

SEMINARIO

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Ultimo grado obtenido:	Doctorado
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Resumen:

Perovskite solar cells have been one of the main research focus on photovoltaics over the last 10 years mainly as no other photovoltaic technology has observed a more pronounced rise in the efficiency of their devices, going from 3.8% in 2009 to a certified efficiency of 20.9 % for a 1 cm² cell and recently to 23.7% for an aperture area of 0.07 cm². Due to the ionic nature of its components, the perovskite structure is fairly easy to synthesize via solution-based methods and at the same time, the performance of the perovskite solar cells has proven to be very resilient to defects. However, in spite of these promising features, the development of perovskite solar cells still presents important challenges: low stability and a puzzling hysteretic behaviour that appears to be intrinsic to the organolead halide perovskites. There is an important relationship between these drawbacks and the ionic nature of the perovskite. In this seminar we will explore the nature of this relationship by describing theoretical and experimental characterization techniques employed to study ion migration in perovskite solar cells, including impedance spectroscopy, hysteresis measurements and current-potential curves. We will also present recent evidence of suppression of ion migration by changing the chemical composition of the perovskite structure.