

# Solar glass boron





## Overview

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What is a boron laser doping selective emitter (LDse)?

Boron laser doping selective emitter (LDSE) has attracted much attention in the current mass-production of n- type tunnel oxide passivated contact (TOPCon) crystalline silicon (c-Si) solar cells.

Why is boron LDse Technology Limited?

However, boron LDSE technology is limited by the low boron concentration of borosilicate glass (BSG) during boron diffusion, as well as the inefficient doping and laser-induced damage.

Does boron suppress silicon crystallization?

These results validate that boron suppresses silicon crystallization due to local deformations caused by the impurities. Infra-red absorption studies and their analysis also confirm the crystallization in boron doped films with additional band appears at  $\sim 611 \text{ cm}^{-1}$ . This band is named as boron induced crystallinity mode of vibrational spectra.

How to make a thinner BSG layer with high boron concentration?

Here, a thinner BSG layer with high boron concentration has been achieved by adjusting the boron diffusion conditions, which overcomes the insufficient diffusion dynamics caused by the low diffusion and segregation coefficients of boron atoms to improve the surface passivation and promote the laser doping.



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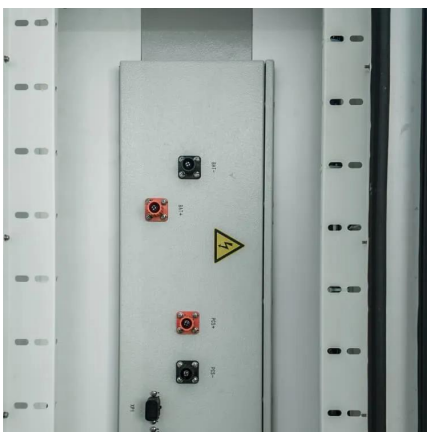


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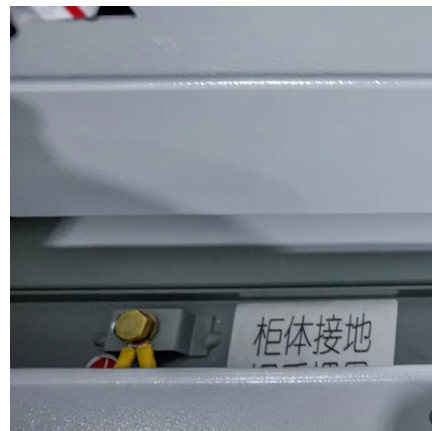
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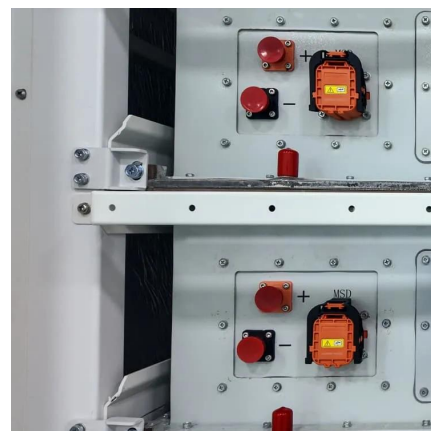


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