

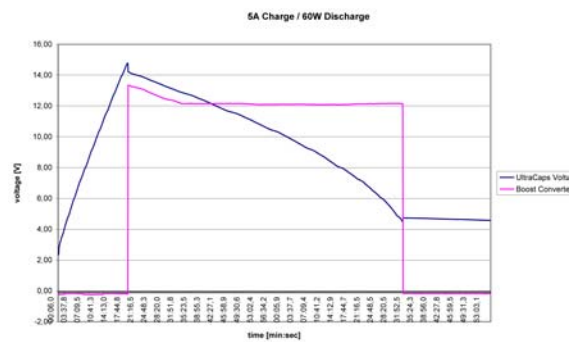
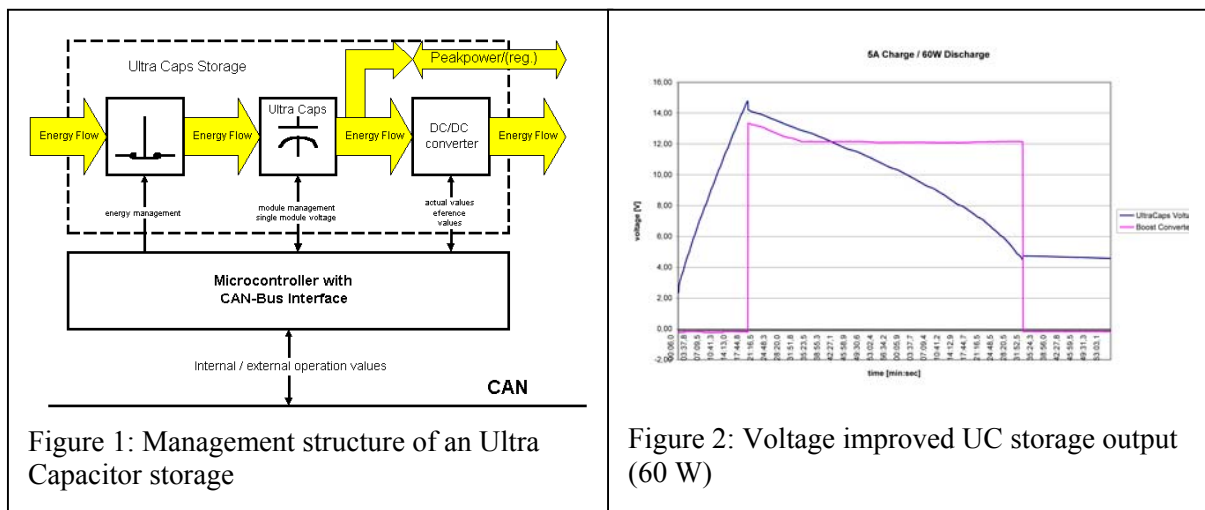
Ultra Capacitor Storages for Automotive Applications

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A research group at the Berlin University of Technology is engaged with the applications of Ultra Capacitors in automotive systems. Today Ultra Capacitors have the disadvantage of a too small operation area regarding the voltages and very low voltage levels of a single module. This leads to series connections of Ultra Capacitors which needs a high dynamic energy management to guarantee the lifetime.

A management system for a 42 V power net storage block is under development which includes a protection strategy for the Ultra Capacitors. The concept includes the handling of Peak Power Assistance (400 A at voltages levels from 40 V to 56 V) in combination with a DC/DC converter based (for a better utilization of the stored energy) delivery of medium power (100 A at steady 42 V). Regarding to easy-to-handle requirements the block has only a CAN bus interface and the power connector.

The Paper includes a detailed description and the test results of several UC storages in different power classes.



The final versions of the different storage classes (14 V and 42 V power net) and the results of the efficiency and dynamic behaviour will be presented at the EVS19 in Busan.