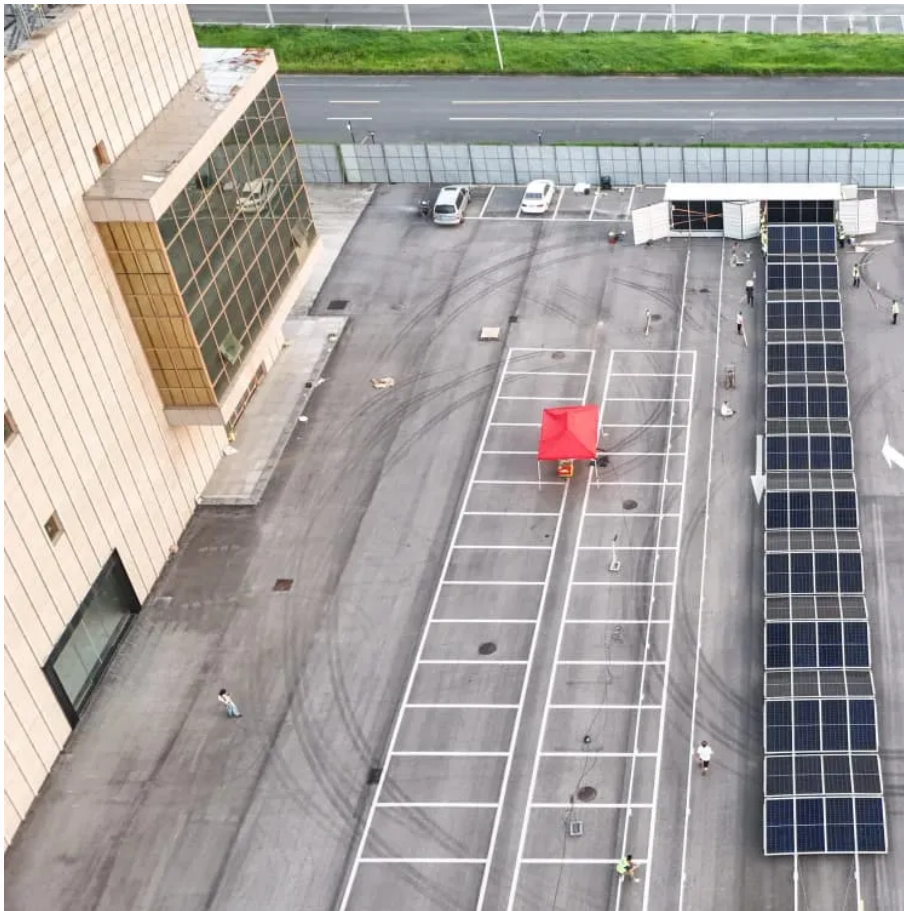


Solar glass and phosphorus





Overview

Where is phosphosilicate glass used?

Present address: Global Photovoltaic Simulation Group, Case Postale 1056, 1211 Geneva 1, Switzerland. The phosphosilicate glass (PSG), fabricated by tube furnace diffusion using a POCl_3 source, is widely used as a dopant source in the manufacturing of crystalline silicon solar cells.

Can phosphosilicate glass be used as a dopant source?

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Can phosphorus rich glass be combined with numerical simulations?

VII. CONCLUSIONS With applying numerical simulations, it is possible to combine various experimental findings into a model, such as the composition of the phosphorus rich glass (PSG), inactive phosphorus in Si and its distribution, the gettering ability, and metal contact formation.

How is phosphosilicate glass formed?

A common P diffusion method is to expose Si wafers in a furnace at about 800–900 C to an atmosphere of POCl_3 and O_2 (with N_2 as a carrier gas), forming a phosphosilicate glass (PSG) on the wafer surfaces. This process step is usually called pre-deposition, and the resulting PSG provides a source of P dopants that diffuse into the Si wafer.



Solar glass and phosphorus



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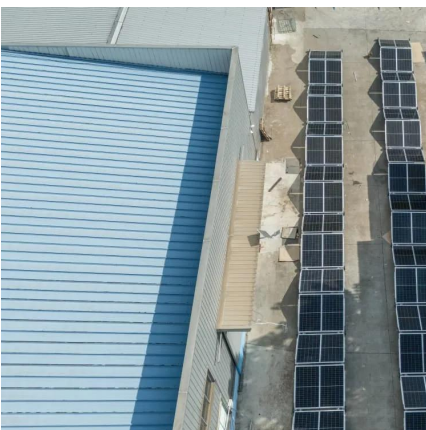
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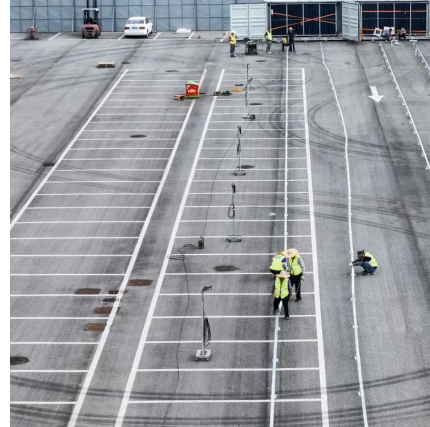
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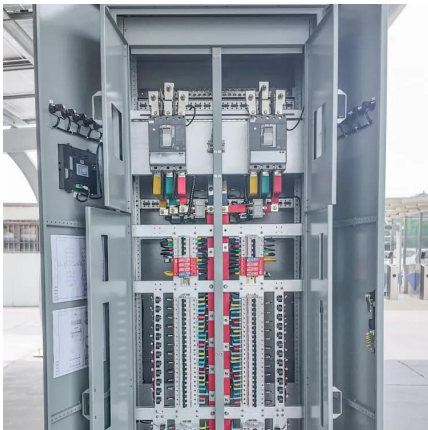
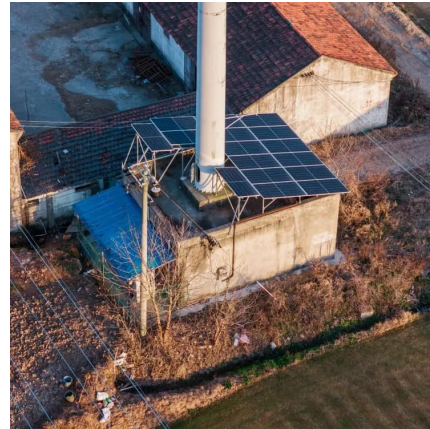
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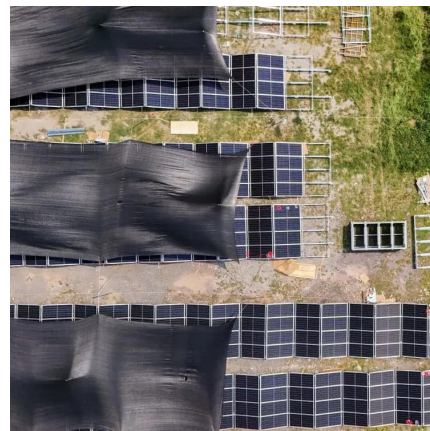


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