

Laser applications in E-Mobility

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E-Mobility has generated a lot of interest in recent times. A big challenge to bring this trend into real life, lies in main topics - battery cell technology, electronic components for the battery management, electric drive-trains and the integration into complete battery packs.

The laser technology is a key element. Besides laser marking, laser cutting and welding, the laser technology is already an indispensable tool for the many task in the E-Mobility manufacturing process.

In the context of the development of the before mentioned main topics (BatteryCell, Electronics, E-Drive, and battery pack), there are some new technological tasks and challenges for the laser, like e.g. remote cutting of electrode foils, welding of dissimilar materials, e.g. aluminum + copper; aluminum + steel and gastight welding of boxes, containing heat-sensitive components. The laser with its high flexibility, its high reachable process speed and its possibility to bring in the energy very selective into the material is very suitable for a high productivity and components of highest quality.

Within the paper and presentation, the possibilities of laser technology today and in the future for applications in the field of E-Mobility will be described.