

# Monolithic perovskite/silicon-heterojunction tandem solar cells

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## Abstract

Monolithic perovskite/crystalline silicon tandem solar cells hold great promise for further performance improvement of well-established silicon photovoltaics. Here, we report a low temperature fabricated monolithic perovskite/silicon heterojunction tandem solar cell with an efficiency of 20.10% measured without any anti-reflective foil. The tandem cell shows an improved efficiency comparing to the reference single junction devices. The monolithic integration is realized *via* an optimized light management. We have obtained a matched current tandem solar cell with  $J_{sc}$  15.16 mA/cm<sup>2</sup> measured without any anti-reflective foil. This result still has the potential to be further improved as the presented device is limited by the insufficient absorption in the silicon bottom cell. Moreover, the results presented here represent a further step facing to the realization of low-cost tandem cells beyond the single-junction silicon cell efficiency limitation.