

Accepted Manuscript

Syntheses, structures, and electrochemical properties of iron(II) and ruthenium(IV)-hydrido complexes with ferrocenylsilyl ligand(s)

Masumi Itazaki, Yuka Shigesato, Makiko Minakata, Sho Ishii, Akio Ichimura, Hiroshi Nakazawa



PII: S0022-328X(17)30349-2

DOI: [10.1016/j.jorganchem.2017.05.045](https://doi.org/10.1016/j.jorganchem.2017.05.045)

Reference: JOM 19971

To appear in: *Journal of Organometallic Chemistry*

Received Date: 20 February 2017

Revised Date: 18 May 2017

Accepted Date: 20 May 2017

Please cite this article as: M. Itazaki, Y. Shigesato, M. Minakata, S. Ishii, A. Ichimura, H. Nakazawa, Syntheses, structures, and electrochemical properties of iron(II) and ruthenium(IV)-hydrido complexes with ferrocenylsilyl ligand(s), *Journal of Organometallic Chemistry* (2017), doi: 10.1016/j.jorganchem.2017.05.045.

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.

Article

Syntheses, Structures, and Electrochemical Properties of Iron(II) and Ruthenium(IV)-Hydrido Complexes with Ferrocenylsilyl Ligand(s)

Masumi Itazaki,* Yuka Shigesato, Makiko Minakata, Sho Ishii, Akio Ichimura,
and Hiroshi Nakazawa*

*Department of Chemistry, Graduate School of Science, Osaka City University,
Sugimoto 3-3-138, Sumiyoshi-ku, Osaka 558-8585, Japan.*

Received 2017

Abstract: An iron methyl complex $\text{Cp}^*(\text{CO})_2\text{Fe}(\text{Me})$ reacts with silylferrocene HSiR_2Fc ($\text{Fc} = \text{C}_5\text{H}_4\text{FeC}_5\text{H}_5$, $\text{R} = \text{Me}, \text{Ph}$) to afford the iron complex with a ferrocenylsilyl ligand, $\text{Cp}^*(\text{CO})_2\text{Fe}(\text{SiR}_2\text{Fc})$ ($\text{R} = \text{Me}$: **1**, Ph : **2**). On the other hand, the reactions of a ruthenium methyl complex $\text{Cp}^*(\text{CO})(\text{py})\text{Ru}(\text{Me})$ with 2 equiv of silylferrocene HSiR_2Fc ($\text{R} = \text{Me}, \text{Ph}$) afford the ruthenium(IV) hydrido complexes with two ferrocenylsilyl ligands, $\text{Cp}^*(\text{CO})\text{Ru}(\text{H})(\text{SiR}_2\text{Fc})_2$ ($\text{R} = \text{Me}$: **3**, Ph : **4**). Complexes **1–4** were fully characterized using ^1H and $^{13}\text{C}\{^1\text{H}\}$ NMR measurements, elemental analyses, and these structures were determined by X-ray crystallography. The cyclic voltammograms of **3** and **4** showed two well-resolved reversible waves, suggesting electronic communication of two ferrocenyl units through the $\text{Ru}(\text{IV})$ center.

Keywords: Iron, Ruthenium, Silylferrocene, Crystal structures, Cyclic voltammetry

Download English Version:

<https://daneshyari.com/en/article/5152949>

Download Persian Version:

<https://daneshyari.com/article/5152949>

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