
Project:

Wireless Charging for Electric Vehicles

Abstract:

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) has launched a research project on the inductive charging of electric vehicles. As part of the funded project, the partners involved explore the technical feasibility of a comfortable charging system with high efficiency and the potentials of wireless charging for automotive applications.

Electric vehicles, which are now being tested as prototypes or in test fleets, are usually recharged at private or public charging stations. To do so, the driver must connect his vehicle to the power source by cable, remove the cable after charging and then store the cable, e.g., in the trunk of the vehicle.

With contactless inductive charging on the other hand, battery charging is considerably simpler: The charging process starts automatically when the vehicle has been placed on a corresponding charging point equipped for inductive charging. These inductive charging points can be integrated, in completely invisible and vandal-proof manner, in public spaces such as in parking garages and parking areas. Private household application is also possible.

The convenient charging process requires no operation by the driver, apart from initial preset values that among others take into account the desired electricity rates and ranges. Energy transfer occurs inductively via the air gap between the firmly installed ground coil and the coil in the vehicle base, similar to a transformer. The electronics system of the ground

coil detects the correct position of the vehicle and automatically exchanges via near-field communication all the necessary information for charging the vehicle. With the appropriate infrastructure, the automatic system used for the wireless charging allows more charging operations at a lower charging power and thus leads to longer battery life.

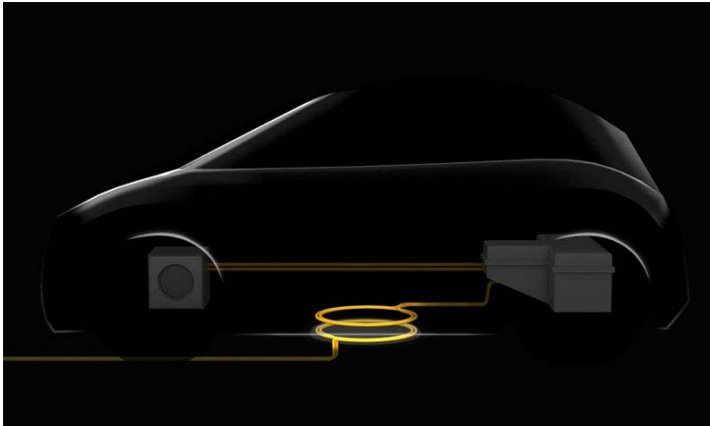
The vehicle manufacturer integrates the vehicle components of the wireless charging system developed by the partners in the vehicle mechanically and electrically and tests the system under realistic operational conditions. The main objective of the project "Wireless Charging" is a charging system compatible with use for vehicles that combines high efficiency and components with minimal weight, space and costs, particularly taking into account all necessary safety requirements.

Project partners:
Conductix-Wampfler AG, Weil am Rhein
Daimler AG, Stuttgart

Short Profile of Conductix-Wampfler

Conductix-Wampfler is the world's leading supplier of mobile energy supply and data transmission systems. With own companies and several partners, the company of the Delachaux Group is present in nearly all relevant industrialized countries. With about 1000 employees across the globe, the group generated sales of about €163 million in fiscal 2009.

Picture:



Caption: Inductive Charging via an air gap below the vehicle base

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Picture	PICT 10-11-08 CXW_Daimler_Induktion_High.jpg

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