February 24, 2025

Fiber Optic Sensing Association
Connect and Protect

THE MONITOR

News from the Fiber Optic Sensing Association

BECOME A MEMBER

ABOUT FOSA

RESOURCES

SUBSCRIBE TO FOSA NEWSLETTER

DFOS Glossary

ASSOCIATION & MEMBER NEWS | INDUSTRY NEWS | EVENTS

ASSOCIATION & MEMBER NEWS

FOSA 2025 Mid-year Member Meeting June 3 & 4

at the University of California, Berkeley USA
Online registration will open in April and close on May 9

FOSA is delighted to announce its 2025 Mid-Year Meeting will be hosted by Dr. Kenichi Soga at the University of California, Berkeley. An all-day in-person meeting will be held on June 3rd concluding with dinner in the evening. A half-day demo tour will be held at Richmond Field Station on June 4. Confirmed speakers from: **Lawrence Berkeley National Laboratory's (LBNL), Caltrans, East Bay Utility District's (EBMUD), Pacific Gas & Electric (PG&E), Stanford University and The University of Washington.**

MEMBER NEWS

AP Sensing

Protecting Critical Infrastructure: How Fiber Optic Sensing Detects Threats in Real Time
AP Sensing News February 11, 2025
In today's volatile geopolitical climate, safeguarding critical infrastructure has become more crucial than ever. Recent incidents, such as the suspected sabotage of undersea cables in the Baltic Sea, have highlighted the vulnerabilities in our essential communication and energy networks. AP Sensing's Distributed Fiber Optic Sensing (DFOS) solutions offer a proactive defense against such threats. Our technology enables real-time detection, localization, and identification of third-party intrusions on pipelines, power cables, and telecommunication infrastructure….The data collected can also play a pivotal role in investigating acts of sabotage, ensuring that malicious activities are thoroughly examined and addressed.

FEBUS Optics

FEBUS Optics was at Perimeter Protection 2025 – Nuremberg, showcasing its innovative FOGuard solution….advanced technology, based on DAS (Distributed Acoustic Sensing)…cutting-edge intrusion detection and perimeter security.

Indeximate

Indeximate secures funding from Propeller Ventures
Windtech International January 27, 2025
Indeximate has completed its first round of funding with a Seed investment from Boston-based Propeller Ventures….funding will support key initiatives…advancing the delivery of the Scattersphere to customers….accelerate the company's transition towards offering "Sensing as a Service," a model that aims to leverage fibre sensing technology across various applications. Founded in 2022 by fibre sensing experts, Indeximate focuses on preventing failures in subsea power cables by using fibre optic sensing to monitor the health of cables and their environment. This enables preventative maintenance, reducing risks and improving reliability.

Sintela

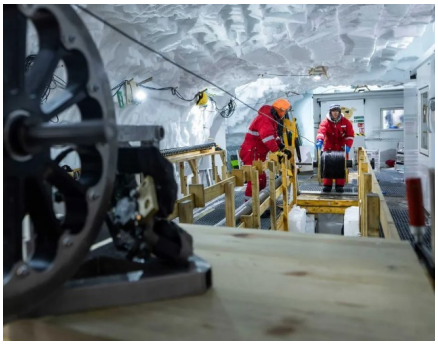
Kaynes Technology acquires 54% of Sensonic – Sintela's rail focused joint venture
Sintela News January 2, 2025
Kaynes' investment and support will accelerate Sensonic's delivery of fiber sensing powered solutions that will improve operational performance and reduce costs for rail customers….Sintela has maintained its shareholding and continues to support Sensonic with the continued development and supply of underlying fiber sensing technology, delivering the Optical Sensing Units and Operating System Software with Sensonic delivering rail specific Industry Application Software and Service.

Graz University of Technology, Institute of Engineering Geodesy and Measurement Systems

3 New PhD Positions at IGMS
TU Graz News January 9, 2025
We are expanding our team and are offering 3 new PhD Positions

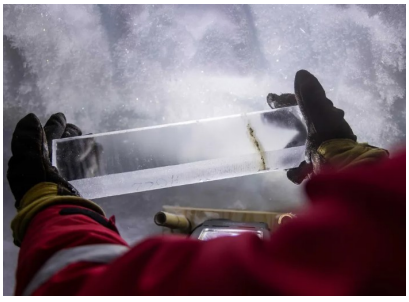
13th International Conference on Structural Health Monitoring of Intelligent Infrastructure
Hosted at TU Graz September 1-5, 2025
The Society for Civil Structural Health Monitoring (SCSHM, formerly ISHMII) and Graz University of Technology are pleased to announce that the 13th International Conference on Structural Health Monitoring of Intelligent Infrastructure. SHMII-13 will be held in Graz, Austria, from September 1 to 5, 2025.

Fiber Optic Sensing (FOS) News



Tiny Quakes Discovered Deep Within Greenland's Ice Sheet Could Change Sea-Level Rise Predictions, Study Suggests
Smithsonian February 18, 2025
While scientists once thought Greenland's ice streams flowed slowly and uniformly, new research reveals a quake-driven "stick-slip" motion that's linked to volcanic activity….**lead author Andreas Fichtner, [a speaker at FOSA's 2024 mid-year member meeting at TU Graz]** a seismologist at ETH Zürich in Switzerland

Hidden cascades of seismic ice stream deformation
Science February 6, 2024
How ice streams flow…is incompletely known, making it difficult to project sea level and ice sheet size change as accurately as desired. Using measurements made with fiber-optic cables, **Fichtner**….observations of brittle deformation in the Greenland Ice Sheet that reveal a nonviscous flow mechanism caused by englacial ice quake cascades.



In Greenland, the Ice Doesn't Just Flow, It Quivers and Quakes
Story in the New York Times February 6, 2025
By using a fiber-optic cable to detect tiny vibrations a mile below the surface, scientists discovered a surprising way that ice sheets move.

Infrastructure

State Grid Xuzhou Power Supply Company Installs Distributed Optical Fiber Temperature Sensing Early Warning System in Substations

PR Newswire on yahoo!finance January 25, 2025
distributed optical fiber temperature sensing early warning system at the 500kV Renzhuang substation....all five 500kV substations in Xuzhou have been equipped with this advanced early warning system...ensuring the safe and stable operation of the power grid.

Hyper-Scan Fiber-Sensing: A Revolution in Infrastructure Monitoring

Prisma Photonics webinar/recording on Amelia's Weekly Fish Fry EE Journal podcast January 31, 2025

Perimeter

Acoustic-to-hyper-spectral: real-time perimeter intrusion detection system monitoring through learnable filters and hyper-spectral image generation from distributed acoustic sensing systems

Vol. 33, No. 3 / 10 Feb 2025 / Optics Express 4109
an integrated distributed acoustic sensing (DAS) system with artificial intelligence to provide real-time system monitoring for fence perimeter and buried system applications. The DAS system is a Rayleigh backscatter based fibre optic sensing system that has been deployed in two real-world, commercial applications to detect acoustic wave propagation and scattering along perimeter lines, and classify intrusions accurately.

Pipelines

USDOT Proposes New Rule to Strengthen Safety Requirements for Carbon Dioxide Pipelines

US Department of Transportation January 15, 2025
new standards for transporting carbon dioxide in a gaseous state via pipeline.

Seismic

Global internet grid could better detect earthquakes with new algorithm

phys org February 3, 2025
Early detection of earthquakes could be vastly improved by tapping into the world's internet network with a groundbreaking new algorithm, researchers say. Fiber optic cables used for cable television, telephone systems and the global web matrix now have the potential to help measure seismic rumblings thanks to recent technological advances

Subsea

EU Backs Project to protect marine ecosystems from underwater noise pollution from ships

January 30, 2025
Through the new LOWNOISER project, Maritime CleanTech and partners will tackle the often-overlooked problem of underwater noise pollution caused by maritime traffic. Underwater noise pollution from shipping poses significant threats to marine ecosystems, disrupting essential marine species' behaviors, such as communication, navigation, and reproduction. With €6,3 million in funding from the European Union, the 15 project partners….four-year project….Distributed Acoustic Sensing (DAS): this innovative method uses fiber-optic cables to monitor underwater noise in busy maritime areas without disturbing the marine environment.

Subsea cable break could interrupt, slow Arctic communications for months, company says

The Arctic Sounder January 21, 2025
repairs may not be possible until late summer, and the company president said in a

release that it is exploring a work-around via an overland cable.

Wind

China built out record amount of wind and solar power in 2024
AP January 28, 2025
China raced ahead building renewable energy last year, installing more wind and solar power than ever before and continuing to leave all other countries in the dust. The nation put up 357 gigawatts of solar and wind, a 45% and 18% increase….akin to building 357 full-size nuclear plants in one year.

Trump signs executive order pausing wind turbine leases, could impact Midwest
USA Today January 21, 2025
temporarily halts offshore wind energy lease sales in federal waters and pauses approvals, permits and loans for both offshore and onshore wind.

PREVIOUS FOSA WEBINARS

Distributed Fiber Optic Sensing Use Cases and Benefits for Electric Utilities Enhancing Grid Reliability, Resilience & Security - FOSA Technology Outreach Committee

What's the Killer App for Large-Scale Fiber Sensing Deployments? - FOSA Technology Outreach Committee

Find more FOSA webinar topics with on-demand viewing:

YouTube.com/c/FiberOpticSensingAssociation

INDUSTRY RELATED NEWS

Fiber Optic Seismology
This web tool is a product of the Fiber Optic Sensing working group of the John Wesley Powell Center.

Fiber Optic Seismology Experiment Interactive Map
USGS December 18, 2024
The USGS Fiber Optic Seismology interactive map provides access to metadata from Distributed Acoustic Sensing (DAS) experiments designed by research groups across the globe to monitor seismic activity and subsurface properties along fault zones. DAS technology uses fiber-optic cables to detect ground vibrations, capturing high-resolution seismic data spanning long distances with dense spatial sampling. This interactive map helps researchers identify available datasets and provides information on DAS experiment parameters under a standard format including cable locations, principal investigator, sampling intervals in space and time, and data acquisition dates.

In addition to showing the surface location of the fiber optic for each DAS experiment, the interactive map allows users to overlay map layers showing recent nearby earthquakes, major fault lines, and tectonic boundaries, providing context for interpreting DAS data.

Industry related geoscience

Ice quakes discovered kilometres inside Greenland ice stream

Cosmos February 10, 2025

A previously unknown phenomenon discovered deep inside the ice streaming from the Greenland ice sheet will change the way scientists model ice melt and rising sea levels…..drilling an almost 3km borehole in the Northeast Greenland Ice Stream and lowering a fibre-optic cable 1.5km down to detect seismic data using distributed acoustic sensing (DAS)….“We were astonished by this previously unknown relationship between the dynamics of an ice stream and volcanic eruptions,” says Professor Andreas Fichtner of ETH Zurich in Switzerland, lead author of the paper. **Fichtner was a speaker at the 2024 FOSA mid-year meeting held at TU Graz**

Hrvatski Telekom Turns Fiber Network into Seismic Wave Detector

The Fast Mode February 2025

strategic City Changer project…Hrvatski Telekom, in collaboration with Dubrovnik-Neretva County and the Faculty of Science in Zagreb, deployed a distributed acoustic sensing (DAS) instrument along a 17-kilometer fiber optic route from Gruda to Vitaljina.

How telecommunications cables can image the ground beneath us

phys org February 4, 2025

used the MIT fiber optic cable network to successfully image the ground underneath campus using a method known as distributed acoustic sensing (DAS). By using existing infrastructure, DAS can be an efficient and effective way to understand ground composition

Predicting future earthquakes through fibre-optics

Open Access Government February 4, 2025

Researchers used Distributed Acoustic Sensing (DAS), a technology that allows fibre optic cables to monitor vibrations and sound waves along their length….good fit for creating a global seismic monitoring network.

Industry related rail

SmartRail: A System for the Continuous Monitoring of the Track Geometry Based on Embedded Arrays of Fiber Optic Sensors

IEEE Transactions on Intelligent Transportation Systems January 27, 2025

The effect of spatial sampling on the detection of even short-wave defects is addressed through simulations….proposed technology seems very promising for the next generation of monitoring systems

Industry related misc.

Photonics project from DARPA seeks to break quantum-noise limit

Military Embedded Systems February 7, 2025

The U.S. Defense Advanced Research Projects Agency (DARPA) launched what it named the Intensity-Squeezed Photonic Integration for Revolutionary Detectors (INSPIRED) program that has as its goal to develop compact, cost-effective optical detectors that can operate at unprecedented sensitivities….unlocking new possibilities in fields such as sensing

Scientists achieve breakthrough in high-resolution distributed temperature sensing using plastic optical fibers

EurekAlert! February 5, 2025

enhance the spatial resolution of distributed temperature sensing….successful detection of temperature changes over short distances, achieving a theoretical spatial resolution of approximately 4.8 centimeters.

11 Baltic cables damaged in 15 months, pushing NATO to boost security

Defense News January 28, 2025

NATO alliance is ratcheting up its guard against suspected attempts to sabotage underwater energy and data cables and pipelines that crisscross the Baltic, prompted by a

growing catalogue of incidents that have damaged them….More than 807,800 miles of fiber optic cables span the world's oceans and seas

Update: North Slope & Northwest internet outage will not be fixed until late summer, Quintillion president says
Fairbanks KTVF on msn January 2025
winter conditions, including sea ice and darkness, have made it impossible to pinpoint the exact location and damage a sub-sea fiber optic cable line sustained.

Join FOSA - the voice of fiber optic sensing
Raising awareness and driving adoption
Membership information

FOSA MEMBER COMPANIES

AP SENSING advanced photonic

Berkeley UNIVERSITY OF CALIFORNIA

CORNING

dura-line An Orbia business.

EOSS

FEBUS optics

GoFoton

TU Graz Graz University of Technology

hifi

IndianOil

LUNA

NetworkIntegrity SYSTEMS We Bring Security To Light™

NOVACOMM Connecting the Globe

OZ Optics LIMITED

Fiber Optic Sensing Association
600 Highway 169 South
Suite 1101

St. Louis Park, MN 55426

Visit our Website

Email Preferences/Unsubscribe

Connect with us: