

A104 ENGR

Dynamic Vehicle Charging

Abstract

Wireless power transmission, or transfer is a method that has been used for many decades for numerous applications. Nikola Tesla invented and developed the most advanced form of wireless power transmission (WPT) which consisted of inductive coupling. Today, we research and innovate numerous wireless power transmission methods which continuously allow us to efficiently transfer power without use of transmission cables. We will discuss the advantages of the resonant inductive coupling wireless power transmission method while demonstrating wireless power transmission over a short distance. Our demonstration will consist of a small remote-controlled vehicle that will contain components similar to those of a receiver. The vehicle will pass over our designed transmission component, where it will recognize the initial transfer of power and display the current charge status. The goal of this project is to apply methods of inductive coupling through wireless power transmission to not only maintain power but to also charge the remote control (RC) vehicle as it proceeds through the guided path while displaying its charging status, mileage and battery life remaining. The outcome of this project will teach us about power generation, efficiently distributing power and being able to effectively analyze power produced, distributed and remaining.