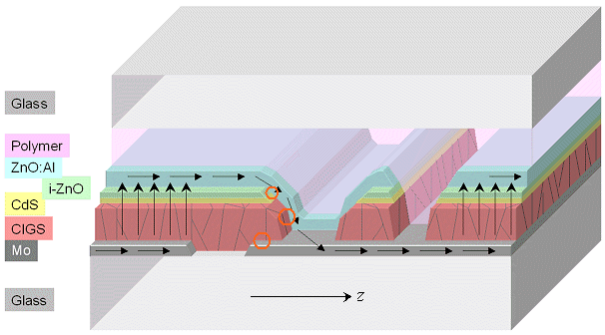
Exercise 8.3-1

Making In-Situ Series Connections

Consider the basic structure of a thin film module about **(1.000× 1.000) mm^2** in size. made "in one piece" and consisting of individual solar cells **(10× 1.000) mm^2** that are all switched in series in-situ during the production process.

- The final structure seen in cross-section at the position of the series connection should look like this:



Courtesy of Dr. Powalla; ZWS Stuttgart,

1. Suggest a way to make this module. You don't have to you describe how layers are deposited; all that counts is the interconnect structure. You may also forget about the polymer and glass top layer; which are trivial.

- **Hint** : You should consider making three "cuts" at the right time a the right place

2. Assuming that there is some tolerance for the alignments of whatever has to be aligned, discuss pro and cons of the structure above with respect to the nominal short circuit because of the **Mo** overlap between the two solar cells.

Solution