

Profile

Non Profitable Organization

Photonic Sensing Consortium for Safety and Security



Our Vision and Mission

- Our mission is to protect safety and comfort in our social life to place appropriate measures prior to disaster occurrence, since natural disaster and utilities damage have risks to momentarily deprive our life and important assets.
- We implement <u>the following three activities</u> by employing advanced technology in terms of fiber optic sensing technologies and contribute to the society by developing regional safety and information society and promoting science and technology.
 - 1. Standardizing fiber optic sensing technology for safety and security and their promotion and education
 - 2. Research and development and their publicity
 - 3. Promotion of experts and engineers



Organization





Committee -1

> Promotion business committee

- Consortium communication and promotional activities
- Planning and implementation of exhibition, networking meeting, symposium, and seminars

> Project business committee

- Responsiveness to Project inquiries
- Managing deployment schedule and budgetary expenses of contracted projects
- Co-working with standard committee





Committee -2

Standardization committee

- Standardizing optical fiber sensing technologies for safety and security
- Engineers education of optical fiber sensing technologies for safety and security including certification
- Various research activity

Secretariat office

- Establishing annual business activity plan
- Administrating and Financing



Sensor body is made with glass substance.

 It endures lightening and electrical noises and contains no electrical parts and then such sensor system can be realized with higher reliability of extremely lower failure rate and much longer operation time.



- Passive sensor body does not need electrical power supply and then it is ecological system enabling lower running cost.
- It enables to deploy under hazardous environment like higher temperature.



Reduction of total initial deployment cost

- It is possible to reduce total initial deployment cost without information communication apparatus, since such information detected by optical fiber sensor could be directly transmitted via optical fiber.
- It enables to collect information with lower number of signal lines, even if multiple sensors are deployed. (in case of water flood detection sensor)







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Lower Failure Rate Enables to Reduce Running Cost

- Are you concerned with failure rate of sensor system?
- Optical fiber sensor enables to deploy sensing system with one hundredth (1/100) failure rate comparing to that of electrical sensor system.
- In case of water flood detection sensor, it enables to reduce running cost regarding administration, maintenance, and repairs.







Social Infrastructure





Public Transportation System









Plant Facilities







Disaster Prevention





Other Application with Various Sensors







Public Facilities



- Monitoring status of roads, railway related facilities, and public buildings.
- It immediately responds, when the detected emergency is automatically reported to center.







Natural Disaster

 Earthquake and torrential rain are unexpectedly occurred. It enables to prevent becoming large event by detecting natural disaster symptom as sooner and smaller as possible.



Detecting rocks fall





Detecting mud flow



Plant and Building Facilities Monitoring



 Monitoring specific field at power generation, petroleum, and various plant facilities and further detecting invaders and facility degradation and breakage status.







History and Activities

- <u>2004 June</u>, Established prior organization by 6 members (fiber optic disaster prevention system promoting consortium)
- <u>2005 Oct.</u>, 1st symposium at Nakano Sun-Plaza , Tokyo
- <u>2008 Aug.</u>, Started basic examination for development of optical disaster prevention sensor commissioned from JR East Research and Development Center - Disaster Prevention Research Laboratory
- 2009 Feb., Qualified as non profit organization (NPO) by government
- 2009 Oct., 1st NPO symposium at The University of Tokyo, Tokyo
- <u>2011</u> Started the safety monitoring research of Myoko Bridge in Hokuriku Regional Development Bureau
- <u>2012.Apr.</u>, "Introduction to optical fiber sensor" was published





- <u>2014</u> "R&D of Monitoring System Including a Detection of River Levee Deformation" was adopted as SIP (Cross-ministerial Strategic Innovation Promotion Program)
- <u>2014.July</u>, Special feature "Optical fiber sensor expected to be applied to disaster prevention" was published in the OPTRONICS magazine





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Photonic Sensing Consortium for Safety and Security



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Member List



