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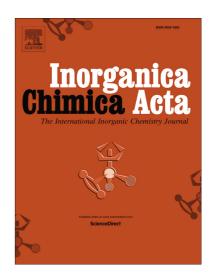
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Syntheses, structures and catalytic properties of ruthenium(II) nitrosyl complexes with bidentate and tetradentate Schiff base ligands

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Treatment of Ru(NO)Cl₃·xH₂O with 1 equiv. bidentate Schiff bases in the presence of triethylamine in DMF/THF afforded a series of anionic ruthenium(II) nitrosyl complexes of the type [Et₃NH][Ru(κ^2 -N,O-L^R)(NO)Cl₃] (HL^R = 2-butyliminomethyl-phenol **1**, 2-(benzylimino-methyl)-phenol **2**, 2-[(4-chloro-phenylimino)-methyl]-phenol **3**, 2-[(4-nitro-phenylimino)-methyl]-phenol **4**, 2-[(2,6-diisopropyl-phenylimino)-methyl]-phenol **5**). Interaction of Ru(NO)Cl₃·xH₂O and 1 equiv. tetradentate Schiff bases under the same condition led to isolation of an anionic complex [Et₃NH][Ru(κ^2 -N,O-L-CH₂CH₂-NOH)-(NO)Cl₃] (HL-CH₂CH₂-NOH = N,N'-disalicylidene-1,2-ethanediamine **6**) and a neutral complex [Ru(salen-phn)(NO)Cl] (H₂salen-phn = N,N'-disalicylidene-1,2-phenyldiamine **7**). The molecular structures of **1**-½C₂H₅OH, **2**-**6**, and **7**-CH₂Cl₂ have been determined by single-crystal X-ray crystallography. Investigation of the catalytic properties of ruthenium(II) nitrosyl complexes **1**-**7** showed that they are efficient catalytic precursors for the transfer hydrogenation of acetophenone.

Keywords: Ruthenium complex; Schiff base; Nitrosyl ligand; Synthesis; Crystal structure

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