

Hollow-core optical fibers are used for particle transport

On one hand, hollow-core fibers can act as optical tweezers, picking up tiny particles with great delicacy. On the other, they can concentrate laser energy into a thread of intense power, ...

In light of the recent advances in hollow-core fiber (HCF) design and manufacturing, wide-scale deployments of this fiber type to realize next ...

Hollow Core Fibers: a Revolution for Optical Transport? Three reasons explain the renewed interest for this new HCF type: Low losses, Low latency: reduction of one third of the fiber propagation duration ...

In light of the recent advances in hollow-core fiber (HCF) design and manufacturing, wide-scale deployments of this fiber type to realize next-generation optical transport networks may ...

Our method relies on the transport of nanoparticles within a hollow-core photonic crystal fiber using an optical conveyor belt, which can be precisely positioned with respect to the...

The guiding modes of the fiber can generate sufficient optical gradient forces to balance the gravity of the particles or confine the atom clouds, forming a stable optical trap in the hollow core.

Hollow-core fiber (HCF) is a special optical waveguide type that can guide light in the air or liquid core surrounded by properly designed cladding structures.

We report on an efficient and highly controlled cold atom hollow-core fiber interface, suitable for quantum simulation, information, and sensing. The main focus of this manuscript is a ...

A comparison between solid-core silica fibers and hollow-core fibers is presented, focusing on telecom-relevant metrics. The article concludes with a summary of current challenges ...

The basic principles and key features of HCF-OT, from optical levitation to manipulation and the detection of macroscopic particles and atoms, are summarized in detail.

Once trapped, a particle was propelled into the hollow core by adjusting the beam splitter so as to increase the forward power. Subsequent particles were launched into the fiber using the same ...

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