NATIONAL INSTITUTE FOR LASER, PLASMA AND RADIATION PHYSICS

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RAPID HEATING/COOLING PROCESS APPLIED TO DOPED TRANSPARENT CONTACTS USED IN CHALCOGENIDE SOLAR CELLS

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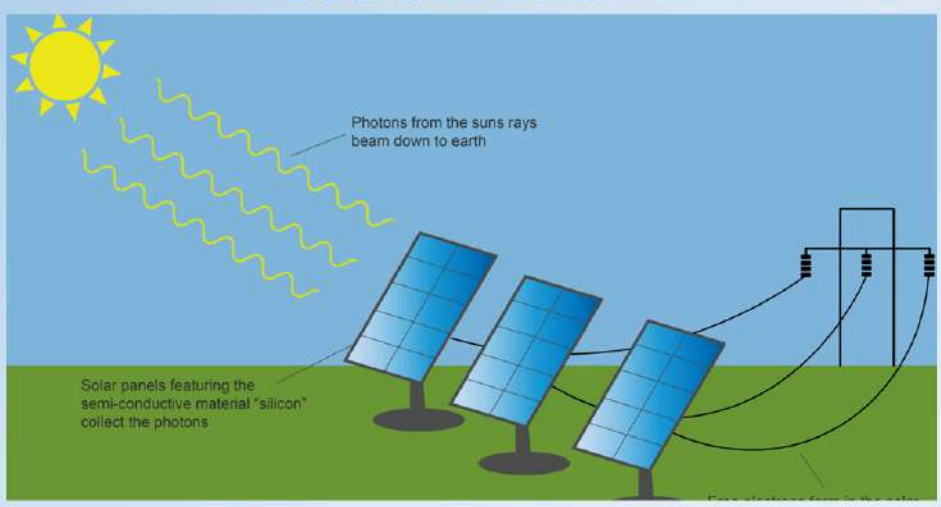
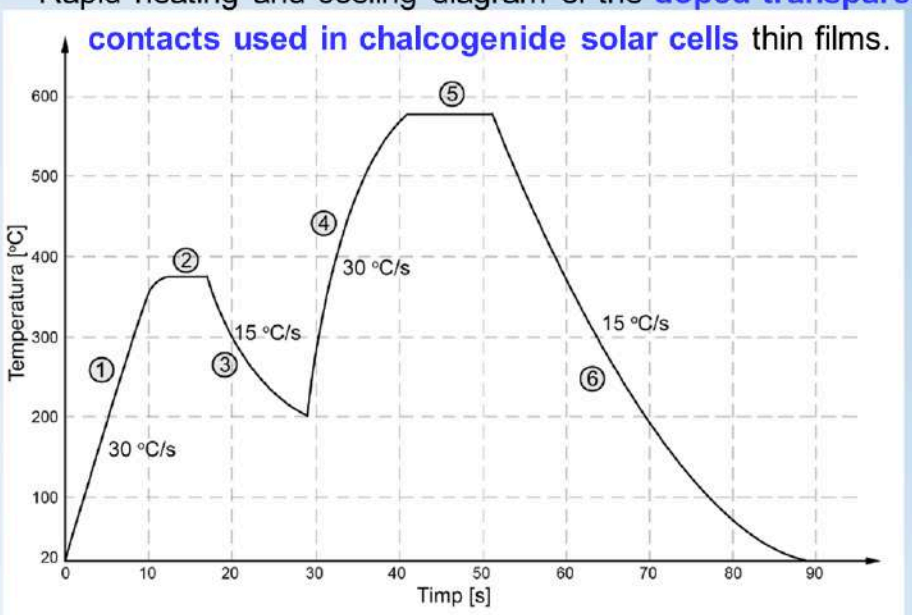
DOMAIN: SOLAR CELLS



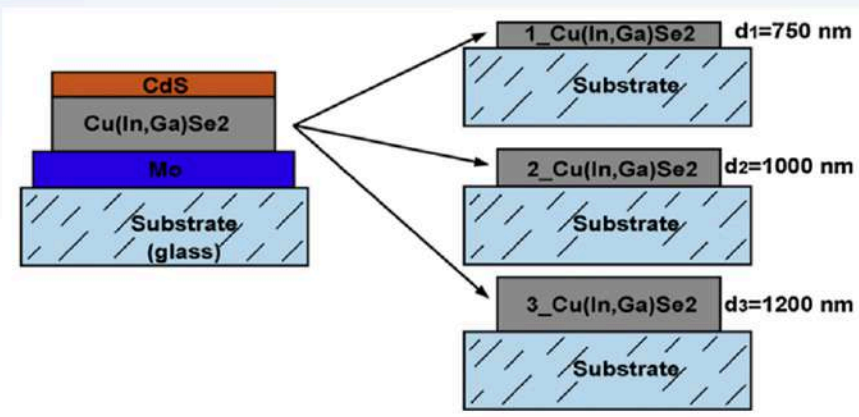
Rapid heating and cooling diagram of the **doped transparent contacts used in chalcogenide solar cells** thin films.



The invention refers to a rapid heating/cooling procedure that takes place in oxygen flow and it is applied to doped transparent and conductive materials. Following this process, doped thin films of transparent polycrystalline contacts are obtained.

These thin films have an increased crystallite size and improved electrical conductivity, making them, essentially, active elements for chalcogenide solar cells.

In this procedure, the thin films are subjected to rapid heating in oxygen atmosphere, maintained on a temperature floor, followed by cooling/ heating and then the process continues with cooling at the end. Thin films as doped transparent contacts, resulting from rapid heating/ cooling, have improved structural and optoelectronic properties.



Schematic representation of the **chalcogenide** structure and thin films with different thickness

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