# Investigation of Aniline Bipyridine: A Potential Source of Hydrogen Gas Production

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## Abstract

Hydrogen gas is an important in terms of transferring usable energy and finding ways of synthesizing hydrogen gas can be helpful in reducing the impact usable energy can have on the environment. This project examines one such method for producing hydrogen gas, using metal free aniline bipyridine in a highly acidic system. The ligands' ability to reduce hydrogen gas was first tested with an electronically neutral metal center, Zn to examine the reduction peaks associated with the ligand. The aniline bipyridine with no metal center was subsequently examined using cyclic voltammetry displaying a reduction, an increase in slope, at -1.0V. Controlled potential electrolysis was performed at -1.0V to observe the amount of hydrogen gas being produced in the system. The amount of hydrogen gas throughout the electrolysis was used to examine the efficiency of production with no metal center.