
Towards high-efficient and stable all-inorganic perovskites as sun-light absorber materials

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Language Spanish

Description:

Proyecto asignado a través de la Red Española de Supercomputación ([RES](#) [2]).

Hybrid organic-inorganic lead halide perovskites have earned much consideration for their use in photovoltaic devices, with efficiencies as high as 23%. But yet important challenges need to be overcome: poor stability and the toxicity of Pb. This project purpose the search for suitable perovskite semiconductor materials with enhanced stability, low toxicity as well as improved sunlight conversion efficiencies. Both, the intrinsic stability (replacing the organic cations by inorganic ones) and toxicity (by reducing Pb quantity) problems of perovskite materials can be fixed by adjusting the chemical composition. Thus, the effect of the chemical composition of all-inorganic perovskites with general formula $\text{Cs}_{1-a}\text{RbPb}_{1-b}\text{Sn}_{b/2}\text{I}_{2-2b}\text{Br}_b$ on stability and sub-light absorption related-properties by using ab-initio methods.

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Links

[1] <https://www.upm.es/> [2] <https://www.res.es/>