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**FIB/EBSD Tomography: Current Developments and
Application to CdTe Thin Films Characterization.**

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Microstructural characterization of thin films has long been challenging since strong structural anisotropies can develop through their thickness, which extends to only few microns. Recent developments in 3-dimensionnal orientation microscopy have however contributed to overcome this limit by enabling the depth-resolved probing of relevant microstructural parameters (grain size, texture, grain boundary character distribution...) with a depth resolution below 100 nm.

In the present work, current developments in 3D EBSD data processing and reconstruction, using the software QUBE, are presented and applied to case study of cadmium telluride (CdTe) thin films. CdTe is indeed efficiently used for solar energy conversion in the form of thin film solar cells due its particularly well-fitting optoelectronic properties. Microstructural data, collected on samples at different stages of the cell manufacturing, makes the identification of the critical steps of the grain boundary network formation possible and thus the establishment of a coherent growth model. In addition, the combination of 3D EBSD and cathodoluminescence can be used to provide a correlation between grain boundary crystallography and optoelectronic properties.