

in the form of one diastereomer **2**, which was isolated from the reaction mixture due to its low solubility in tetrahydrofuran (yield 37%). Treatment of complex **2** with pyridine gave a bispyridine complex **3** stable in air.

The structures of the compounds obtained were confirmed by ^1H , ^{11}B , and ^{13}C spectroscopy and elemental analysis. The structure of bis-adduct **3** was established by X-ray diffraction analysis.

Compounds 1a,b, b.p. 179–182 °C ($2 \cdot 10^{-2}$ Torr), yield 60%, n_D^{20} 1.5170. Found (%): C, 74.80; H, 10.49; B, 6.00. $\text{C}_{22}\text{H}_{36}\text{B}_2\text{O}_2$. Calculated (%): C, 74.61; H, 10.25; B 6.10. ^1H NMR (CDCl_3), δ : 0.78–2.5 (m, 32 H, H aliphatic); 3.61 (s, 3 H, OMe); 5.39 (m, 1 H, HC=C). ^{13}C NMR (CDCl_3), δ : 24.3 and 25.5 (C-2, C-4); 27.2 (CH_2CH_2); 27.5 and 29.2 (C-1, C-5); 32.7 and 37.3 (C-8, C-9); 37.5 ($\text{CH}_2=\text{C}=\text{C}$); 127.9 ($\text{CH}=\text{C}$); 134.0 ($\text{CH}=\text{C}$).

Compound 2, m.p. 188–189 °C, yield 37%. ^{11}B NMR ($\text{THF}-d_8$), δ : 11.8. ^{13}C NMR ($\text{THF}-d_8$), δ : 27.8 ($\text{CH}_2=\text{THF}$); 28.6, 30.0 and 40.2 (C-2, C-8, C-9); 36.1, 36.5 and 37.7 (C-3, C-5, C-7); 29.9, 35.8, 43.3 and 43.9 (CH_2); 69.6 ($\text{CH}_2\text{O}-\text{THF}$).

Compound 3, m.p. 214–215 °C (from ethanol), yield 72%. Found (%): C, 79.59; H, 10.08; B, 4.28. $\text{C}_{30}\text{H}_{42}\text{B}_2\text{N}_2$. Calculated (%): C, 79.67; H, 9.36; B, 4.78. ^{13}C NMR ($\text{C}_5\text{D}_5\text{N}$), δ : 25.8, 34.9 and 39.9 (C-2, C-8, C-9); 29.0, 32.2, 40.5 and 41.6 (CH_2); 32.8, 33.5 and 35.0 (C-3, C-5, C-7); 124.0, 137.9, and 143.6 (Py).

This work was financially supported by the Russian Foundation for Basic Research (Project No. 96-03-32555) and the Government of the Russian Federation (Support for Leading Scientific Schools, Project No. 96-15-97289).

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Received December 29, 1997

First example of a binuclear complex with the Pt—Re bond containing bridged nitrogen atoms

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We have found that the reaction of $\text{Re}(\text{CO})_5\text{Cl}$ with PtL_2 (**1**), where $\text{L} = 1,2\text{-N}(\text{NPh})\text{C}_6\text{H}_4$ (compound **1** was obtained by the reaction of K_2PtCl_4 with $1,2\text{-NH}_2(\text{NPh})\text{C}_6\text{H}_4$ in the presence of KOH), under UV irradiation in *m*-xylene at 80 °C results in the formation of a diamagnetic heterobimetallic complex $(\text{OC})\text{Pt}[\mu\text{-N,N'}\text{-N}(\text{NPh})\text{C}_6\text{H}_4]_2\text{ReCl}[\text{NH}(\text{NPh})\text{C}_6\text{H}_4]$ (**2**), which was isolated as a solvate with a benzene molecule as one of the reaction products by column chromatography using benzene as the eluent (Kieselgel 60, Merk, 70–230 Mesh ATSM) in 28% yield. The IR spectrum of compound **2** contains only one band of CO (2025 cm^{-1}). According to the X-ray diffraction data of

brown single crystals of complex **2** (space group $P\bar{1}$, $a = 11.290(3)$, $b = 12.191(3)$, $c = 14.627(4)$ Å, $\alpha = 83.98(2)^\circ$, $\beta = 73.69(2)^\circ$, $\gamma = 82.67(2)^\circ$, $V = 1911.3(9)$ Å³, $Z = 2$, $R = 0.031$), the molecule with two chelate bridging ligands (Fig. 1) contains bond between the Pt^{I} and Re^{II} ions with length 3.055(1) Å. In these ligands, the imide nitrogen atoms are bound to both metals ($\text{Pt}-\text{N}$ 2.006(6), 2.004(6) Å, $\text{Re}-\text{N}$ 2.019(5), 1.894(5) Å, $\text{N}=\text{C}$ 1.339(10), 1.363(11) Å), and the N atoms of the NPh group close the chelate coordination of the ligands to the Re and Pt atoms, respectively ($\text{Pt}-\text{N}$ 2.026(8) Å, $\text{Re}-\text{N}$ 2.076(5) Å). Despite this method of bonding, both of the L ligands have the quinoid structure ($\text{N}=\text{C}$ 1.336(11),

Translated from *Izvestiya Akademii Nauk. Seriya Khimicheskaya*, No. 4, pp. 751–752, April, 1998.

1066-5285/98/4704-0729 \$20.00 © 1998 Plenum Publishing Corporation

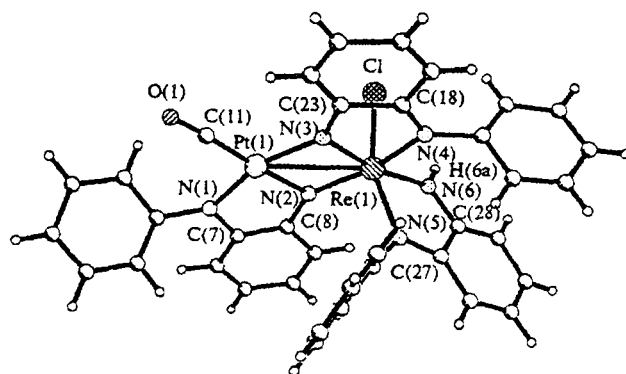
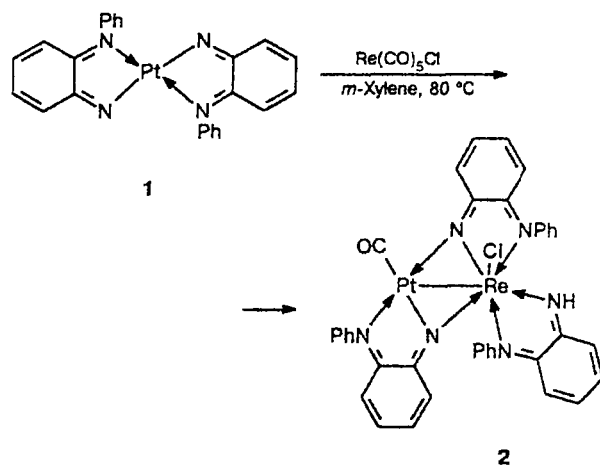


Fig. 1. Structure of complex 2.

1.396(12) Å), which is also observed^{1,2} in the starting complex 1, as well as the third protonated ligand bound to the Re atom only (Re—N 1.997(9), 2.023(9) Å, N=C 1.346(11), 1.359(11) Å, N—H 0.91(2) Å) (the H atom was objectively revealed from the Fourier synthesis and refined). As a result, the Pt atom, which is bound to the CO group (Pt—C 1.844(9) Å, C—O 1.148(15) Å, Pt—C—O angle 175.3(11)°), gains a planar-square environment, and the rhenium atom with the halide ligand (Re—Cl 2.344(2) Å) acquires an octahedral environment.

It should be mentioned in conclusion that this is the first example of using complex 1 as an unusual unsaturated ligand with respect to the other metal-containing fragment.

This work was financially supported by the Russian Academy of Sciences (Project Nos. 96-03-33171 and 96-15-96994).

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Received January 27, 1998