Figure S1 | Performance metrics for solution-processed photodetectors. a| Specific detectivity of the best solution-processed photodetectors based on different materials and platforms compared to their best standard bulk reference counterparts (dashed lines). Only measured normalized detectivities are reported in this chart. b| Detectivity–bandwidth plot and c| external quantum efficiency (EQE)–bandwidth plot of colloidal quantum dot (CQD), organic and metal–halide perovskite photodetectors illustrating the gain–noise–bandwidth compromise. The advent of metal–halide perovskite photodetectors resulted in significant improvements in visible
sensitivities, as well as in detectivity–bandwidth and EQE–bandwidth products. Hybrid phototransistor and photo junction field-effect transistors also enabled remarkable advances, surpassing the $10^8$ Hz EQE–bandwidth limit. UV, ultraviolet; NIR, near infrared; MIR, middle infrared; SWIR, short-wave infrared; VIS, visible; PC, photoconductor; PD, photodetector; PT, phototransistor; OSC, organic semiconductor; MHP, metal–halide perovskite; NC, nanocrystal.

References


