

# Pushing the limit of photodetection by bandage engineering through alloying and stacking

*Thursday 21 November 2024 13:31 (27 minutes)*

In this talk, we discuss harnessing the unique properties of amorphous selenium (a-Se) and its alloy. Our exploration into Te alloying has revealed critical insights into defect states and their impact on electronic properties. By integrating density functional theory (DFT) simulations with experimental validation, we discovered that while Te incorporation reduces the band gap and mobility, the quantum efficiencies can be recovered at higher electric fields due to enhanced carrier escape from trap states. Furthermore, we demonstrated the viability of multilayer detector architectures, leveraging the combined strengths of a-Se and Se-Te to achieve superior sensitivity across a broad spectral range, particularly in the UV to red wavelengths.

## Do you need a VISA letter for traveling to Canada ?

No

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**Session Classification:** New materials and Technologies (Chair: Nicola D'Ascenzo, Feng Shi)

**Track Classification:** Invited Talk