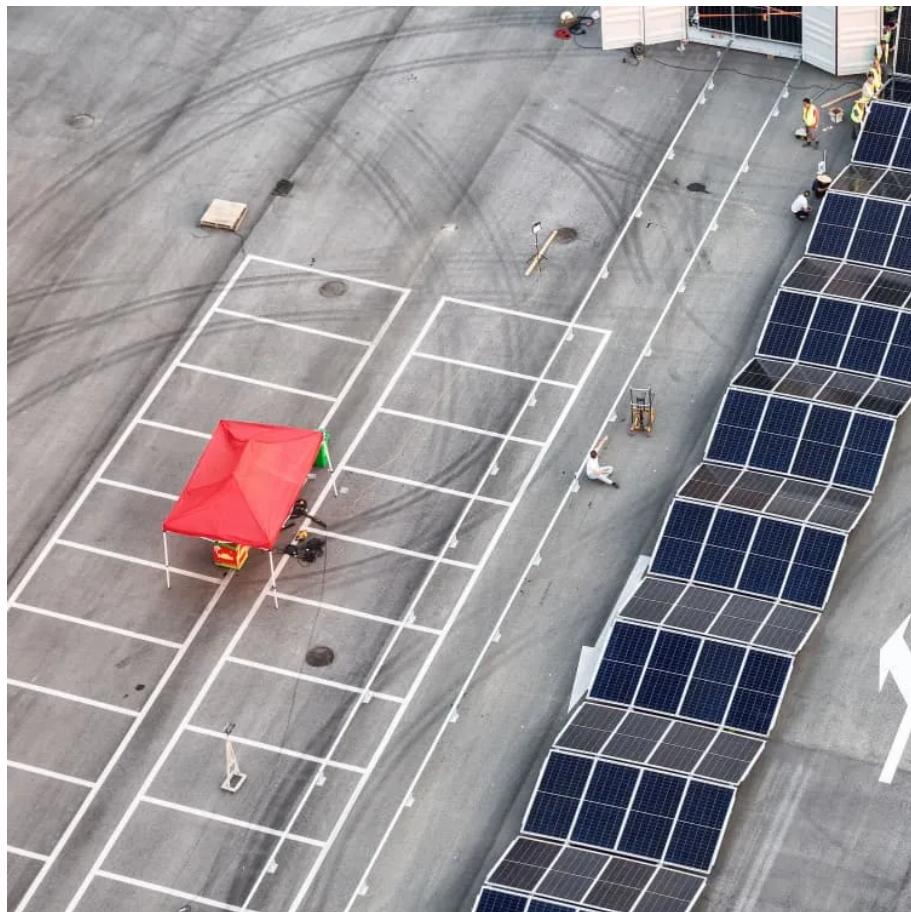




GermanSolarZA

# Solar glass heat dissipation





## Overview

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How does solar irradiation affect thermal loads absorbed by glass?

Thermal loads due to solar radiation absorbed by glass (part of which is conducted to inner space) and transmitted through glass depend on the solar irradiation, type of window glass used, and indoor airflow and temperature distributions.

Does window glass affect solar heat gain & velocity and temperature distribution?

Conjugate mixed-convection analysis was carried out in order to investigate effects of using different types of window glass on solar heat gain and velocity and temperature distributions inside AC rooms using mixing air-distribution system. ACH was varied in the range 5-20. Single- and double-pane clear and tinted window glass were considered.

What happens when solar radiation hits a glass surface?

When solar radiation strikes a glass surface, some of it is transmitted, some of it is absorbed and some of it is reflected. The absorbed component increases the temperature of the glass and the heat is slowly conducted (released) to the outside and inside depending on the difference in temperature.

How to reduce solar heat gain?

In order to reduce the energy consumption due to cooling loads, while maintaining thermal comfort, it is vital to reduce the solar heat gain. The present study focuses on energy saving by comparing the performance of using different types of window glass; namely, single- and double-pane clear and tinted glass.



## Solar glass heat dissipation



### Proceedings of

In addition, a three-dimensional unsteady numerical model of all-glass vacuum tube solar water heater was established, and the flow and heat transfer characteristics of the ...

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### Radiative Warming Glass for High-Latitude ...

An ideal radiative warming window requires higher Tvis and TNIR, coupled with lower ?MIR to enhance solar transmission and suppress heat emission, while commercial low-e glass suffers from intrinsically low ...

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### **Fabrication of Thermally Stable Heat-Shielding Coated Glass for Solar**

Here, we report a thermally stable heat-shielding coated glass for solar glazing in a simple way via direct calcination of Ce and Sb co-doped SnO<sub>2</sub> nanoparticles with ...

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### Radiative Warming Glass for High-Latitude Cold Regions

An ideal radiative warming window requires higher Tvis and TNIR, coupled with lower ?MIR to enhance solar transmission and suppress heat emission, while commercial low ...



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### [FB62-19 Thermal Stress in Heat-Treated Spandrel Glass](#)

Recently, attention has been drawn to several incidents in which spandrel glass has experienced solar-induced thermal stress breakage. Although a relatively rare occurrence,

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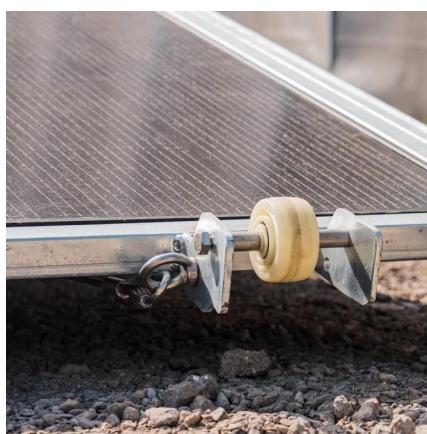
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### Fabrication of Thermally Stable Heat ...

Here, we report a thermally stable heat-shielding coated glass for solar glazing in a simple way via direct calcination of Ce and Sb co-doped SnO<sub>2</sub> nanoparticles with polysilazane (PSZ) coatings in air.

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### **Effect of window-glass type on solar heat gain and velocity ...**

Results of model application show that airflow pattern and temperature distribution are sensitive to the solar heat gain and, hence, to the type of glass used. It is found that air ...

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### HEAT GAINS and LOSSES : WINDOWS and SKYLIGHTS (Glass)

The heat gain components through glass consists of solar radiation and conduction. Solar radiation is considered in two parts - direct and diffuse (or scatter). Diffuse radiation is ...

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