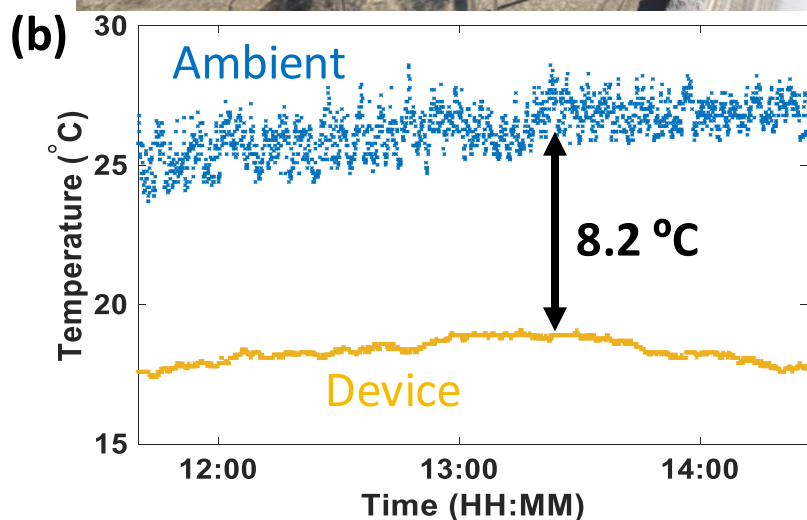
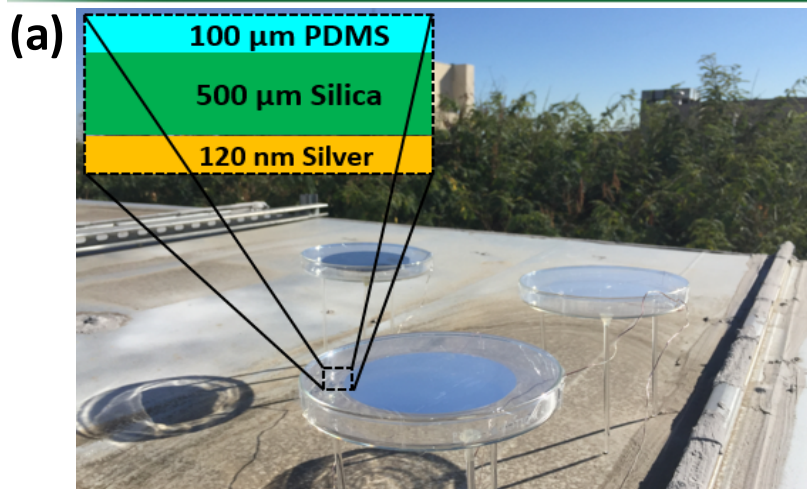


# Daytime Radiative Cooling Using Glass Slides

March 2017 Research Highlight



(a) Radiative cooler under test

(b) Temperature measurement results of the ambient air and cooler

## Scientific Achievement

We achieved daytime radiative cooling of 8 degrees below ambient temperature under direct sunlight using a simple 1D stack made of PDMS, glass, and a silver back reflector.

## Significance and Impact

Inexpensive, abundant materials can be used for applications such as dry cooling for power plants and buildings, significantly reducing energy consumption.

## Research Details

The cooler is fabricated by coating a polymer film on the front side as a near-perfect emitter in the infrared (4.5 to 25  $\mu\text{m}$ ) with emissivity of  $\sim 95\%$  and a silver film on the back side as a good solar reflector (0.3 to 2  $\mu\text{m}$ ) with reflectivity of  $\sim 97\%$ .

Jun-long Kou, Zoila Jurado, Zhen Chen, Shanhui Fan, and Austin J. Minnich,  
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Work was performed at Caltech and Stanford.



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