

# Effect of Ion Migration in Perovskite Solar Cells

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## What are the effects of the ions on Perovskite Solar Cells?

- Variation Open Circuit Voltage
- Modification of the Effective Energy Height Barriers
- Instabilities in Current-Voltage Curves

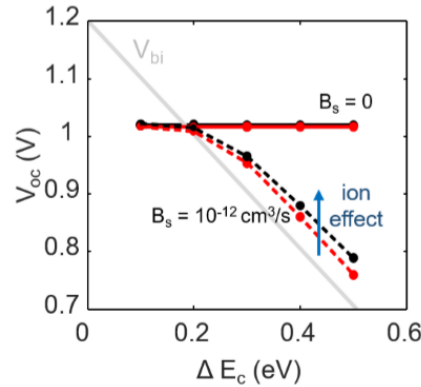
## Conclusions

The electric field built by the ion profile does not contribute as an additional corresponding ionic voltage.

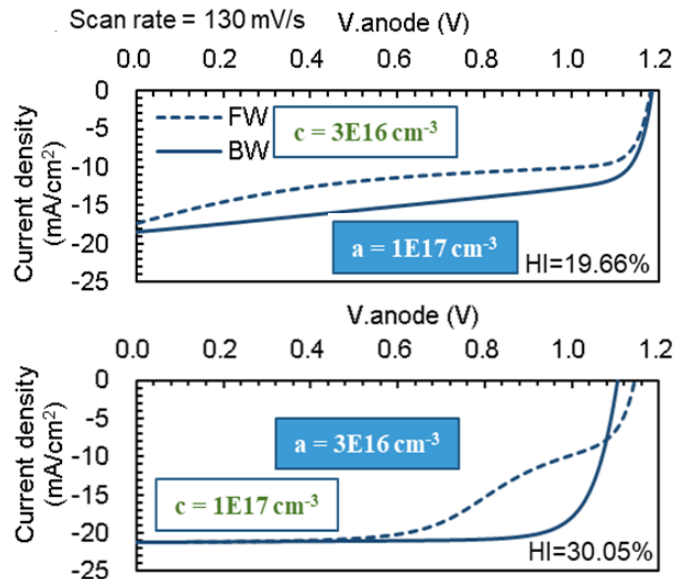
A lower concentration of slow negative ions could effectively reduce the hysteresis and enhance the efficiency of PSCs.

## Variation Open Circuit Voltage

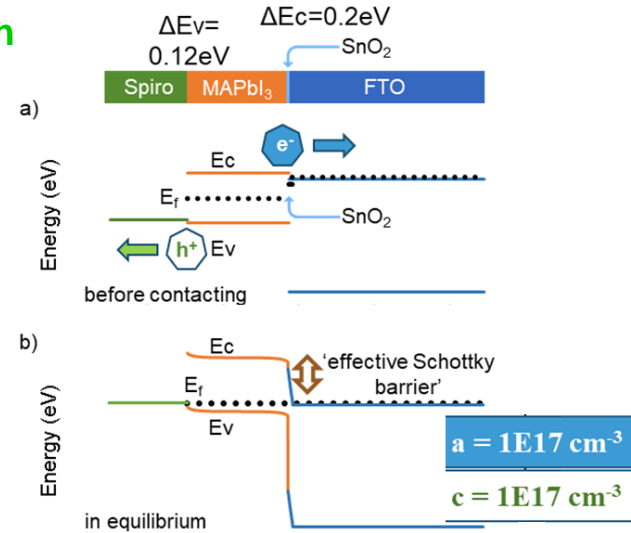
### Surface Recombination + Ion Migration



## Instabilities in Current-Voltage Curves



## Effective Energy Height Barriers



## Tools

PSCs modeled by drift-diffusion transport equations for e-h, anions and cations

- [1] M. García-Rosell et al. J. Phys. Chem. C 2018, 122, 25, 13920-13925
- [2] Y. Huang et al. IEEE 46th PVSC 2019
- [3] P. López-Varo, et al. ACS Energy Letters 1450-1453 (2017)

