Complexes of Paladium(II) with 2,2-Bipyridine and 3-(2-Pyridil)-5,6-Diphenyl-1,2,4-Triazine : Synthesis, Spectra Characteristic and Application of Complexes in Transformation of Urea Into Methyl Carbamates with Various pH Values

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Abstrak

Comlexes of both bpy and PDT are stable. Production of [Pd(PDT)Cl2J and [Pd(PDT)2]Cl2 complexes, need shorter time than [Pd (bpy) Cl2] and [Pd (bpy) 2] Cl2. In IR spectrum, there is little different absorption frequencies between free ligand and complex compounds in the 1000-4000 cm-1 region. These absorptions shifted due to symmetry changes. Two new bands appear at 180-290 cm-1 region indicating a bound between Pd (II) metal ion with N. The UV-Vis spectra of free bpy ligand show 6 peaks. One peak of free bpy ligand disappears, when bpy complexes are formed. The spectra of bpy complexes shift to a shorter wavelength. Two new peaks are observed at 350-400 nm, indicating that complex has already formed. Free PDT ligand has three peaks. Spectrum of each PDT complex has new peaks. Two peaks at 400-500nm indicate a complex formation. PDT ligand shifts to a longer wavelength. Two peaks appear in 350-400 and 400-430 nm region indicates d-d transition. A new peak is observed in carbamate around - 1250 corresponds to OR stretching. In order to minimize the poisons effect of ammonia, different pH values are used. Big difference is not observed in turnover number. Best turnover number is obtained at pH 9. As the acidity increases, turnover number decreases.