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Icephobicity of Leaves H. PIROUZ KAVEHPOUR, University of California, Los Angeles, ELIKA T. SHIRAZI, Oakwood School, ELAHEH ALIZADEH-BIRJANDI, University of California, Los Angeles — Ice adhesion and excessive accumulation on exposed structures and equipment are well known to cause serious problems in cold-climate regions; therefore, the development of coatings that can resist icing can solve many challenges in various areas of industry. This work was inspired by nature and ice-resistivity and superhydrophobicity of plants leaves. Kale is an example of a plant that can be harvested in winter. It shows superhydrophobic behavior, which is normally known as an advantage for cleaning the leaves, but we were able to show that its surface structure and high contact angle of water drops on kale leaves could delay the ice formation process making it a good candidate for an ice-repellent coating. We have performed in-depth experimental analyses on how different plants can prevent icing, and contact angle measurements and scanning electron microscopy (SEM) of the leaves were taken to further mimic their surface morphology.

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