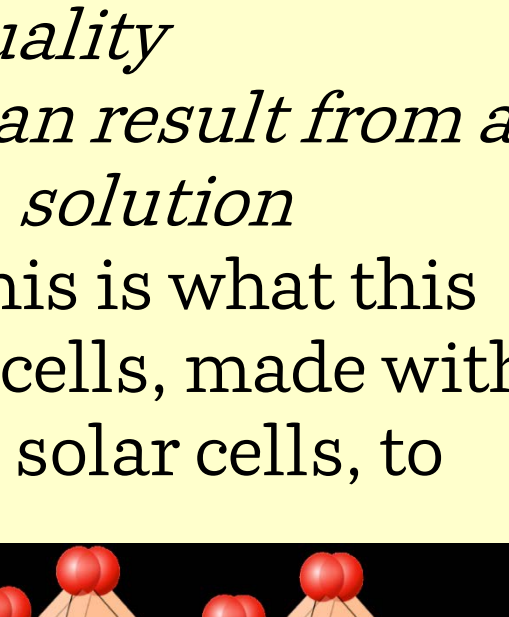
ZERNIKE INSTITUTE COLLOQUIUM

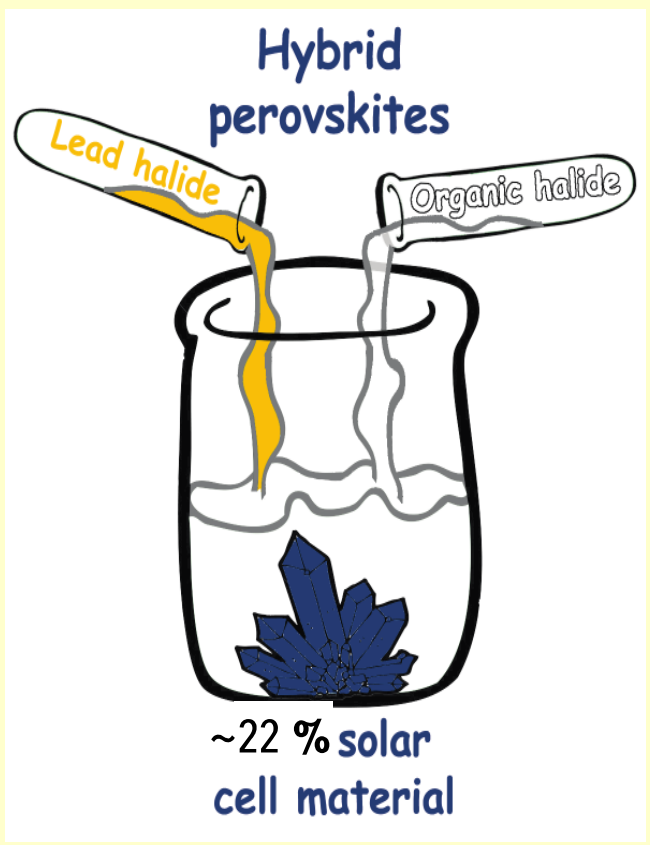
Thursday, December 7th, 2017

16:00h, Lecture Hall: 5111.0080 — Coffee and cakes from 15:30h

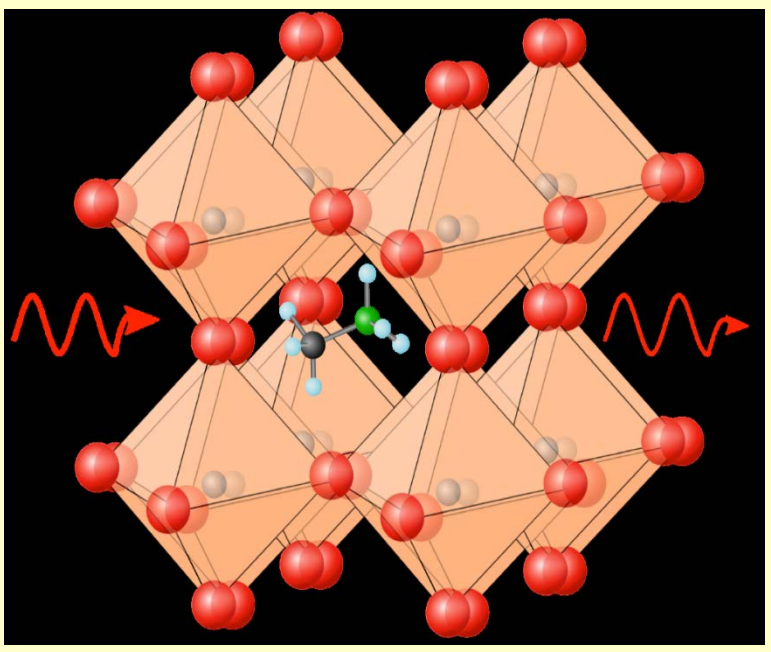
Halide perovskites : How special are they, and can they impact the future of solar cells?

David Cahen
Materials & Interfaces Department
Weizmann Institute of Science
Rehovot, Israel





While Halide perovskites can be characterized mostly (but with exceptions!) as normal (inorganic) semiconductors and we should be careful to describe their behaviour with concepts from organic and dye-sensitized solar cells, the fact that a *material with good-high quality optoelectronic properties can result from a very fast, low temperature, solution preparation is* ***amazing***. This is what this lecture will be about: we'll <u>first</u> compare solar cells, made with Halide Perovskites to the other types of known solar cells, to find what is similar and different. <u>Then</u> we'll consider (at the time of writing still) apparent inconsistencies in properties, such as high carrier lifetime *with* modest mobility, low temperature preparation *with* low defect density, apparently flexible inorganic lattice *with* very sharp diffraction, sharp, steep optical absorption onset and low sub-bandgap absorption.



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Work done with **Gary Hodes** (Weizmann) and **Pabitra Nayak** (Oxford U)