ABSTRACT OF THE DISCLOSURE

Embodiments of the present invention generally provide an apparatus and method for forming an improved thin film single or multi-junction solar cell in a substrate processing device. One embodiment provides a system that contains at least one processing chamber that is adapted to deposit one or more layers that form a portion of a solar cell device. In one embodiment, a method is employed to reduce the contamination of a substrate processed in the processing chamber by performing a cleaning process on the inner surfaces of the processing chamber prior to depositing the one or more layers on a substrate. The cleaning process may include depositing a layer, such as a seasoning layer or passivation layer, that tends to trap contaminants found in the processing chamber. Other embodiments of the invention may provide scheduling and/or positioning the cleaning processing steps at desirable times within a substrate processing sequence.