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Metal Halide Perovskites-Based Optoelectronics: From Lab to Fab

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Message from the Guest Editors

Metal halide perovskites have emerged as state-of-the-art semiconductors, especially for optoelectronics. The most attractive advantages lie in their high absorption coefficients, long charge-carrier diffusion length, tunable bandgap, and low-cost processability. Benefiting from these merits, the record efficiency of the optoelectronics, including solar cells and light-emitting diodes, has been comparable to that of the standard commercialized devices. Unfortunately, there are a plethora of issues born from the intrinsic ionic structures, which serve as bottlenecks to accessing future applications. Hence, in order to push the highly promising metal halide perovskites from lab to fab, a rational roadmap varying from simulations to crystal structures and ending with device physics should be designed step by step.



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