

# Synthesis, structure, and spectral properties of copper(II), platinum(II) and palladium(II) 1,3-bis(2-alkyltetrazol-5-yl)triazenates

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1,3-Bis(2-R-tetrazol-5-yl)triazenes MTTH (R = Me) and BTTH (R = <sup>t</sup>Bu) were found to deprotonate upon reaction with copper(II), platinum(II), and palladium(II) chlorides in neutral or acidic media to give square planar complexes of general formula  $MLCl$  (M = Cu, Pt, Pd; L = MTT, BTT), in which 1,3-bis(2-R-tetrazol-5-yl)triazenate ions act as tridentate chelating ligands. Products were characterized by elemental analysis, UV-*vis* and IR spectroscopy, thermal and X-ray diffraction analyses. The structures of Pd(MTT)Cl (Fig. 1) and Cu(BTT)Cl·(BTTH) complexes were established by X-ray analysis. The most remarkable feature of the absorption spectra of platinum(II) and palladium(II) 1,3-bis(2-R-tetrazol-5-yl)triazenates are charge-transfer bands in the visible spectral region, with a markedly resolved structure even at room temperature in solutions (Fig. 2).

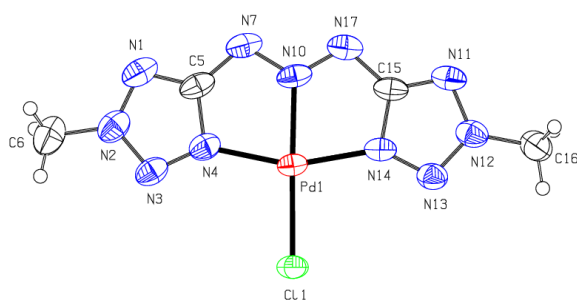


Figure 1. A view of Pd(MTT)Cl complex molecule

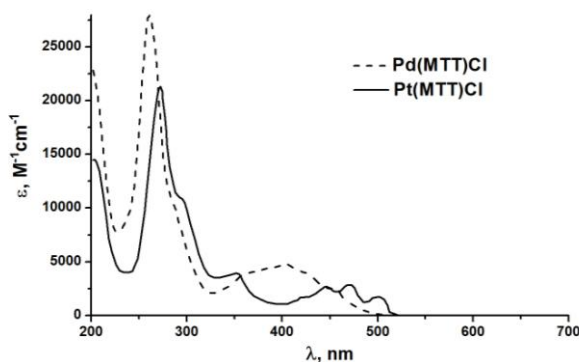


Figure 2. UV-*vis* spectra of Pt(II) and Pd(II) 1,3-bis(2-methyltetrazol-5-yl)triazenates