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The invention relates to the semiconductor technique and may be used at the obtaining in the open gas - transporting - system P^+ InP-PInP/CdS and P^+ GaAs-pGaAs/CdS heterostructures for solar and photo cells.

For rising the yield and quality of the solar cells electrophysical parameters by means of the proposed process, including the grow of the P^+ InP-PInP/CdS and P^+ GaAs-pGaAs/CdS structures in the chloride gas - transporting system, chemical etching, structures location in the reactor, reactor blow - down witn hydrogen, furnace heating, the CdS layer growing is realized after locating the reactor into the furnace and temperature stabilization, then the reactor is drawn out of the furnace, by that, the speed of the hydrogen flow and growing one during the growing in the source zone are correspondingly of 150 cm^3/min and 220...240 cm^3/min., and during the temperature stabilization and cooling the speed makes correspondingly 20...30 cm^3/min and 1000 cm^3/min.

The technical result consists in the time decreasing of the temperature stabilization in the reactor that provides the strates electrophysical parameters and source component conservation, heterostructures interdiffusion process inhibition.