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High efficiency graded band gap perovskite solar cells ONUR ERGEN, SALLY DEMAIO-TURNER, THANG THOAN PHAM, MARK TIAN ZHI TAN, JONGMIN YUK, ALEX ZETTL, University of California at Berkeley — We report high efficiency graded band gap perovskite solar cells with very large current output and high power conversion efficiencies (PCE) by using simultaneously mixed halides (CH$_3$NH$_3$SnI$_3$ and CH$_3$NH$_3$PbI$_{3-x}$Br$_x$) perovskite absorber layers. An analysis of the experimental data yields a high fill factor (FF) of $\sim$75% and high short circuit current density ($J_{sc}$) of up to 46.2 mA/cm$^2$. These devices provide the highest current output aiming above 20% PCE.

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