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Title: Italian Clam solar Container

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Why do giant clams have iridescent insides?

Giant clams' iridescent insides form a powerful system for taking in sunlight. Join Our Community of Science Lovers! I agree my information will be processed in accordance with the Scientific American and Springer Nature Limited Privacy Policy.

How do clams grow?

The clam's algae form a distinctive orderly pattern, arranged in thin columns that stretch from each iridocyte down into the flesh. "The clam basically plants them as if it were an agricultural field," Sweeney says. (The algae also travel between clams in pellets of poop.) and three times that of a tropical leaf.

Do clams eat algae?

The rest of the incoming light is absorbed, and much of it is channeled to photosynthetic algae the clams cultivate within their bodies as a food source.

Do clams inflate and deflate during the day?

In the new study, the researchers resolved this discrepancy by factoring in a quirk of clam behavior: there is evidence that clams might inflate and deflate their mantle throughout the day. This could let the clams further optimize their sunlight exposure, the scientists determined--allowing them to clock in at a modeled 67 percent efficiency.

Aug 1, 2024 · Notably, the clams' structure and adaptive behaviors work in harmony to create an efficient light-collecting system that far surpasses the capabilities of traditional solar panels. ...

Jul 3, 2024 · Giant clams can make solar energy more efficient by achieving 67% photosynthetic light-use efficiency under natural tropical light.

Nov 9, 2025 · A recent study published in the journal PRX Energy has revealed that

giant clams have crucial insights for more efficient solar energy systems. The work was done by Dr. Alison ...

Aug 1, 2024 · In the shallow tropical reefs off Palau lie what at first glimpse look like unremarkable, albeit huge, clams in the genus *Tridacna*. But a ...

Aug 1, 2024 · In the shallow tropical reefs off Palau lie what at first glimpse look like unremarkable, albeit huge, clams in the genus *Tridacna*. But a peek at the undulous innards ...

This research investigates the effect of placing clam shells in upward- and downward-facing orientations on the performance enhancement of the Traditi...

Aug 7, 2024 · The clam's photosynthetic algae are arranged in precise columns, maximizing efficiency. Sweeney's team calculated a theoretical ...

Aug 1, 2024 · Giant, Sparkly Clams Hide the Most Efficient Solar Panels ...

Aug 7, 2024 · The clam's photosynthetic algae are arranged in precise columns, maximizing efficiency. Sweeney's team calculated a theoretical efficiency of 43% for the first ...

Dec 20, 2024 · By comparison, the same algae species living in corals without the benefit of the clams' light-scattering iridocytes are no more energy efficient than our 20%-efficiency solar ...

Aug 1, 2024 · Giant, Sparkly Clams Hide the Most Efficient Solar Panels Ever Found Inside giant, iridescent clams are algal farms that could inspire highly efficient bioreactors

Jul 2, 2024 · Solar panel and biorefinery designers could learn a thing or two from iridescent giant clams living near tropical coral reefs, according to a new study. This is because giant clams ...

Jun 28, 2024 · A theoretical model for the illumination of photosynthesizing algae in giant clams suggests principles for high efficiency collection of sunlight.

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