

Alternative energy: A new way to take a bite of sunlight

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Flash those pearly whites in a dazzling smile and you showcase a natural light collector mechanism hidden inside the internal structure of dentin - the hard, bone-like material that forms the main part of teeth.

Scientists in Germany are reporting that the photonic crystal structure of dentin was their inspiration to propose a new method for harvesting sunlight to produce electricity.

Andrei P. Sommer and Michael Gente say tooth structure bears similarities to photonic crystals, which allow certain wavelengths to enter their internal structure, but block others. Applications of the effect include harvesting sunlight for photovoltaic cells.

"The light-collector mechanism in dentin could serve as a model for the design of solar concentrator arrays," the researchers write in their paper, published in the current (September/October) edition of the bimonthly ACS journal *Energy & Fuels*.

"Arrays of tooth-like structures mounted on silicon permit collection of sunlight virtually independent of the angle of incidence of the sun, which could be vital, for instance, in Antarctica."

Source: American Chemical Society

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