



Contribution ID: 569

Type: **Contributed Oral**

## **M1Or1A-03: Scanning Raman Spectroscopy for Characterization of REBCO Coated Conductors**

*Monday 10 July 2023 10:00 (15 minutes)*

REBCO coated conductors have gained significant attention in diverse areas in recent years due to their potential applications across a wide range of temperatures (4.2-77K) and magnetic fields (0-20T or higher). However, the persistent lack of characterization techniques to rapidly and reliably obtain information on the in-field performance of long length tapes remains a challenge. In this work, we evaluate the use of scanning Raman spectroscopy for characterizing long lengths of REBCO coated conductor tapes, as it can provide detailed insight into structure, composition, and local variations arising from defects or strain. We generate 2D maps of Raman wavelength and intensity features over extended lengths of conductor and correlate them to the information collected by reel-to-reel (R2R) 2D X-Ray Diffraction (2D-XRD) and R2R Scanning Hall Probe Microscopy (SHPM). The three methods are compared in terms of depth of information, detectability of variation in features of interest and the potential for evaluating critical current performance over a range of fields and temperatures. We also present an ongoing development of a R2R scanning Raman system and the technical aspects considered to achieve practicality, data reliability and speed.

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**Session Classification:** M1Or1A: REBCO Coated Conductors