl-3-(6-methyl-2-pyridyl)-1*H*-1,2,4-triazole (bmtzH), [Cu(bmtzH)₂](ClO₄) (**1**), has been synthesized by treatment of [Cu(PPh₃)₂(CH₃CN)₂](ClO₄) or [Cu(CH₃CN)₄](ClO₄) with the bmtzH ligand. It is revealed that complex **1** displays a distorted N₄ tetrahedral arrangement formed by two bmtzH chelates, in which bmtzH adopts a neutral bidentate chelating coordination mode using the N atom of the pyridyl ring and the 4-N not 2-N atom of the 1,2,4-triazolyl ring. It is shown that complex **1** is highly stable and exhibits good luminescence properties in solution and solid states at room temperature due to the introduction of a methyl group at the *ortho*-position of the pyridyl ring.

Keywords:

Cu(I) complex
1,2,4-Triazole
6-Methyl-2-pyridyl
Luminescence
Crystal structure

1. Introduction

There has been a rapidly increasing interest in the fundamental properties of emissive transition metal complexes, because of their potential applications in organic light-emitting devices, light-emitting electrochemical cells, chemical sensors/probes, and biological

Download English Version:

<https://daneshyari.com/en/article/5142939>

Download Persian Version:

<https://daneshyari.com/article/5142939>

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