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# Syntheses, structures and reactivity of dinuclear organoruthenium-nickel complexes with *N,N'*-bis(2-thiobenzylidene)-1,2-phenylenediaminato (tsalphen) ligand

Ai-Quan Jia, Li-Hua Tang, Xian-Ping Dong, Zhifeng Xin, and Qian-Feng Zhang\*

*Institute of Molecular Engineering and Applied Chemistry, Anhui University of Technology,  
Ma'anshan, Anhui 243002, P. R. China*

## Abstract

Treatment of metalloligand [Ni(tsalphen)] (tsalphen = *N,N'*-bis(2-thiobenzylidene)-1,2-phenylenediaminato) with  $[(\eta^6\text{-}p\text{-cymene})\text{RuCl}(\mu\text{-Cl})_2]$  or  $[\text{CpRu}(\text{PPh}_3)_2\text{Cl}]$  afforded cationic “Ni( $\mu\text{-S}$ )<sub>2</sub>Ru” bimetallic complexes  $[(\eta^6\text{-}p\text{-cymene})\text{Ru}\{\text{Ni}(\text{tsalphen})\}(\text{MeCN})](\text{OTf})_2$  (**1**) and  $[\text{CpRu}\{\text{Ni}(\text{tsalphen})\}(\text{PPh}_3)_2](\text{NiCl}_4)\cdot 4\text{MeOH}$  (**2**), respectively, which are characterized by single-crystal X-ray diffraction, and their catalytic activity for acetalation of benzaldehyde in the presence of H<sub>2</sub> was also investigated.

**Keywords:** Ni( $\mu\text{-S}$ )<sub>2</sub>Ru complex; Heterobimetallic; Metalloligand; Organoruthenium complex; Catalytic activity

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\* Corresponding author. E-mail: zhangqf@ahut.edu.cn (Q.-F. Zhang).

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