

PCIM Nuremberg 2012 – Students Day



Fraunhofer

IISB

Institute of Integrated Systems and Device Technology

Realize *YOUR* Visions...
...With Power Electronics

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Begin of the story...

...state of the art of low power supply solutions



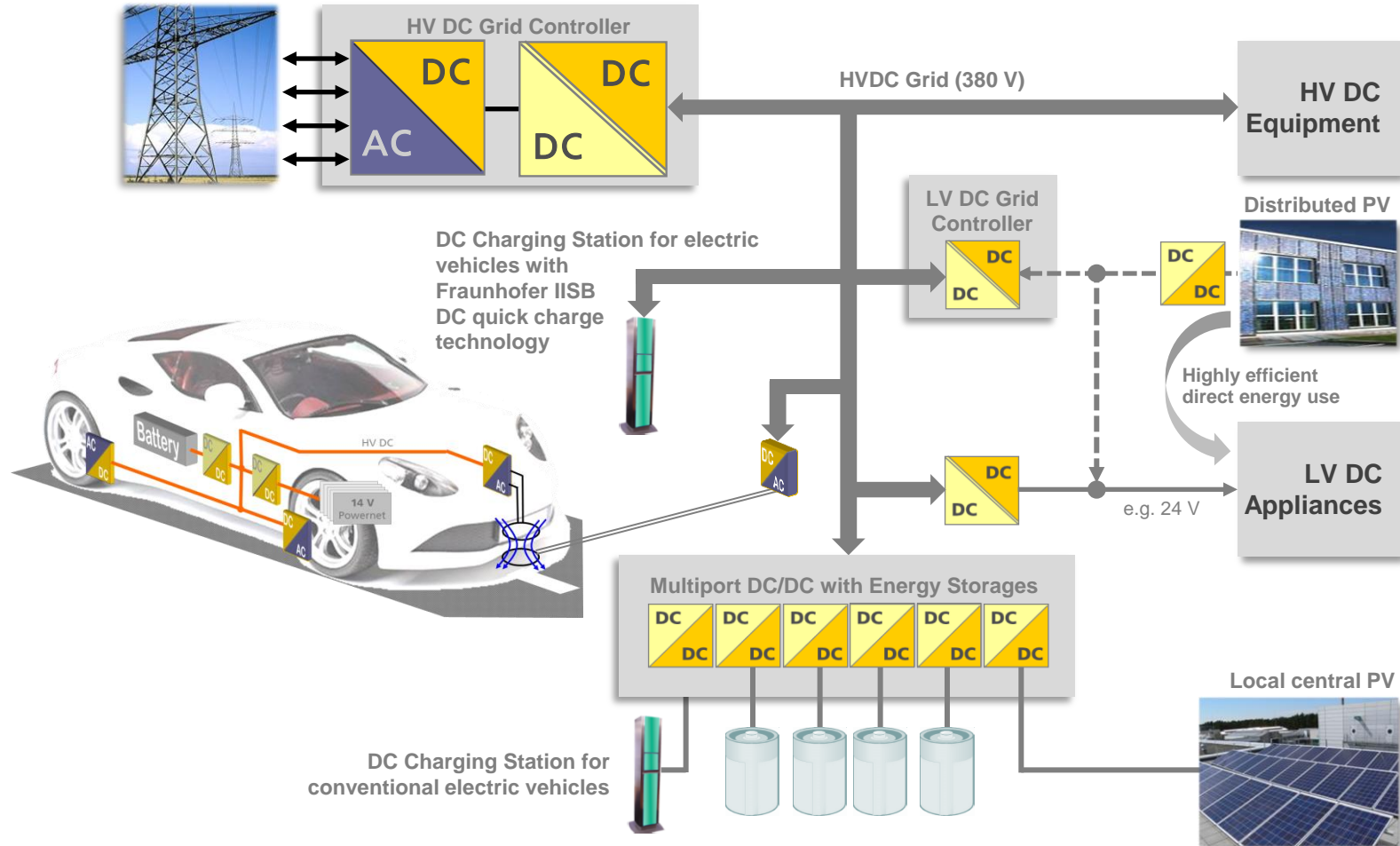
view behind a „modern“ office desk

- low efficiency
- can not integrated in most cases
- uncomfortable, unattractive, annoying
- lot of electronic scrap

→ Thinking (again) on DC power solutions makes sense!

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Application Center for Highly Efficient Power Supply and DC Grid Technologies (at Fraunhofer IISB)



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Begin of another story...

...state of the art in charging electric vehicles

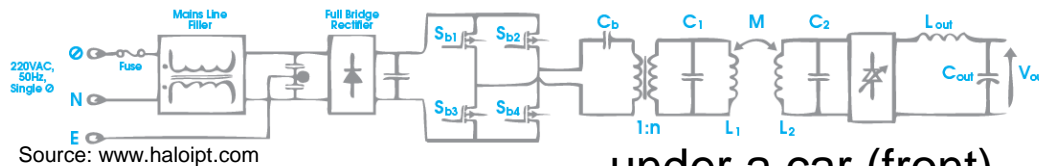


- Handling will be uncomfortable:
raining, cold, by night and within **short parking stops**
- Maybe problems with **vandalism** or **burglary**
- **liability issues** (trap hazards)

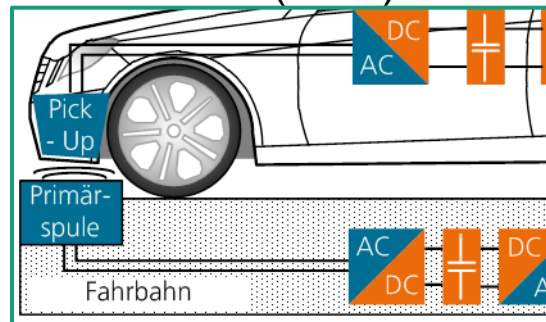
→ Thinking (again) on inductive charging makes sense!

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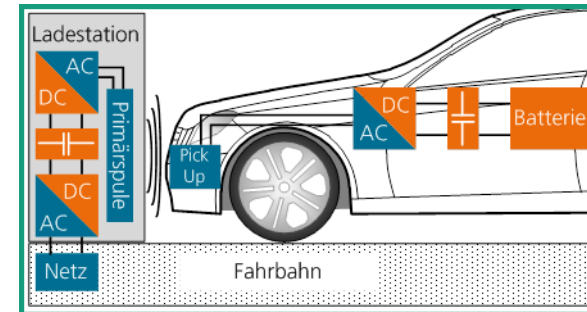
Inductive charging principles



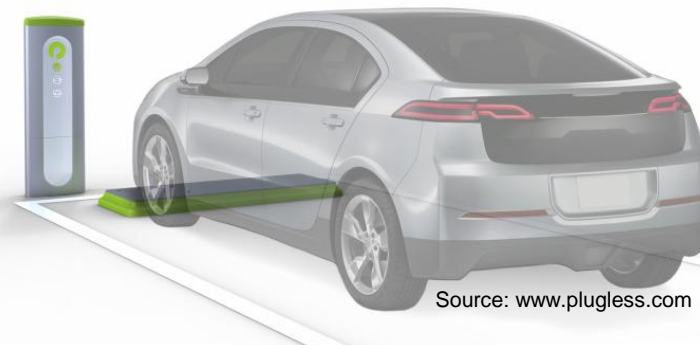
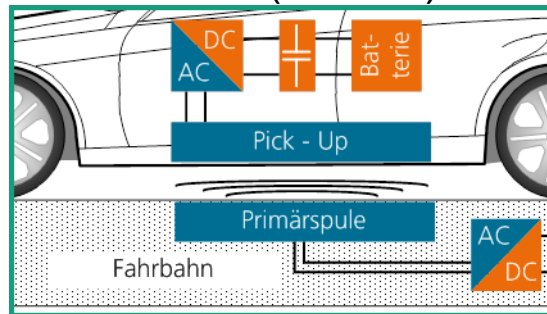
under a car (front)



in front of a car



under a car (central)



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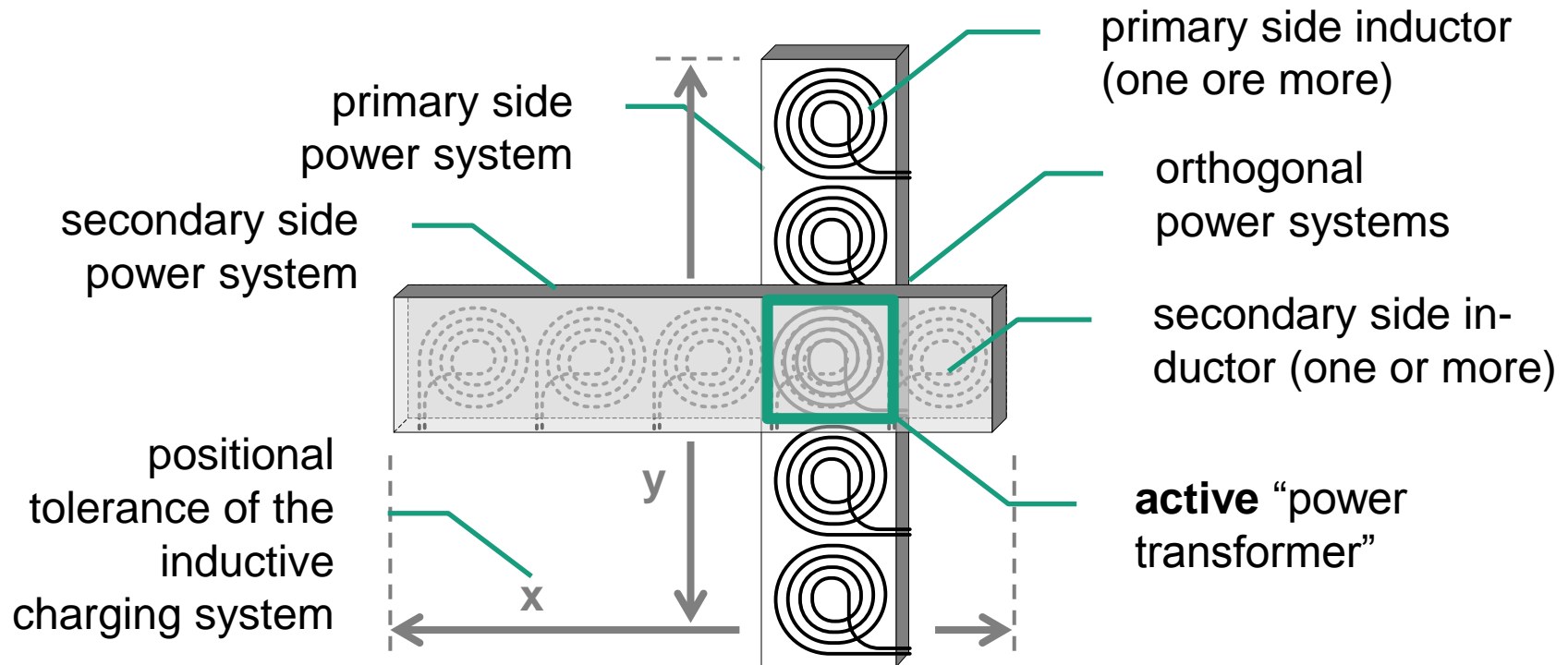
What is the difference between electric cooking and inductive charging a car?

...nothing (in principle)!



Fraunhofer IISB inductive charging/discharging concept/system for electric mobility

- Only coils (inductors) with overlap will be activated
- System has a positional tolerance in x- and y-direction

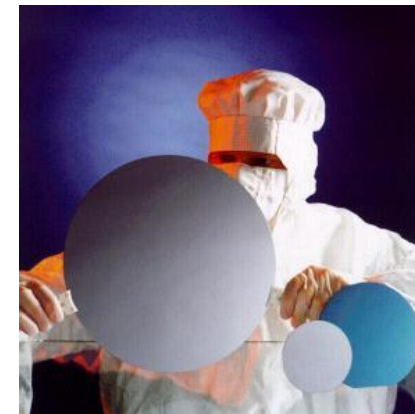
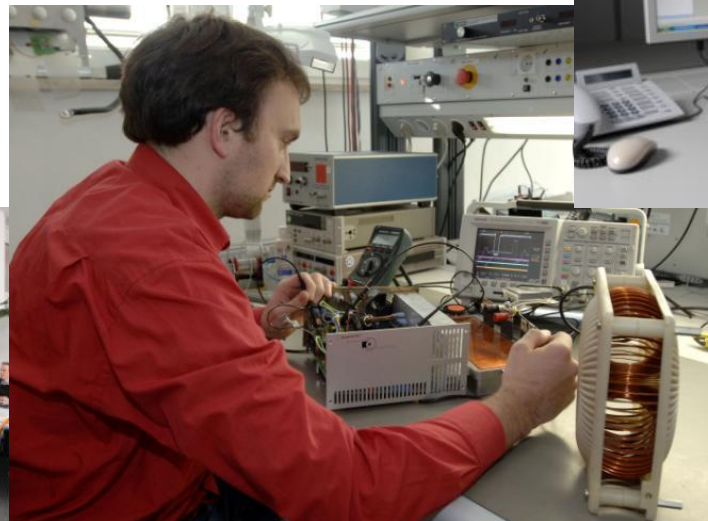
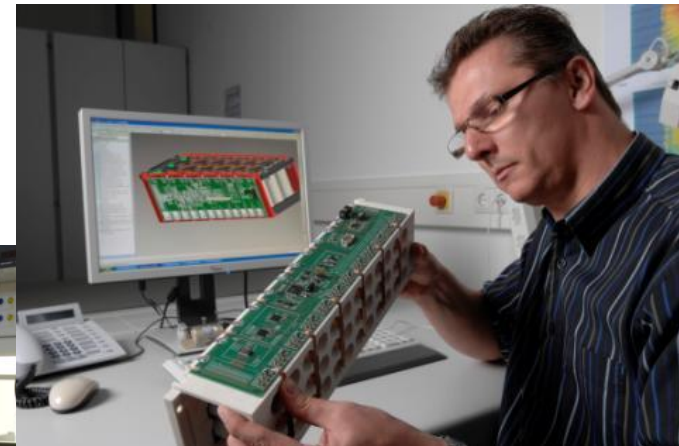


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What does an engineer the whole day?

Research and Development

- Development of new technologies, devices, systems and equipment
- Hard- and software development
- Simulation
- Design engineering
- Testing



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What does an engineer the whole day?

Marketing and Sales

- Definition of products and development of product roadmaps
- Planning and controlling of all production processes
- Customers support (technical and sales)
- Pricing
- Advertising



Production and Quality Management

Service

- Service of systems and equipment at the local customer or world wide



What does an engineer the whole day?



Peter Bauer

Vorsitzender des Vorstands der Infineon AG
Diplom-Ingenieur Elektrotechnik

Norbert Reithofer

Vorsitzender des Vorstands der BMW AG
Diplom-Ingenieur



Dieter Zetsche

Vorsitzender des Vorstands der Daimler AG
Diplom-Ingenieur Elektrotechnik

Wolfgang Reitzle

Vorsitzender des Vorstands der Linde AG
Diplom-Ingenieur Maschinenbau



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■ Strong Local Industrial Background

- Automotive
- Energy
- Automation

■ Strong Regional and International Networking



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Starting **YOUR** career as a researcher

Fraunhofer in cooperation with the University Erlangen overs you:

- Collaboration in innovative research and development projects
- Bachelor- und Master theses
- Phd projects
- Practical trainings
- Apprenticeships
- Internships



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Realize *YOUR* Visions...
...With Power Electronics

Thank you for *YOUR* attention
together for a sustainable future...
...it's *YOUR* life ...
... study Power Electronics !



www.iisb.fraunhofer.de