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Defects and Carrier Compensation in CdTe[1]

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CdTe is a very useful semiconductor material for its radiation detection and thin-film solar cell applications. Good carrier mobility and lifetime are needed for CdTe since efficient carrier collection is essential for the success of both applications. On the other hand, high resistivity is required for radiation detection for suppressing dark current and device noise. This is in contrast to CdTe-based solar cells, in which low resistivity is desired. In this talk, I will discuss the properties of native defects and impurities in CdTe with emphasis on carrier compensation and its implications in radiation detection and solar cell applications.

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