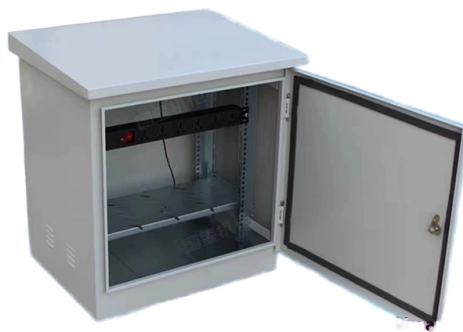


Norwegian high-speed optoelectronic connection with high temperature resistance



Overview

HySpex is a leading global brand in hyperspectral imaging, known for stable, flexible sensors with exceptional data quality. The technology stems from Norsk Elektro Optikk (NEO), Norway's largest independent electro-optics R&D company. SHARP is a research project funded under the ERA-NET ACT programme for accelerating Carbon Capture and Storage (CCS). The overall aim is to “Improve the accuracy of subsurface CO2 storage containment risk management to a level acceptable to both commercial and regulatory interests”. The hyperspectral imaging activities at NEO started in 1995. The node at the University of Oslo hosts two Transmission Electron Microscopes (TEM) that are part of the NORTEM national infrastructure. The instruments are fully equipped for structural, compositional and optoelectrical characterization of materials. We additionally have holders and systems for. The speed of data centers depends on their inter-connects, and for short-reach connectivity, optical interconnects (OIs) with VCSELs are preferred due to their high speed, compact size, and energy efficiency. Unlike their electrical counterparts, optical interconnects offer high bandwidth and negligible frequency-dependent loss, making possible. NEO develops and manufactures advanced electro-optical instruments for industrial, scientific and space-based applications. Our product portfolio includes the HySpex family of hyperspectral cameras, the CNI instrument, and space-qualified systems designed for high performance, stability and.



Article Content

High-speed optoelectronic devices

High-speed optoelectronic devices are key components of modern fiber communication systems, and the backbone of information technology. In this paper, we present our work on high-speed devices

NORTEM: The Norwegian Center for Transmission Electron

The temperature-dependent conduction and carrier injection mechanisms were studied, thus providing an effective strategy for n-MoS₂ NSs/p-BDD heterojunction high-power semiconductor

Comparison between electrical interconnection and

Optical interconnection structure principle of optoelectronic printed circuit boards
Optoelectronic printed circuit boards use high-speed optical

Optimizing Fibre-Optic Monitoring: A Case Study in the Norwegian

This versatility enabled the creation of lightweight sensors adaptable to space, power, and environmental constraints, particularly crucial for hostile environments like high-temperature borehole

Flexible transparent ITO thin film with high conductivity and high ...

It will facilitate the broader application of flexible transparent thin film electronic devices in areas requiring high-temperature resistance and low-energy consumption.

Materials for high-temperature digital electronics

Most of the aforementioned high-temperature electronic applications have been analogue in nature, but there is also a clear need for digital electronics for high-temperature environments.

An SBS-Based Optoelectronic Oscillator for High-Speed and High ...

We propose and experimentally demonstrate a high-speed and high-sensitivity temperature sensor by interrogating a low-frequency optoelectronic oscillator (OEO) based on

High-temperature flexible WSe₂ photodetectors with ultrahigh ...

Here, we report the realization of h-BN-encapsulated graphite/WSe₂ photodetectors which can endure temperatures up to 700 °C in air (1000 °C in vacuum) and exhibit unconventional

Rationale and Challenges for Optical Interconnects to Electronic Chips

Invited Paper The various arguments for introducing optical interconnections to silicon CMOS chips are summarized, and the challenges for optical, optoelectronic, and integration technologies are

About Us | HySpex

HySpex is a leading global brand in hyperspectral imaging, known for stable, flexible sensors with exceptional data quality. The technology stems from Norsk Elektro

Review of Devices, Packaging, and Materials for Cryogenic ...

Superconducting devices, cooled to very low temperatures, typically below 10 K, have unique properties and may outperform semiconductor devices in terms of speed, sensitivity, and

An Optoelectronic Oscillator for High Sensitivity Temperature Sensing

High sensitivity temperature sensing with a sensitivity of 3.7 MHz/°C is experimentally demonstrated. Index Terms—Fiber optics sensor, Mach-Zehnder fiber interferometer, microwave photonics,

High-speed Optical Interconnects in harsh environments

This work aims to enhance vertical-cavity surface-emitting laser (VCSEL)-based optical interconnects for high-speed and energy efficient operation with real-time, random data and over a wide temperature

Effects of Bonding Materials on Optical-Thermal

In this paper, the optical-thermal performances and high-temperature reliability of LED with these bonding materials have systematically compared and studied.

High-temperature optoelectronic synaptic devices based on 4H-SiC

Optoelectronic synaptic devices operating at high temperatures have application potential across many important fields, including the aerospace and defense industries. However,

Review of Devices, Packaging, and Materials for

In recent years, the packaging technologies of advanced optoelectronics devices and systems have evolved rapidly to meet the fast

High-speed optoelectronic devices

Introduction High-speed optoelectronic devices are key components of modern network communication systems and the backbone of information technology. In a fiber optical transmission link, a transmitter

High-Speed Photonics Interconnects

Featuring contributions by experts from academia and industry, the book brings together in one volume cutting-edge research on various aspects of high-speed photonics interconnects.

High-temperature optoelectronic transport behavior of n-MoS

In this work, n-MoS₂ NSs/p-type boron-doped diamond (BDD) film heterojunction was fabricated by sol-gel method to investigate the temperature dependence of the optoelectronic

High-speed optoelectronic devices

In this paper, we present our work on high-speed optoelectronic devices, including high-performance distributed feedback (DFB) semiconductor lasers and integrated light sources, wideband electro

Pt thin-film resistance thermo detectors with stable ...

In this study, we fabricate platinum (Pt) thin-film resistance temperature detectors (RTDs) on a SiC substrate by incorporating aluminum oxide (Al₂O₃) as the transition layer and utilizing...

Special Issue on Advanced Ultra-High Speed Optoelectronic Devices

In this Special Issue, we highlight recent progress in the application of ultra-high speed optical transmitters, photoreceivers, optical modulators, and integrated optoelectronics devices to

Products

Our product portfolio includes the HySpex family of hyperspectral cameras, the CNI instrument, and space-qualified systems designed for high performance, stability and precision.

Sintering for High Power Optoelectronic Devices

Residual-free eutectic Au₈₀Sn₂₀ soldering is still the dominant assembly technology for optoelectronic devices such as high-power lasers,

Materials for ultra-efficient, high-speed optoelectronics

High-speed optoelectronics is central to many important developments in the communication, computing, sensing, imaging, and autonomous vehicle industries. With a sharp rise

High temperature resistance and wide-spectrum detection flexible ...

Abstract High temperature resistance and broadband detection are crucial in the application of flexible photodetectors, and it is still challenging to achieve high quality performance

Thermal stability and high speed for optoelectronic hybrid phase

In this case, the combination of laser recording and resistance readout, namely, optoelectronic hybrid phase-change memory (OEH-PCM), is a more promising solution to implement

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