LETTERS
TO THE EDITOR

Synthesis and Crystalline Structure of Palladium(II) Mononuclear Trifluoroacetate Complex

A. V. Eremin^{a,b}, D. D. Vaulina^a, M. A. Stepanova^a, and A. N. Belyaev^a

^a St. Petersburg State Institute of Technology, Moskovskii pr. 26, St. Petersburg, 190013 Russia
e-mail: ha9room@gmail.com

^b Almazov Federal Center of Heart, Blood, and Endocrinology, St. Petersburg, Russia

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Palladium acetate [1] is one of compounds, which found wide application both in laboratory practice and in industry. It is actively used as a precursor in syntheses of other palladium complexes [2]. On heating or irradiation the palladium acetate is readily reduced to form thin films or colloids and nanoparticles [3].

Complexes (N $\bar{N}$ N)PdL₂ [N $\bar{N}$ N is a bidentate nitrogen-containing aromatic ligand: 1,10-phenanthroline (phen), 2,2'-dipyridyl, or their derivatives] are capable to form compounds with dioxygen or binuclear oxo(hydroxo) species active in the aerobic oxidation reactions of organic substrates [4].

In this work we present the synthesis and the X-ray crystal analysis (XCA) data of a new palladium(II) mononuclear trifluoroacetate complex [Pd(phen)·(CF₃COO)₂] (**I**). Complex **I** crystallizes in the monoclinic system with *P*-1 space group; *a* 8.4941(9), *b* 19.312(2), *c* 12.9728(10) Å, β 127.46(0)°, *V* 1689.14(648) Å³, *Z* 4, and *R* 3.85%. The crystal structure of complex **I** involves stack interactions both between palladium atoms (Pd···Pd 3.322 Å) and phenanthroline ligands (π–π interactions, average interplanar distance of 3.42 Å) of neighboring molecules.

The basic fragment of the complex **I** structure is a distorted square-planar fragment formed by nitrogen atoms of 1,10-phenanthroline and oxygen atoms of trifluoroacetate coordinated monodentately to the

central palladium atom (angles: N¹PdO¹ 96.79, N¹PdN² 82.25, N²PdO⁴ 92.36, and O¹PdO⁴ 88.45°).

Bis(O-trifluoroacetate)1,10-phenanthrolinepalladium(II). To 150 mg (0.419 mmol) of Pd(phen)Cl₂, obtained by the modified procedure [5] and suspended in 20 ml of acetonitrile, 185.3 mg (0.839 mmol) of CF₃COOAg dissolved in a minimal amount of acetonitrile was added. After filtering-off the precipitated AgCl, the reaction mixture was evaporated in air at room temperature. Yellow needle-like crystals precipitated from the solution in some days. Yield ~30% (counting on Pd). The complex is readily soluble in alcohol and acetonitrile. IR spectrum (KBr), cm⁻¹: 1679; 1516; 1430; 1403; 1209; 1132; 843; 806; 725; 716. Found, %: C 37.8; H 1.72; Pd 21.00; N 5.14. C₁₆H₈F₆N₂O₄Pd. Calculated, %: C 37.49; H 1.57; Pd 20.76; N 5.46.

Crystallographic data for complex **I** are deposited in the Cambridge bank of structural data (CCDC 773035).

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