LICENSING OPPORTUNITY: SMART ENERGY CONVERTER FOR EFFICIENT POWER USE

DESCRIPTION

Problem

Traditional AC-DC converters often suffer from energy inefficiencies and heat dissipation issues. Electrical systems require stable voltage regulation, but conventional methods can lead to power fluctuations. This invention addresses these concerns by using photonic temperature control to maintain consistent energy conversion. It reduces power loss and enhances system reliability. The approach ensures efficient energy transfer without excessive heat buildup.

Invention

This invention introduces a photonic-based AC-DC equivalence converter that operates using temperature-controlled photonic chips. It leverages isothermal regions to regulate voltage and improve energy efficiency. The technology enables precise energy conversion with minimal loss. By utilizing photonic principles, it enhances power management in electrical systems. The invention is designed to optimize energy transfer and stability in various applications.

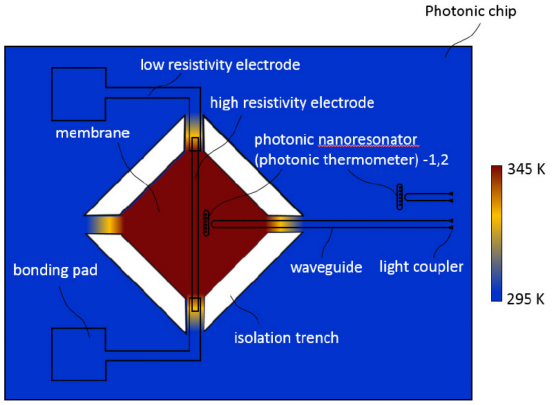
BENEFITS

Commercial Application

This technology can be applied in renewable energy systems, improving solar and wind power conversion. It has potential in electric vehicle charging stations, ensuring efficient power transfer. Data centers and high-performance computing can benefit from its energy optimization capabilities. It may also be useful in smart grids, enhancing electricity distribution. Additionally, it could improve consumer electronics, making devices more energy-efficient.

Competitive Advantage

The invention offers higher efficiency compared to traditional AC-DC converters. It minimizes energy loss, leading to cost savings in power management. The photonic approach ensures precise voltage regulation, reducing system instability. Its temperature-controlled design enhances durability and longevity. Overall, it provides a more sustainable and reliable energy conversion solution.



Schematics of photonic AC-DC converter. Color represents surface temperature of the device upon applying DC voltage to the electrode.

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