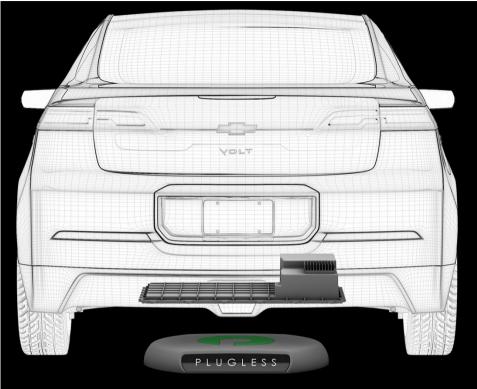
## **Plugless Power for Electric Vehicles**

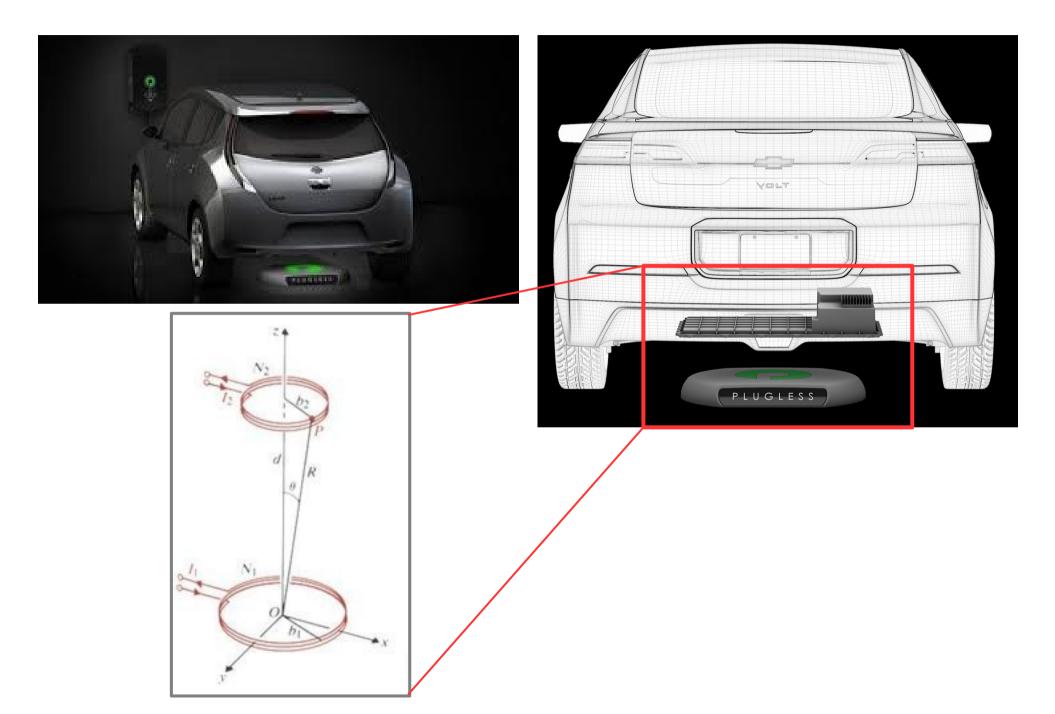


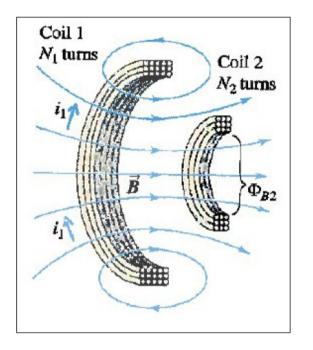
## **Plugless Power for Electric Vehicles**





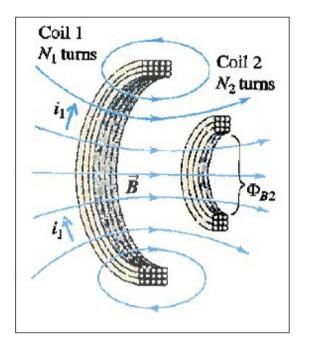
### **Plugless Power for Electric Vehicles**





Mutual inductance

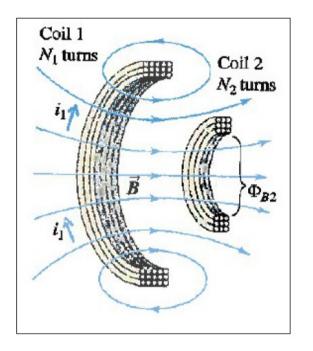
 $\epsilon_2 = -M \frac{d I_1}{dt}$ 



Mutual inductance

 $\epsilon_2 = -M \frac{d I_1}{dt}$ 

If the input current is an AC current as:  $I_1(t) = I_0 \sin(\omega t)$ 



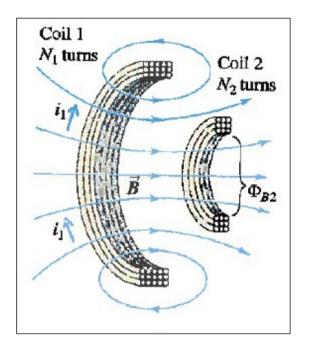
Mutual inductance

$$\epsilon_2 = -M \frac{d I_1}{dt}$$

If the input current is an AC current as:  $I_{\alpha}(t) = I_{\alpha} \sin(\alpha t)$ 

$$I_1(t) = I_0 \sin(\omega t)$$

$$\epsilon_2(t) = -M \omega I_0 \cos(\omega t)$$



Mutual inductance

$$\epsilon_2 = -M \frac{d I_1}{dt}$$

If the input current is an AC current as:

 $I_1(t) = I_0 \sin(\omega t)$ 

$$\boldsymbol{\epsilon}_{2}(t) = -M \boldsymbol{\omega} \boldsymbol{I}_{0} \cos(\boldsymbol{\omega} t)$$

This is used to charge the battery in the EV

# **Other Possibilities**



And.... you name it...