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R&D on organometal halide perovskites for photodetectors

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The organometal halide perovskites (OMHP) semiconductors are promising candidates for fast, sensitive and large area photodetectors. A gain in OMHP based detectors has been observed in several architectures, but usually in association with a slow time response. A model describing the underlying mechanics is still missing or at least incomplete. In this talk the state of art of the photo-detectors based on OMHP perovskites will be presented, and the activities carried on within the PEROV experiment as well. One goal of the PEROV project is to find out whether OMHPs exhibit an internal avalanche multiplication. Several CH3PbBr3 perovskite based devices have been developed, fabricated and characterized: film-based devices with 300 nm thickness and devices based on high quality single crystals with seeding techniques or with unconventional lithographic techniques, with thickness from microns to mm.

Collaboration

PEROV collaboration

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