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(54) **METHOD OF MANUFACTURING
CRYSTALLINE SILICON SOLAR CELLS
WITH IMPROVED SURFACE PASSIVATION**

(56) **References Cited**

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(57) **ABSTRACT**

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The present invention provides a method of manufacturing a crystalline silicon solar cell, comprising: —providing a crystalline silicon substrate having a front side and a back side; —forming a thin silicon oxide film on at least one of the front and the back side by soaking the crystalline silicon substrate in a chemical solution; —forming a dielectric coating film on the thin silicon oxide film on at least one of the front and the back side. The thin silicon oxide film may be formed with a thickness of 0.5-10 nm. By forming a oxide layer using a chemical solution, it is possible to form a thin oxide film for surface passivation wherein the relatively low temperature avoids deterioration of the semiconductor layers.

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(52) **U.S. Cl.**

USPC **438/71**; 438/72; 438/787; 257/E21.487

(58) **Field of Classification Search**

USPC 438/72, 787; 257/E21.487

See application file for complete search history.

17 Claims, 3 Drawing Sheets

