

The Potential of 48V HEV in Real Driving Operation

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Abstract : This publication focuses on the limits and potentials of 48V hybrid systems, which are especially due to the cost advantages an attractive alternative, compared to established high volt-age HEVs and thus will gain relevant market shares in the future. Firstly, a market overview is given which shows the current known 48V hybrid concepts and demonstrators. These topologies will be analyzed and evaluated regarding the system power and the battery capacity as well as their implemented hybrid functions. The potential in fuel savings and CO₂ reduction is calculated followed by the customer-relevant dimensioning of the electric motor and the battery. For both measured data of the real customer operation is used. Subsequently, the CO₂ saving potentials of the customer-oriented dimensioned powertrain will be presented for the NEDC and the customer operation. With a comparison of the newly defined drivetrain with existing 48V systems the question can be answered whether current systems are dimensioned optimally for the customer operation or just for legislated driving cycles.

Keywords : 48V hybrid systems, market comparison, requirements and potentials in customer operation, customer-oriented dimensioning, CO₂ savings

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