
High-throughput search of dopants for efficient ferroelectric oxide based solar cells

Researchers:

- Jose Javier Plata Ramos. Universidad de Sevilla.

Language Undefined

Description:

Proyecto asignado a través de la Red Española de Supercomputación ([RES](#) [1]).

Photovoltaics, PV, devices performance are based on 3 main features: a) efficient light absorption, b) effective charge separation and c) fast transport and charge extraction. Conventional solar cells are good light harvesters but are limited by the Shockley-Queisser limit because carriers are separated by the internal electric field at the p-n junction. Ferroelectric materials, on the other hand, present a spontaneous electric polarization, providing an alternative way to separate excited carriers. Ferroelectric oxide perovskites also present hindrances that should be overcome. Reducing the bandgap from 2-3 eV to 1.5 eV is the main goal, being doping or substitution of the A and B sites, the most common strategy. In this activity, we strive to use high-throughput techniques to tune the bandgap of ferroelectric oxides by doping.

Web:

Source

URL:<https://www.cenits.es/en/proyectos/high-throughput-search-dopants-efficient-ferroelectric-oxide-based-solar-cells>

Links

[1] <https://www.res.es/>