Fake news and Good news in the study of the Halide Perovskites

Isaac Balberg

The Racah Institute, The Hebrew University, Jerusalem 91904, Israel

In this talk I will mention and try to address briefly some critical issues in the understanding of the phototransport and its corresponding consequences regarding the operation of the halide perovskites p-i-n solar cells.

These are:

1) Can we learn on the phototransport from measurements of the photoluminescence?
2) Does the bimolecular recombination dominate the measured phototransport?
3) Is there evidence for exotic photocarriers such as polarons in the halide perovskites?
4) Can we learn on the steady state phototransport from high intensity excitation of very short pulses?
5) Where do the energy levels of the defect centers lie within the bandgap of the halide perovskites?
6) Are these states relevant to the phototransport?
7) What is the classical relation between the phototransport parameters and the efficiency of the solar cell?
8) Does this relation apply to the halide perovskite solar cells?
9) What does this tell us about the future of these solar cell?
10) How can this future be implemented?