HENRY ROYCE INSTITUTE

UNIVERSITY OF OXFORD

Department of Materials

CASE STUDY: EC-OG

Metallographic analysis of welds on lithium ion battery cells

For subsea energy solutions provider EC-OG, high quality battery cell welds are key to ensuring robust and efficient performance of subsea batteries

Metallography was used to examine how the welding process affects the microstructure, giving confidence that production welds are free of defects.

As a qualifying SME, EC-OG received funding assistance for metallographic examination of welds using facilities supported by the Henry Royce Institute, at the Oxford Materials Characterisation Service (OMCS), University of Oxford. The characterisation specialists at OMCS developed a sample preparation and test regime in cooperation with EC-OG. This work has enabled EC-OG to qualify the examined welds. The approach will enable further qualification tests to be performed with quick turn-around times, to support EC-OG as it brings online additional welding equipment.

EC-OG have been investing in new battery manufacturing facilities, which support rapid prototyping as well as building on the company's existing in-house battery and subsea engineering expertise. Accessing the Henry Royce Institute capabilities has helped the company with its focus on shorter build time and control of the supply chain.
This has enabled EC-OG's clients client support and opening up new opportunities in the electrification of subsea systems, including in renewable energy installations.

EC-OG can access the rich analysis capabilities supported by the Henry Royce Institute in the Department of Materials at the University of Oxford and at other partners. Availability of this specialist expertise gives EC-OG confidence in their ability to keep at the forefront of the decarbonisation in the industries which they serve.

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