T20-154

Tohoku & Yamanashi University's Invention

N-type SnS thin films applicable for solar cells

World's first n-type SnS thin films applicable for solar cells. Pollution-free, high-efficient, thin and light-weight solar cell and photoelectric conversion elements.

Summary

Tin sulfide (SnS) consists of the low-cost and environmentally-friendly elements, and has optimal optical properties for solar cells with a theoretical cell conversion efficiency of 25%. Homo p-n junction made with n-type and p-type SnS is important for achieving high conversion efficiency in solar cells, however n-type SnS thin film were not realized due to conventional technical limits (Sulfur defects generated during deposition). The present technology realizes n-type SnS thin film, which has not been possible in the past. This technique is essential for the pollution-free, highly efficient, thin-film and light-weight solar cells.

Application

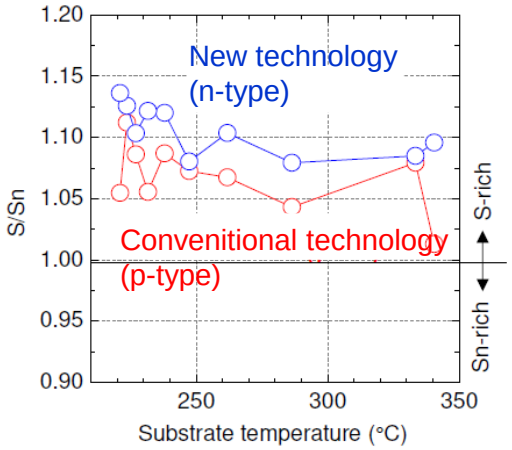
Solar cells and photoelectric conversion elements

Patent Data Sheet
Related patent (Serial number):
2020-108143 (T20-154)
Inventors: SUZUKI Issei, KAWANISHI Sakiko, YANAGI Hiroshi

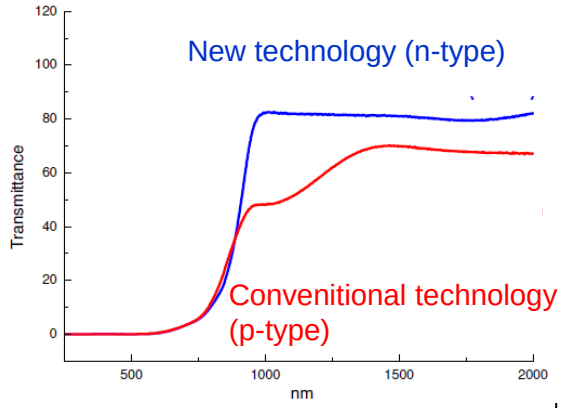
Example

Examples of characteristics of created n-type SnS films

Chemical composition (EPMA)



Transmission spectrum



Please contact us for technical detail

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