

Customer Application #6

Electronic Loads in Research and Education

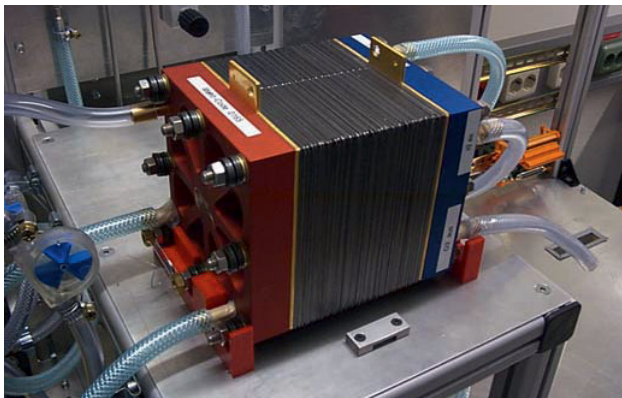
The department Electrical Engineering and Information Technology of the University of Darmstadt owns a fuel cell and hydrogen laboratory. In this lab run several research projects in the form of master and bachelor assignments and project works in conjunction with industry companies as well as partner universities.

Additionally the lab owns several test set-ups to run fuel cells and for the production of hydrogen.

H&H supports a fuel cell test setup of the university of Darmstadt. The fuel cell stack which consists of 20 cells produces 600 W (50 A, 12 V), see picture 1.1. The test stand was developed with the aid of several Diploma and Master assignments.

It allows the measurement of the fuel cell characteristic $U(I)$ at different temperatures, different flow rates of hydrogen and oxygen as well as different humidity of the fed air, see picture 1.2.

The test stand is controlled by LabVIEW®. Thereby, the electronic load from H&H allows a precise adjustment of the working points.



Fuel cell stack (20 cells)



Hydrogen fuel cell test equipment of FH Darmstadt

The department Electrical Engineering and Information Technology of the University of Darmstadt counts approximately 1500 students. These students study a 3 semester basic study focused on "Energy, Electronic and Environment" before the main study focused on "Automation and Information technology" or "Telecommunication technology". Today approximately a third till a half of the students choose the "Energy, Electronic and Environment" course. The theoretical and practical work with fuel cells and hydrogen is part of the education. The university of Darmstadt traditionally emphasizes the practical experience with the educated subject.