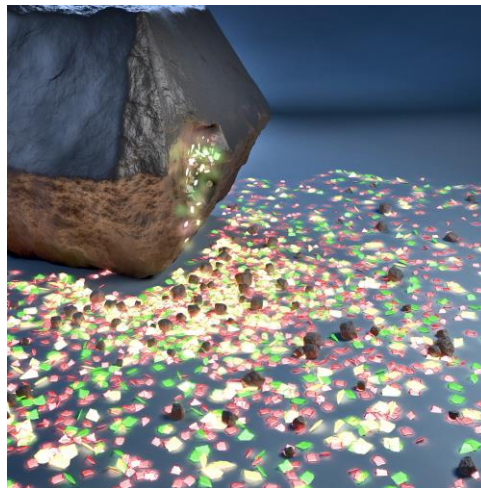


Metal halide perovskite nanocrystals: 2D materials and supercrystals

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I will present our work on the synthesis and optical properties of metal halide perovskite nano-platelets with controllable thickness down to one monolayer. Pronounced quantum confinement effects, large excitonic binding energies and comparably high radiative recombination rates have been found, all depending on the number of monolayers present in the respective nano-platelets. Transient pump-probe and four-wave mixing experiments provide further insight into the two-dimensional charge carrier relaxation scenario. The assembly of such halide perovskite nanocrystals into ordered supercrystals leads to remarkable changes of their linear and nonlinear optical properties.



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