

## Vehicle to Grid (V2G) operation for an On-Board charger (OBC)

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**BRUSA HyPower AG** is developing and producing high performance energy conversion systems for the electro mobility applications. Highly efficient, cost effective and volume constraint systems make the design and implementation of them quite challenging. On-Board chargers require bidirectional power transfer capability with Vehicle to Grid (V2G) operation, as the efficiency and reliability of the grid is improved by providing grid support services.

In this work, a control strategy is derived (Analysis and Simulation) that makes the OBC capable of providing support services to the grid (grid-forming, grid-feeding, grid-supporting). The derived strategy is verified in an existing prototype of the next generation On-Board Charger (OBC) that Brusa is soon to offer in the market.

The project is carried out in an industry environment at **BRUSA HyPower AG**.

### **Type of work**

Master thesis (6-9 Months, full time)

### **Content of work**

10 % Familiarize with Existing Concept

40 % Analysis and Simulation

30 % Software Implementation

20 % Measurements (Existing Prototype)

### **Requirements**

Hands on experience in the laboratory, studies in electrical engineering (focus on Power Electronics and Control)

### **Contact**

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