Shape morphing fins for frost removal

A novel shape-morphing fin efficiently and cost-effectively breaks and removes frost from heat exchangers, providing a low-cost, easy-to-integrate alternative to less efficient heating methods.

Researchers at Purdue University have developed a shape morphing material, a fin, to break and remove frost from heat exchangers. Frost slows down efficiency of heat exchangers. Current technologies for removing frost use heating which can damage equipment coils, are energy inefficient, and usually do not completely remove frost. The fins created by Purdue researchers feature large oscillation amplitude and a fine-tuned shape on the face and back to optimize performance.

Advantages:

-Efficient

-Low-Cost

-Easy to Integrate into Existing Facilities

Potential Applications:

-Defrosting Heat Exchangers

-Mechanical Fin

TRL: 3

Intellectual Property:

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