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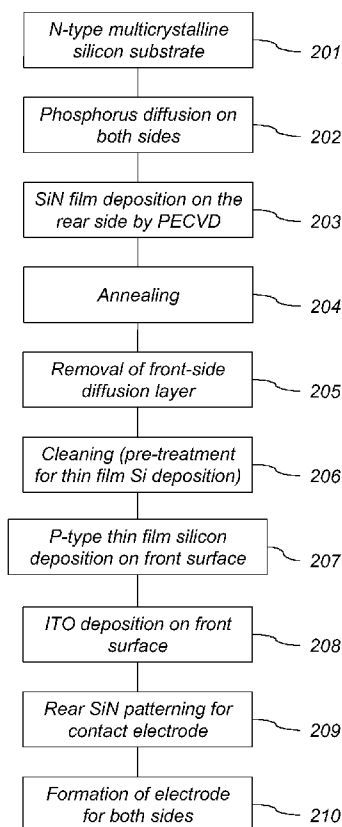
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(54) Title: METHOD OF MANUFACTURING N-TYPE MULTICRYSTALLINE SILICON SOLAR CELLS



(57) Abstract: The invention provides a method of manufacturing a HIT structure for multicrystalline silicon substrate made of an n-type multicrystalline silicon substrate. First, the n-type multicrystalline silicon substrate is subject to a phosphorus diffusion step using a relatively high temperature. The front side diffusion layer is then removed. Through the process of the phosphorus diffusion, impurities like iron included during the ingot-casting are gettered and the bulk property is improved. The phosphorus-diffused layer also serves as a back surface field to raise the voltage and a back contact with low resistivity. As a next step, a p-type silicon thin film is deposited at the front side of the substrate. Due to this specific sequence, heating the p-type silicon thin film at higher temperatures than its deposition temperature can be avoided, and so the quality of the p-type silicon thin film is maintained.

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