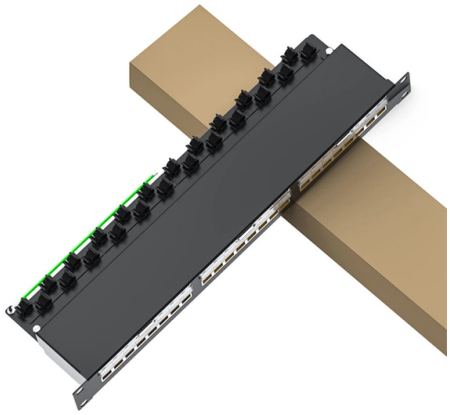
Low-loss spectrometer used in supercomputing centers



Overview

Here, we introduce a novel chip-integrated spectrometer by leveraging the acoustically-stimulated Brillouin scattering in a hybrid photonic-phononic chip.

Article Content

Compact and high-resolution spectrometer via Brillouin integrated

Here, we introduce a novel chip-integrated spectrometer by leveraging the acoustically-stimulated Brillouin scattering in a hybrid photonic-phononic chip.

Monolithic thin-film lithium niobate broadband spectrometer ...

Miniaturised optical spectrometers are attractive due to their small footprint, low weight, robustness and stability even in harsh environments such as space or industrial facilities.

Advances in cost-effective integrated spectrometers

This review paper shows the market trend for chip-scale spectrometers and analyzes the key metrics that are required to adopt miniaturized spectrometers in real-life applications.

Advances in Miniaturized Computational Spectrometers

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As one of the most promising routes to spectrometer miniaturization, computational spectrometers display many exciting advantages, including small

Advances in cost-effective integrated spectrometers

Different to other review articles summarizing the general trends on miniaturized spectrometers, this paper pays special attention to the integrated spectrometers that hold great

Electron energy loss spectroscopy

Some of the electrons will undergo inelastic scattering, which means that they lose energy and have their paths slightly and randomly deflected. The amount of

Using a multimode fiber as a high resolution, low loss spectrometer

We propose and demonstrate that a conventional multimode fiber can function as a high resolution, low loss spectrometer. The proposed spectrometer consists only of the fiber and a camera that images

Weak Source Spectrometer | Compact Spectrometer

The HyperFine series of spectrometers for low intensity sources are designed for measuring hyperfine spectra and subtle spectral shifts from scattered light or

Supercomputing

SeisSol is impressive in that it showcases the advantages of supercomputing: For this project, researchers developed the formulae and simulation programmes

High-bandwidth, low-loss optical interconnects for AI data centers

By enabling high-bandwidth, low-loss data transfer, the approach addresses key bottlenecks in AI infrastructure while improving energy efficiency and system scalability.

Quantum-centric Supercomputing for Materials Science:

Abstract Computational models are an essential tool for the design, characterization, and discovery of novel materials. Hard computational tasks in materials science stretch the limits of existing high

HLRS High Performance Computing Center Stuttgart:

Solutions and computing infrastructure As a German national high-performance computing (HPC) center affiliated with the Gauss Centre for

Using a multimode fiber as a high resolution, low loss spectrometer

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These spectrometers, however, afford only modest spectral resolution, while suffering high insertion loss and/or low signal to noise ratio (SNR). In this letter, we demonstrate that a conventional multimode

Review of Miniaturized Computational Spectrometers

Spectrometers are key instruments in diverse fields, notably in medical and biosensing applications. Recent advancements in nanophotonics

The evolution of high-performance computing: how AI

The Journal of Supercomputing - The recent study “Mapping the Landscape of Quantum Computing and High-Performance Computing Research

SuperSpec, The On-Chip Spectrometer: Improved NEP and Antenna ...

SuperSpec is a new technology for mm and sub-mm spectroscopy. It is an on-chip spectrometer being developed for multi-object, moderate-resolution ((Rsim 300)), large bandwidth

Lincoln Laboratory''s new AI supercomputer is the most

The new TX-GAIA (Green AI Accelerator) computing system at Lincoln Laboratory''s Supercomputing Center (LLSC) has been ranked as the

SPECTROSCOPY Multimode Fiber as a High-Resolution, Low-Loss Spectrometer

Spectrometers are widely used tools in chemical and biological sensing, material analysis and light source char-acterization. Traditional spectrometers use a grating/prism to disperse light. The spectral

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