

Can domain size engineering improve APV effect of NBT-BT ceramics?

In this work, a new strategy of domain size engineering is proposed to improve the APV effect of 0.88 (Na 0.5 Bi 0.5 TiO 3)-0.12 (Ba 1-1.5x Sm x TiO 3) ceramics. The Sm 3+ is introduced into NBT-BT ceramics to regulate the domain size. The domain size affects the polarization behavior and domain interface effect.

What is a fixed adjustable photovoltaic support structure?

In order to respond to the national goal of "carbon neutralization" and make more rational and effective use of photovoltaic resources, combined with the actual photovoltaic substation project, a fixed adjustable photovoltaic support structure design is designed.

Does domain engineering enhance the anomalous photovoltaic (APV) effect?

The domain engineering strategy is proposed to enhance the anomalous photovoltaic (APV) effect. Enhanced ferroelectric polarization and net interface barrier potential results in a large driving electric field. The dramatic evolution of small-size domain in the temperature field leads to the temperature sensitivity of a APV effect.

Does NBT-BST ceramic have APV effect?

NBT-BST ceramics have excellent APV effect. The APV effect is caused by polarization and domain interface barrier. Sm 3+-doping greatly reduces the domain size. As the domain size decreases, the polarization increases and the number of domain interfaces increases, resulting in an enhanced APV effect.

Does NBT-BST ceramic have a photovoltaic effect?

The NBT-BST ceramics exhibit an obvious photovoltaic effect. With the increase of Sm 3+ content, the open-circuit voltage (VOC) firstly increases and then decreases. In particular, the VOC of the NBT-BST 75 T ceramic reaches 18.1 V, demonstrating the anomalous photovoltaic (APV) effect.

Who are Liwen Zhang and Xihong Hao?

Liwen Zhang is an Associate Professor at School of Materials and Metallurgy, Inner Mongolia University of Science and Technology. His research focuses on ferroelectric and multiferroic materials for energy storage. Xihong Hao is a professor at Inner Mongolia University of Science and Technology, Baotou, China.

Floating photovoltaic (FPV) systems have garnered considerable interest due to their numerous benefits. ... Haisheng Zhao; Xin Li; The research on the failure pressure of perfect pipeline is ...

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studying the strength of solar panel bracket structures is crucial for improving the reliability and safety of solar systems. Jiang et al. conducted analysis and research on the structural design ...

In this field, various effects such as government policies on cost reduction (Wei and Zhao 2022), wind velocity (Abdollahi 2021) and dust effect (Jaszczur et al. 2020;Kazem et ...

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