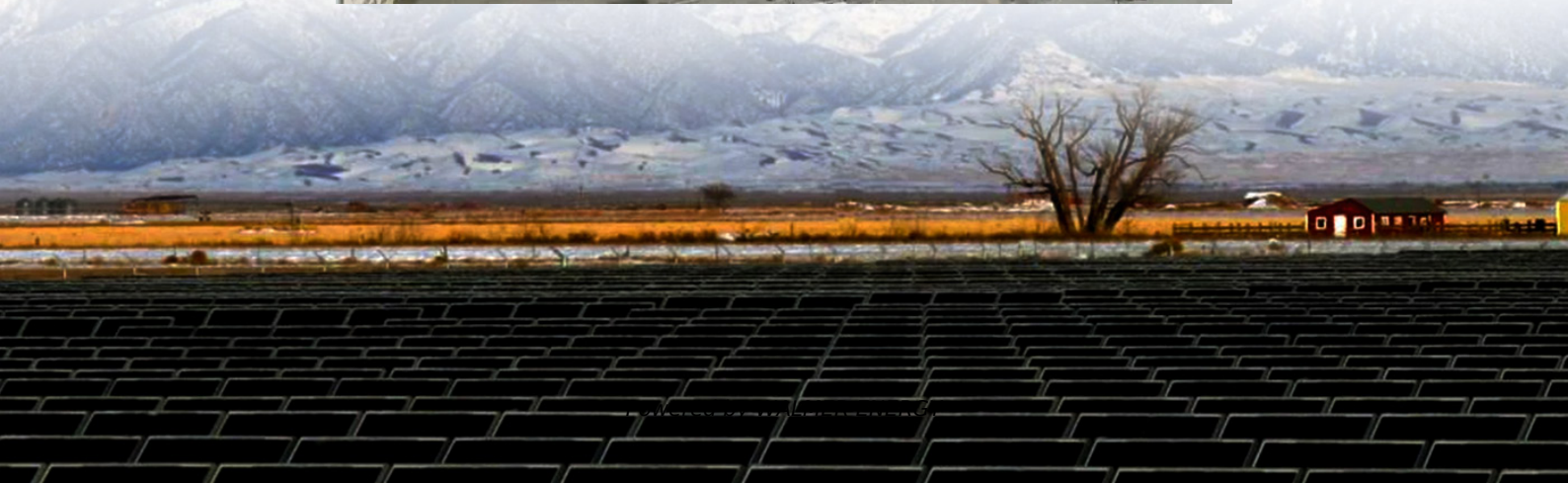


One Leaf Knows the Autumn solar Energy Storage Wind Power





Overview

Can fallen leaves be converted into a leaf-based energy harvester?

Taking advantage of the combined leaves' distinct merits and reaching the aim of developing renewable energy, herein, we propose a facile route to convert fallen leaves into a leaf-based energy harvester (LEH) by utilizing an asymmetric structure with a super-hygroscopic iron hydrogel.

Can leaf-based energy harvesters be integrated self-powered systems?

C.Y. proposed the large-scale fabrication of our leaf-based energy harvester and the possibility of using leaf-based energy harvesters for integrated self-powered systems. G.L. and P.S. helped with the mechanical properties of the leaf and energy harvester integration.

Does a leaf-based energy harvester have a self-regeneration mechanism?

H.W., C.Y., and Z.W. proposed the energy conversion mechanism of a leaf-based energy harvester and designed experiments to prove the mechanism. S.D.W. proposed the self-regeneration mechanism of the energy harvester and designed experiments to guarantee the continuous power output of the energy harvester.

Who analyzed the mechanical properties of the leaf and energy harvester integration?

G.L. and P.S. helped with the mechanical properties of the leaf and energy harvester integration. S.C.T., Z.W., S.D.W., W.C., S.G., Y.Z., L.Y., P.S., and G.L. analyzed the data. S.G. and Y.Z. wrote the initial manuscript with assistance and input from all authors. The final version was approved by all authors before submission.



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