Development of Inductive Power Transfer Systems
**Application**

Inductive power transfer systems have many advantages towards wired solutions, such as

- Elimination of disturbing wires
- No open contacts
- Simple overcoming of air gaps

And thus offer added value in a wide range of applications, for example

- auxiliary supplies (e.g. form 48V to 48V or 24V to 24V)
- wireless plugs for demanding ambient conditions
- energy supply for moved electrical loads
- wireless charging for electric vehicles

**Reference Projects**

- 3.5kW wireless charging with 96% DC-to-DC efficiency (see large picture)
- 1kW wireless plug with 98% efficiency
- 140W auxiliary supply for 24V
- 20W wireless power transfer for ball bearings

**Our Service**

We develop and realize complete inductive power transfer systems. From the FEM-Simulation, over power electronics analysis/simulation and mechanical integration to the realization of complete prototypes.

**Magnetic Design**

We use a computer-based system design algorithm. Our loss models are based on self acquired material data. Therewith, we are able to:

- calculate the magnetic parameters
- calculate the winding losses (also litz wires) and core losses
- perform multi-criterial optimization (e.g. efficiency, power density, costs)

**Electrical Design**

In order to find the best electrical design for your application we offer:

- Comprehensive topology studies
- Detailed converter and system simulation
- Development of fully controlled power transfer system including communication
- Design of highly integrated power electronic components (e.g. converter)

**Contact Us!**

The Fraunhofer IISB is your research and development partner for inductive power transfer.