Mesodyne lightcell Christmas Island

How does mesodyne's lightcell convert fuel into electricity?
Mesodyne's LightCell converts fuel into electricity via light. Unable to load video. Try again later. Mesodyne's patented LightCell(TM) power generator converts any fuel into electricity via light. The core of the LightCell is a nanophotonic material that is engineered to only emit certain wavelengths of light when heated.

How does a lightcell work?
The core of the LightCell is a nanophotonic material that is engineered to only emit certain wavelengths of light when heated. The back of this material is heated to incandescence by a novel microcombustor and the light emitted from the front is converted to electricity by photovoltaic cells. Key components include:

Why is mesodyne more efficient than traditional thermophotovoltaics?
Mesodyne's generator is significantly more efficient than traditional thermophotovoltaics because the light emitted by the nanophotonic material nearly perfectly matches what the PV cell can convert into electricity. Mesodyne's founders demonstrated the world record efficiency for this type of energy conversion in 2017 during their PhDs at MIT.

Who is mesodyne?
We founded Mesodyne shortly after we demonstrated the world record efficiency for thermophotovoltaic energy conversion at MIT in 2017. At our advisors' recommendation, we took entrepreneurship classes, started to conduct customer interviews, and saw real interest in the technology.

Why did mesodyne join Luminate?
From there Mesodyne participated in Chain Reaction Innovations,the WERCBench Labs Accelerator,the Air Force Techstars,the Air Force Mass Challenge,and now Luminate. When we joined Luminate,the goal was to expand our network,specifically in optics and photonics.

Who are mesodyne's co-founders?
Mesodyne's Co-Founders,Dr. Veronika Stelmakh and Dr. Walker Chan. Image courtesy of Argonne National Laboratory. We founded Mesodyne shortly after we demonstrated the world record efficiency for thermophotovoltaic energy conversion at MIT in 2017.

Dr. Walker Chan is the cofounder and CTO of Mesodyne, where he leads the team of engineers designing the LightCell"s integration into products for use across military and commercial applications. He serves on the company"s Board of Directors andis an expert in thermophotovoltaics, thermofluids, combustion systems, and high temperature ...

In the LightCell, a small microcombustor heats a photonic crystal to incandescence. This nanophotonic material is engineered to emit certain wavelengths of light preferentially when heated. The emitted light drives

...

Another company called Mesodyne is also working on the problem. Mesodyne"s LightCell. Mesodyne, another company in the solid-state engine space, has developed a similar thermophotovoltaic system [8] but with some key differences. Mesodyne"s system integrates the combustion chamber, nanophotonic emitter, and PV cell into a small chip, making ...

Mesodyne, a startup in the Luminate accelerator"s fourth cohort, is developing a new kind of generator that enables compact, ... CEO and Co-Founder, Dr. Veronika Stelmakh, talks with Luminate"s Technology Program Manager, Dr. Damon Diehl, about Mesodyne"s LightCell(TM) power generators, which convert fuel to electricity via light. ...

Mesodyne, a startup in the Luminate accelerator"s fourth cohort, is developing a new kind of generator that enables compact, ... CEO and Co-Founder, Dr. Veronika Stelmakh, talks with Luminate"s Technology Program ...

In Mesodyne"s LightCell(TM), a microcombustor heats a nanoengineered photonic crystal material to incandescence, which shines light on the photovoltaic (PV) cell, generating electricity. My co-founder, Dr. Walker ...

Mesodyne"s LightCell is completely silent, has no moving parts, operates on any fuel, and has up to 10X the energy density of lithium ion batteries. LightCell technology enables new capabilities for unmanned small systems: increased endurance over batteries, improved reliability over internal combustion, fuel flexibility over fuel cells, and ...

With more than 10x the energy density of Li-Ion batteries, the LightCell enables people, sensors, autonomous vehicles - virtually any system that requires portable power - to perform their mission beyond what is possible today and ...

In Mesodyne"s LightCell(TM), a microcombustor heats a nanoengineered photonic crystal material to incandescence, which shines light on the photovoltaic (PV) cell, generating electricity. My co-founder, Dr. Walker Chan, and I developed the technology at MIT"s Institute for Soldier Nanotechnologies with the soldier in mind. We are initially ...

He oversees company expansion and works to accelerate the delivery of the LightCell into the hands of users as well as integration into partner platforms at scale. LaBelle joined Mesodyne in July 2024 from Moelis & Company, a ...

National Defense Magazine reporter Sean Carberry spotlights Mesodyne, an MIT startup that is developing a thermal photovoltaic power generator that could be used to help extend battery power during military missions. Mesodyne"s LightCell generator can deliver "high-efficiency direct current power from a quiet

device with no moving parts that could change the ...

Mesodyne"s LightCell is a portable solution designed for defense use cases, where it can be carried by soldiers as a drone charging system that extends flight time by over 10x. Mesodyne"s innovative product is also 75% lighter than existing battery solutions, making it a viable option for consumer applications, as well.

Mesodyne"s patented LightCell is a new class of power generator that converts fuel into electricity via light. Simply put, the LightCell enables portable, efficient, quiet, reliable, long ...

Mesodyne Dr. Veronika Stelmakh is the CEO and co-founder of Mesodyne, an MIT spin out commercializing a new class of power generator that converts fuel to electricity via light. Mesodyne"s LightCell(TM) generator is silent, has no moving parts, operates on any hydrocarbon fuel, and offers up to 10x the energy density of lithium ion batteries.

With its remarkably low weight, high energy-density, and virtually no moving parts, the Mesodyne LightCell could be an ideal power solution for prolonged operations by systems in which ...

Luminate. "Mesodyne is an impres-sive contender. The company"s LightCell(TM) power generator offers a compact, long-lasting, quiet and reliable power alternative." The Rochester Business Journal is featuring profiles of the compa-nies that are helping to write the next chapter in Rochester"s histo-ry as the world"s center for optics,

Web: https://sailesindustrialmachinery.co.za