参考译文

Antifreeze Surface Fights Ice with Ice

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Every year, 20 million tons of salt are dumped on roads and highways across the U.S. to eliminate ice. And airlines spray up to 1,000 gallons of antifreeze on any one plane to de-ice it. But now scientists have come up with what might be a more environmentally friendly alternative.

美国每年有2000万吨的盐被倾倒在道路和高速公路上用以融冰。航空公司在每架飞机上都要喷洒1000加仑的防冻剂来除冰。但现在，科学家们想出了一种更环保的替代方案。

"We've often heard the expression, 'It's time to fight fire with fire.' Well I think now it's time to fight ice with ice." Jonathan Boreyko studies fluid mechanics at Virginia Tech.

“我们经常听到这样一句话，‘是时候以其人之道还治其人之身了。’”“好吧，我想现在是时候用冰与冰对抗了。”Jonathan Boreyko在弗吉尼亚理工大学学习流体力学。

And what he means by that is: if ice growth is inevitable, why not design certain areas of plane wings or roads or HVAC systems specifically to attract ice…to control the chaos, and keep ice-forming moisture away from the rest of the surface? Use ice itself…as antifreeze?

他的意思是:如果结冰是不可避免的，为什么不设计一些特定区域的飞机机翼、道路或暖通系统来吸引冰…以遏制混乱，并使冰形成的水分远离表面的其他部分?用冰本身作为防冻剂?

To test the idea, he and his team used lasers to cut tiny grooves into aluminum surfaces. Those grooves, once filled with water and frozen, turned into tiny stripes of ice, which indeed kept the rest of the surface 80 to 90 percent frost-free, even in incredibly humid cold air.

为了验证这个想法，他和团队用激光在铝制表面切割出细小的凹槽。这些沟槽一旦被水填满并冻结，就会变成细小的冰纹，即使在极其潮湿的寒冷空气中，这些沟槽也能保持表面80%到90%的无霜状态。

"What's happening is the ice striped areas are just so attractive to the moisture, that it kind of tractor beams all the moisture that's going to the surface towards the striped regions preferentially, such that the intermediate areas, if you design it right, just stay completely dry."

“冰条纹区域对水分的吸引力太大了，它就像拖拉机一样，把所有的水分优先输送到条纹区域，这样中间的区域，如果你设计正确，就会保持完全干燥。

The results—and some cool time-lapse videos—are in the journal ACS Applied Materials & Interfaces.

结果——以及一些很酷的延时视频——刊登在《ACS应用材料与界面》杂志上。

Boreyko and his team have already patented the tech. If it proves viable after more R&D, it might make our wintertime fight against frost a lot more environmentally friendly.

Boreyko和他的团队已经为这项技术申请了专利。如果经过深度研发，证明这项技术可行的，这可能会让我们冬季与霜冻的战斗更加环保。

听力原文

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