The invention relates to the technology of semiconductor devices, namely to processes for obtaining photovoltaic cells.
The process, according to the first variant, includes processes for chemical application or deposition from the impurity film vapours onto the surface of the semiconductor wafer, for diffusion, oxidation and deposition of ohmic contacts. Novelty consists in that the processes for diffusion of impurities from different sources with formation of n^+ - p or p^+ - n, or n^+ - p - p^+ type junctions, for oxidation, deposition of ohmic contacts, and deposition of antireflecting films are carried out with rapid photothermal processing.
Novelty of the process, according to the second variant, consists in that onto one or both opposite surfaces of the "p" or "n"-type semiconductor wafer it is deposited a diffusion source in the form of vitreous film doped with one of the donor or acceptor impurities, for example, phosphorosilicate or borosilicate, by the method of anodic oxidation or chemical deposition in the presence of ultra-violet rays or in the absence of light, with subsequent rapid photothermal processing of the wafer, impurity diffusion with formation of n^+ - p, or p^+ - n, or n^+ - p - p^+, or p^+ - n - n^+ type junctions in vacuum, in the air or in the presence of inert gas, for example, argon, and deposition of antireflecting films.
Novelty of the process, according to the third variant, consists in that onto one of the surfaces of the semiconductor "p" or "n"-type wafer it is deposited a diffusion source in the form of vitreous film doped with one of the donor impurities, for example, phosphorosilicate, and onto the opposite surface of the semiconductor wafer it is deposited another diffusion acceptor-type source in the form of metal film, for example, aluminic, by the method of vacuum evaporation, or anodic oxidation, or chemical deposition in the presence of ultra-violet rays or in the absence of light, with subsequent photothermal processing of the wafer, impurity diffusion with formation of n^+ - p or p^+ - n, or n^+ - p - p^+, or p^+ - n - n type junctions in vacuum, in the air or in the presence of inert gas, for example, argon, and deposition of antireflecting films.
Novelty of the process, according to the fourth variant, consists in that it includes the processes for diffusion of impurities from different sources with formation of junctions according to claims 1, 2 or 3, then after cleaning the wafer surface there takes place deposition of metal ohmic contacts, for example, Al or Ni, or Cu, or Ag paste, or transparent ohmic contacts of InSnO, with subsequent rapid photothermal processing in vacuum, in the air or in a chamber with gases, for example, argon, and deposition of antireflecting films.
Novelty of the process, according to the fifth variant, consists in that it includes the processes for diffusion of impurities from different sources with formation of junctions and deposition of ohmic contacts according to claims 1, 2, 3, or 4, afterwards follows the chemical deposition of the transparent film with antireflecting properties from metal oxide, for example, ZnO_2 or TiO_2, with subsequent rapid photothermal processing in vacuum, in the air or in a chamber with gases, for example, with oxygen.

Claims: 5
Fig.: 2