基于超级电容的电动小车无线充电系统设计

# 摘要

　　电动汽车的发展已是必然，而续航与充电一直是困扰着其发展的重要因素。针对这些问题，无数的学者都在为之专研。近年来，无线充电技术与超级电容渐渐崭露头角，这两项技术能够完美的解决这些问题。但是，如何完美的运用却又成了一个难题。本设计则是制作一个基于超级电容与无线充电的电动小车，这也是目前多用来探究它们的方法。用电动小车来代替电动汽车，将超级电容作为电动小车的储能元件，利用无线充电技术给超级电容充电，再采取 STM32 芯片进行控制，让小车充电 60S 启动，将经过充电点充电与不充电两种情况进行对比，探究无线充电运动中充电的效率以及超级电容的储能效果。使得电动汽车能够更快发展的同时，也让无线充电与超级电容能够早日普及到我们的生活，无线充电对于我们经常使用的手机、电动牙刷等，超级电容对于我们生活中的智能表、电子开关等，都有着它们巨大的发挥空间。

**关键词**：电动小车　无线充电　超级电容　STM32

# Abstract

The development of electric vehicles is inevitable, and battery life and charging have been the important factors perplexing its development. In response to these problems, numerous scholars are studying them. In recent years, wireless charging technology and super capacitor are gradually emerging. These two technologies can perfectly solve these problems. However, how to use it perfectly has become a difficult problem. This design is to make an electric car based on super capacitor and wireless charging, which is also the method used to explore them at present. The electric car is used to replace the electric car. The super capacitor is used as the energy storage element of the electric car. The super capacitor is charged by wireless charging technology. The STM32 chip is used to control the charging of the car for 60 seconds to start. The charging efficiency and energy storage effect of the super capacitor in the wireless charging movement are explored by comparing the charging at the charging point with the charging without charging. While electric vehicles can develop faster, wireless charging and supercapacitors can also be popularized to our life as soon as possible. Wireless charging has great room for mobile phones, electric toothbrushes and the like that we often use, and supercapacitors have great room for smart meters, electronic switches and the like in our life.

**Key words:** electric trolley    wireless charging    super capacitor    STM32