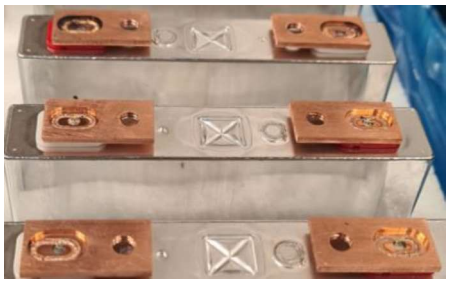
Wednesday 8th May 2024, 18:30-19:30 – via Zoom (Register Online)

Eastern Counties Branch Presents

Ultrasonic Assisted Laser Welding Applications For Electric Vehicle Battery Assembly



Electric vehicle (EV) sales will reach 44 million vehicles per year by 2030. Therefore, there is an increasing need for **manufacturing of battery packs** to meet demand. Europe is expanding rapidly with a projected production capacity of 450GWh/year by 2030.

Laser welding has emerged as the optimal welding technique as it is 4-5 times faster than arc welding processes. However, before laser welding can be adopted for this application, there are challenges to overcome.

To deliver the required power and capacity, a standard battery pack contains hundreds, even thousands, of connected individual cells. This creates several **metallurgical challenges** when making the required joints, including the joining together of multiple dissimilar materials of varying thicknesses.

Soni-Laser aims to find the 'sweet spot' of welding process optimisation for the production of connections between battery cells, in the types of battery most commonly used in electric vehicles (EVs):

- Using non-contact **Power-Ultrasonic Vibration Treatment** subsystem to enhance the integrity and quality of the welds.
- **Reduce residual stresses** and achieve 10% improvement in mechanical properties (e.g. strength, elasticity) of the battery weld, due to grain refinement and phase distribution
- 30% mitigation of intermetallic compounds reducing brittleness. **Improving mechanical strength and impendence**

Speaker: Phil Carr is the director and owner of Carrs Welding Technologies. Over the past 2 decades, Phil has accumulated extensive knowledge on **laser welding technologies**. Phil has a background in Electrical and Electronic Engineering. He is currently focused on R&D activities and project manages the Innovate UK funded Soni-Laser project.

Carr's Welding Technologies Ltd specialises in laser welding, TIG welding, laser marking & engraving, tooling repairs and laser cladding and offers precision laser welding services.

Please register via the 'events' tab at: www.theweldinginstitute.com