Solution to Exercise 8.3-1

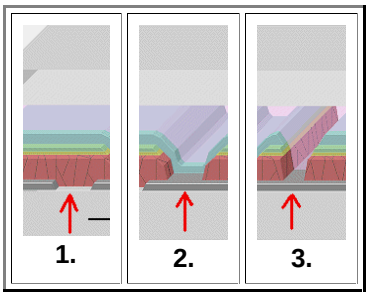
Making In-Situ Series Connections

Illustration

1. 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.
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.

Thius is easy because one can deduce hat needs to be done right form the picture

- **1.** Deposit the **Mo** contact metal and structure it as shown.
- **2.** Deposit the **CIGS** layer plus the **CdSe** and **i-ZnO** and structure as shown.
- **2.** Deposit the**ZnO:Al** layer and structure as shown by cutting through all layers down to the **Mo** but not through the **Mo**.



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.

- Well - do it!