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**ON THE COVER**
Illustration of the lead iodide perovskite crystal lattice with rays of sunlight falling onto the material, creating electron-hole pairs (electrons, blue; holes, black) as photons are absorbed. Upon later recombination of these charge pairs, photons are emitted and propagate within the crystal, regenerating charges when absorbed. This photon recycling process is crucial for obtaining high photovoltaic efficiencies and improving the performance of perovskite solar cells. See pages 1401 and 1430. Illustration: C. Bickel/Science