

Using Perovskite Solar Cells for Power Generation in Space

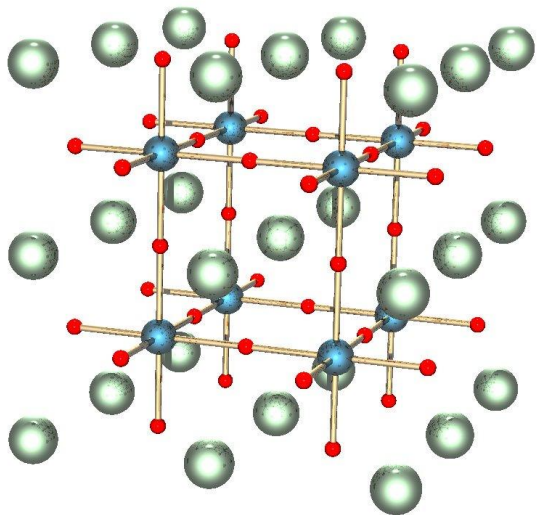
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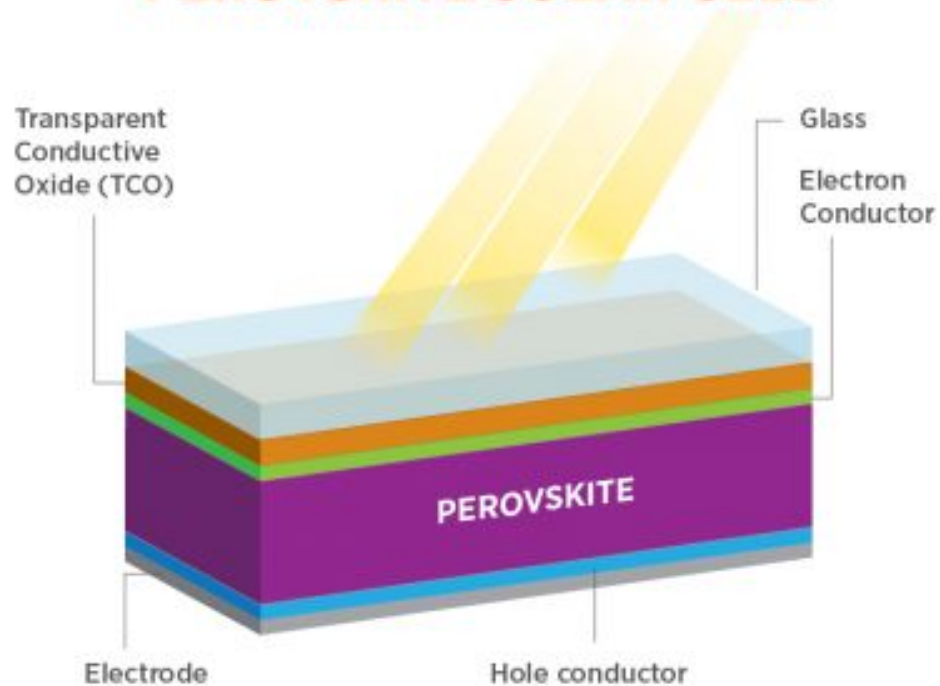


What are Perovskites?

- Liquid Crystals
- Lead Halide



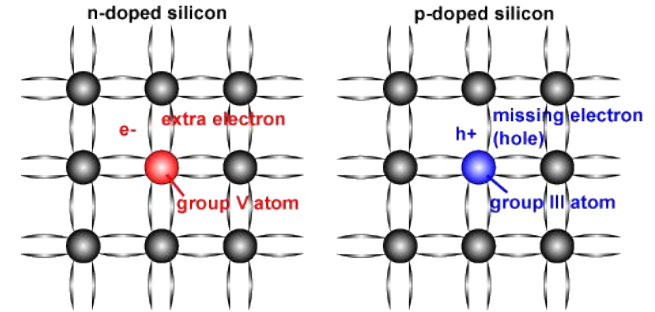
THIN FILM PEROVSKITE SOLAR CELL



Benefits and Drawbacks of Perovskites

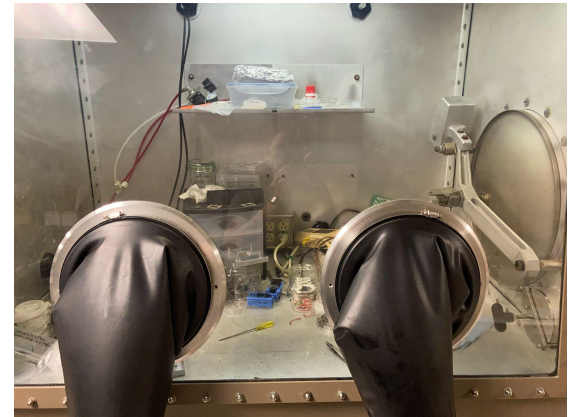
Benefits

- Lightweight
- Cheaper to produce—doping vs solution based
- Nearly as efficient as silicon
- Resilient under high energy radiation



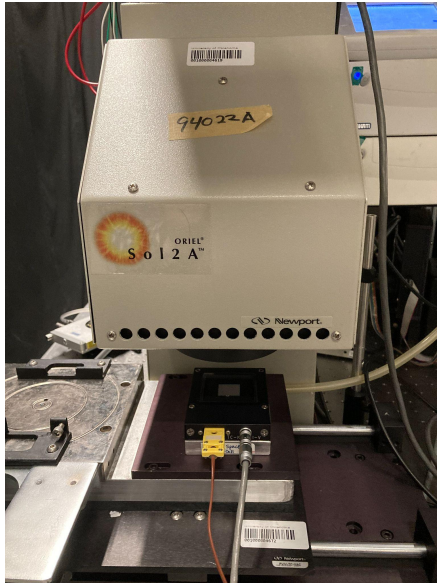
Costs

- Volatile to air and water
- Cesium and lead

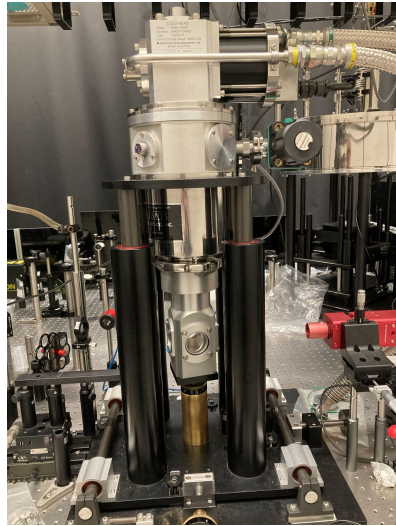


Measuring Perovskites

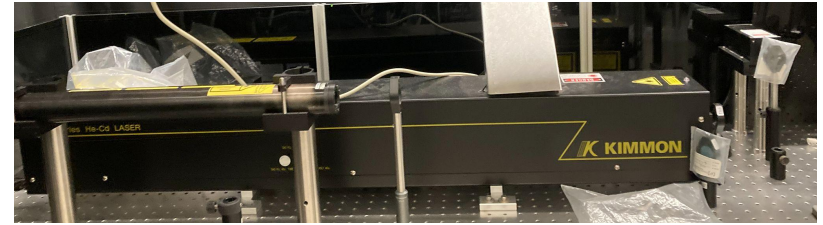
Solar Simulator



Cold-Finger



He-Cd (Blue) Laser–Photoluminescence



Citations

A. R. Kirmani et al., *Countdown to Perovskite Space Launch: Guidelines to Performing Relevant Radiation-Hardness Experiments*, *Joule* **6**, 1015 (2022).

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Perovskite Solar Cell, <https://www.cei.washington.edu/education/science-of-solar/perovskite-solar-cell/>.