



**Synthesis and Characterization of Ruthenium(II) Complexes with
2,6-(diphenylazo)pyridine Ligand**

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Master of Science Thesis in Inorganic Chemistry

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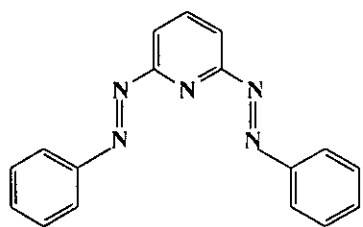
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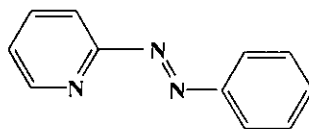
Thesis Title	Synthesis and Characterization of Ruthenium(II) Complexes with 2,6-(diphenylazo)pyridine Ligand
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ABSTRACT

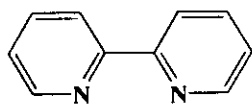
The 2,6-(diphenylazo)pyridine ligand (diazpy, 1), was an azo compound similar to 2-(phenylazo)pyridine (azpy, 2) but contained two azo groups and it acted as both tridentate and bidentate ligands. The Ruthenium complex, $\text{Ru}(\text{diazpy})\text{Cl}_2$ was synthesized and used as a precursor for syntheses of $[\text{Ru}(\text{diazpy})(\text{L})_2](\text{BF}_4)_2$ complexes ($\text{L} = \text{azpy}$ (2), bpy (3) and phen (4)). All compounds were characterized by spectroscopic and electrochemical methods. The molecular structures of the diazpy ligand and the $[\text{Ru}(\text{diazpy})(\text{bpy})_2](\text{BF}_4)_2$ complex were confirmed by X-ray crystallography technique. Results from IR spectroscopic data and cyclic voltammetry showed that the bidentate diazpy ligand was stronger π -acceptor than bpy and phen but less than azpy .



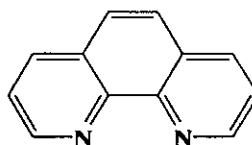
2,6-(diphenylazo)pyridine (diazpy) (1)



2-(phenylazo)pyridine (azpy) (2)



2,2'-bipyridine (bpy) (3)



1,10-phenanthroline (phen) (4)