## **Supporting Information**

For

## $(\mu - \eta^2 : \eta^2$ -Disulfido)dinickel(II) complexes supported by 6-methyl-TPA ligands

Atsushi Kunisita,<sup>†</sup> Masayuki Inosako,<sup>‡</sup> Minoru Kubo,<sup>§</sup> Takashi Ogura,<sup>§</sup> Hideki Sugimoto,<sup>†</sup> and Shinobu Itoh<sup>†,\*</sup>

<sup>†</sup>Department of Material and Life Science, Division of Advanced Science and Biotechnology, Graduate School of Engineering, Osaka University, 2-1 Yamada-oka, Suita, Osaka 565-0871,

Japan

 \*Department of Chemistry, Graduate School of Science, Osaka City University, 3-3-138 Sugimoto, Sumiyoshi-ku, Osaka 558-8585, Japan
\*Research Institute of Picobiology, Graduate School of Life Science, University of Hyogo, 3-2-1 Kouto, Kamigori-cho, Ako-gun, Hyogo 678-1297, Japan Electronic Supplementary Information for Dalton Transactions This journal is  $\ensuremath{\mathbb{C}}$  The Royal Society of Chemistry 2009





**Fig S1**. <sup>1</sup>H NMR spectrum of **1**<sup>0</sup> in CD<sub>3</sub>CN at 25 °C. Spectrum is referenced to the residual proton of solvent CHD<sub>2</sub>CN at 1.94 ppm.

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Fig. S2



**Fig S2**. <sup>1</sup>H NMR spectrum of  $1^1$  in CD<sub>3</sub>CN at 25 °C. Spectrum is referenced to the residual proton of solvent CHD<sub>2</sub>CN at 1.94 ppm.

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Fig S3. <sup>1</sup>H NMR spectrum of  $1^2$  in CD<sub>3</sub>CN at 25 °C. Spectrum is referenced to the residual proton of solvent CHD<sub>2</sub>CN at 1.94 ppm.

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Fig. S4



**Fig S4**. <sup>1</sup>H NMR spectrum of **1**<sup>3</sup> in CD<sub>3</sub>CN at 25 °C. Spectrum is referenced to the residual proton of solvent CHD<sub>2</sub>CN at 1.94 ppm.

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Fig. S5 Spectral changes for the reaction of 2<sup>o</sup> (1.0 x 10<sup>-4</sup> M) and PPh<sub>3</sub> (1.0 x 10<sup>-4</sup> M) in CH<sub>2</sub>Cl<sub>2</sub> at 30 °C. Inset: Second–order plot based on the absorption change at 359 nm.

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**Fig. S6** (A) Spectral changes of the reaction of  $2^2$  (1.0 x  $10^{-4}$  M) and PPh<sub>3</sub> (1.5 x  $10^{-2}$  M) in CH<sub>2</sub>Cl<sub>2</sub> at 30 °C. Inset: first–order plot based on the absorption change at 360 nm. (B) Plot of  $k_{obs}$  vs [PPh<sub>3</sub>]

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Fig. S7 (A) Spectral changes of the reaction of 2<sup>3</sup> (1.0 x 10<sup>-4</sup> M) and PPh<sub>3</sub> (1.0 x 10<sup>-3</sup> M) in CH<sub>2</sub>Cl<sub>2</sub> at 30 °C. Inset: first–order plot based on the absorption change at 360 nm. (B) Plot of k<sub>obs</sub> vs [PPh<sub>3</sub>]