



# 'Sunproofing America' Revolutionizing the supply chain for solar cells



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## Who is American Perovskites LLC (AP)?

An early-stage startup company aiming to supply material and equipment for perovskite-based solar technology with production facilities in Colorado.

We are driven by a passion for scientific innovation and a commitment to making a positive impact on the world.

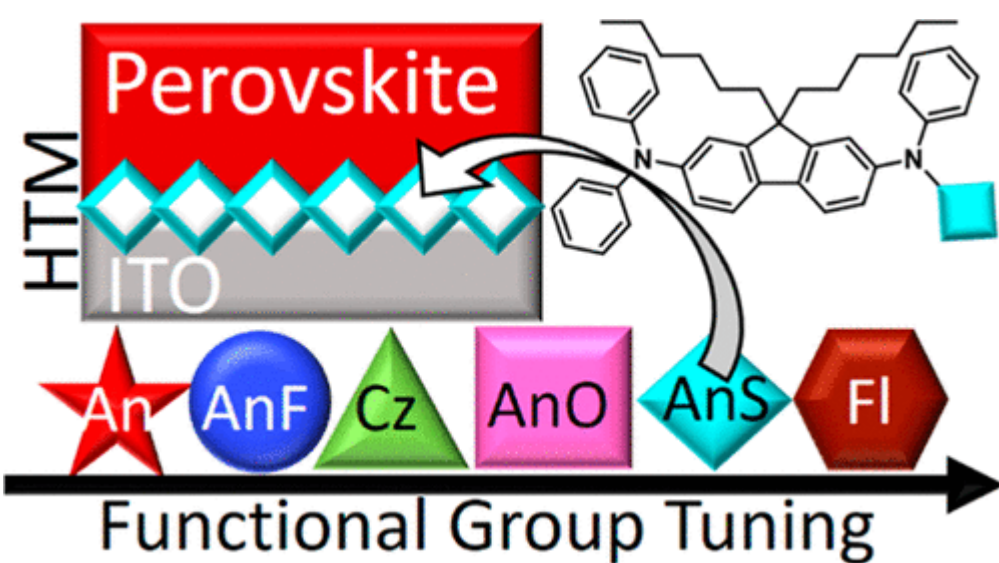
Our journey began with a simple but powerful idea: to harness the potential of perovskite materials, accelerate the manufacturing of solar cell semiconductors, and create a diversified and inclusive future workforce.

## What is a perovskite solar cell?

Perovskite solar cells (PSCs) were developed about 15 years ago and can achieve higher power conversion efficiencies at lower cost compared to traditional solar cells.

## What is the hole transport layer?

Hole transport layers (HTLs) are thin films placed in perovskite solar cells to facilitate the efficient movement of positive charges (holes) from the light-absorbing perovskite layer to the electrode.

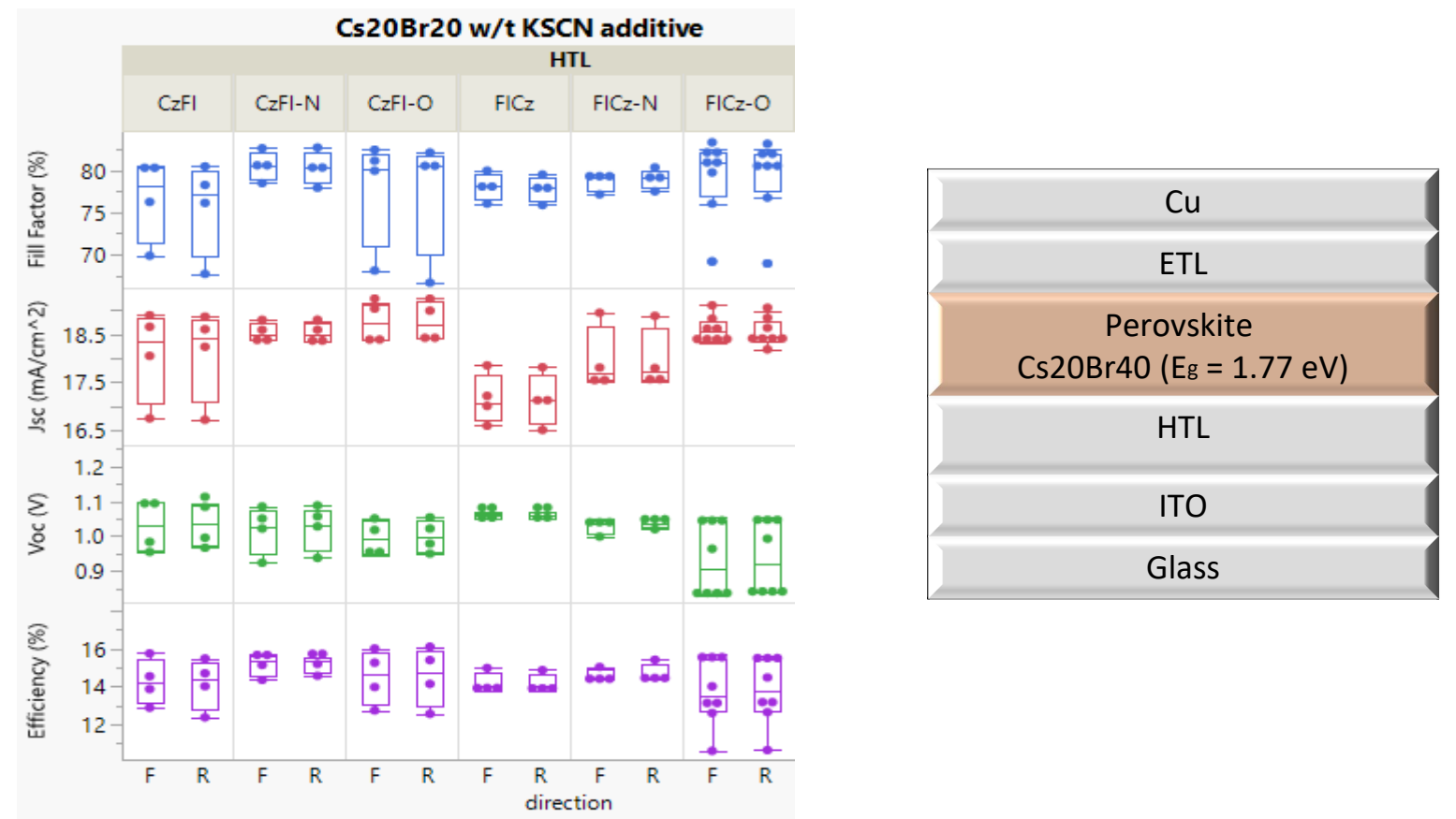


## Why polymer hole transport materials?

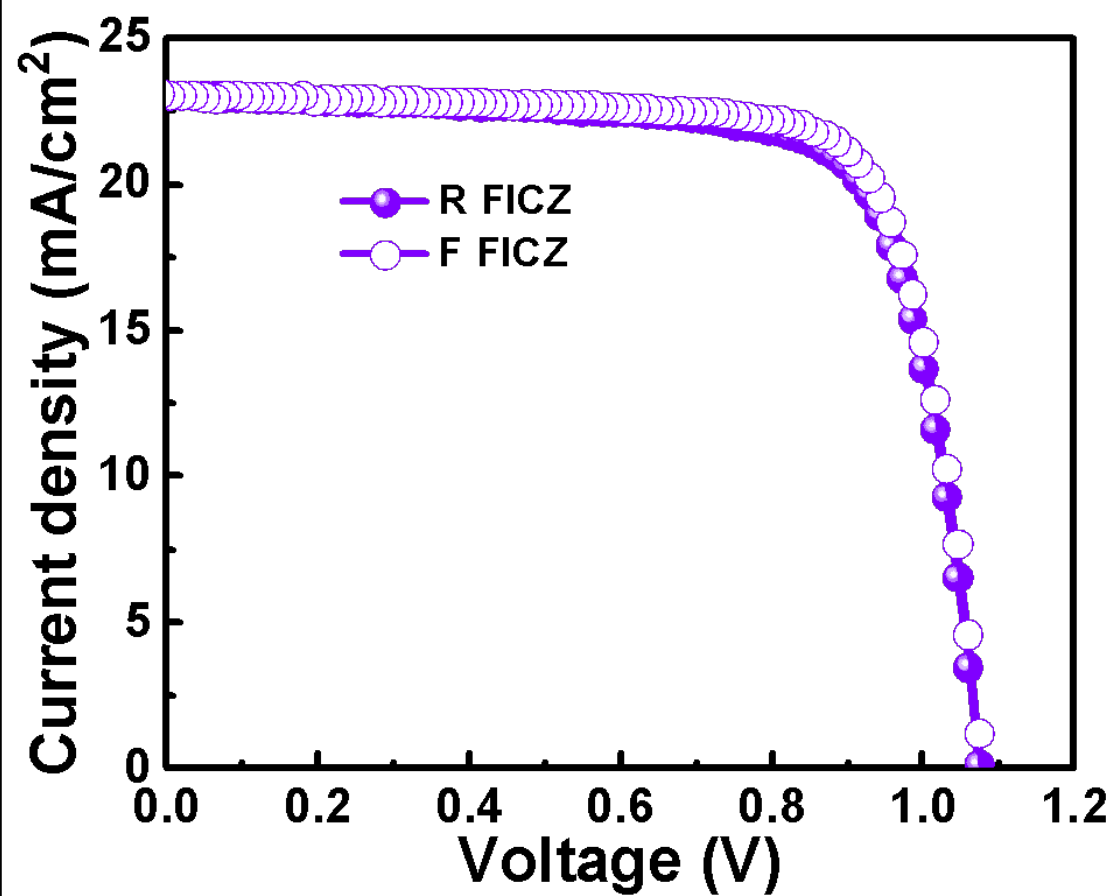
AP's polymer hole transport materials (PHTMs) offer advantages such as high hole mobility, thermal and chemical stability, excellent surface contact and passivation, and cost competitiveness, making them desirable for use as HTLs in perovskite solar cells to enhance their performance and stability.

## Preliminary Device Performance as of May 2023

- CzFL shows good performance for wide-bandgap (1.77 eV) PSCs.



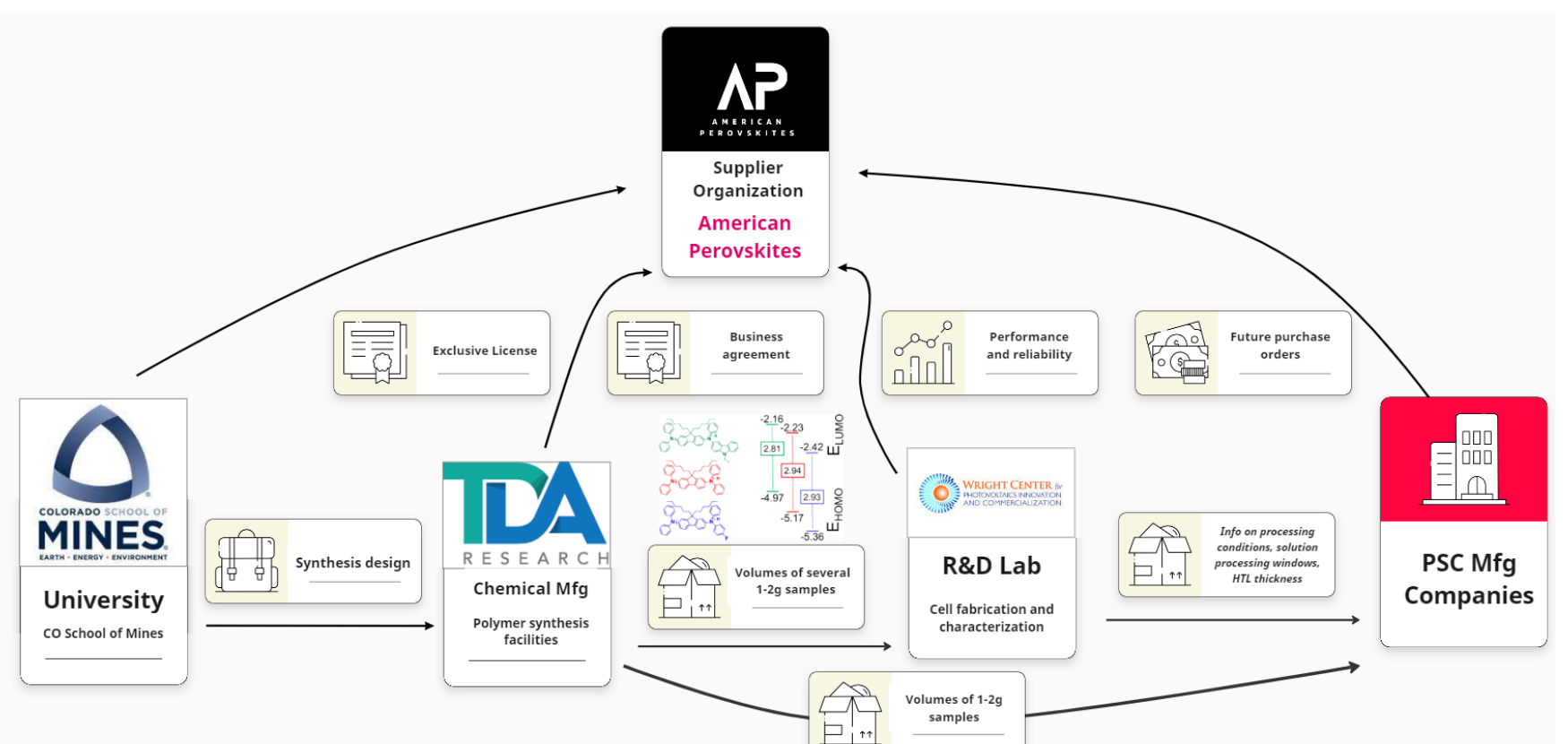
- FICz show good performance for medium-bandgap (1.53 eV) PSCs



Solvent: Chlorobenzene,  
Concentration: 2 mg/mL  
Spinning speed: 3000 rpm

## Future work

Within AP's commercialization framework, we will be scaling up the PHTMs on larger area substrates, inventorying new materials (i.e., passivators and precursor inks), and running machine learning models.



Above, our strategic framework for commercialization