

PHOTONIC SENSING CONSORTIUM

for
Safety and Security



Photonic Sensing Consortium
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Photonic Sensing Consortium for Safety and Security

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 the following three activities 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

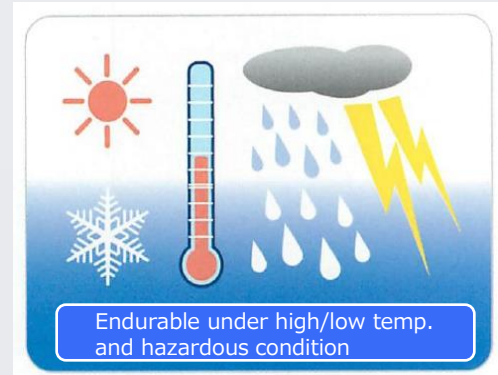
Application areas



- | | | |
|-------------------|---|------------------------------------|
| 1. Dam | 7. Flood gate | 13. River |
| 2. Railway tunnel | 8. Falling rock, cliff collapse, slopes | 14. Underground traffic facilities |
| 3. Road Tunnel | 9. Renewable energy facilities | 15. Underground shopping center |
| 4. Bridge | 10. Plant facilities | 16. Large public facilities |
| 5. Railway | 11. House | 17. Earthquake sensor |
| 6. Road | 12. Water Supply facilities | |

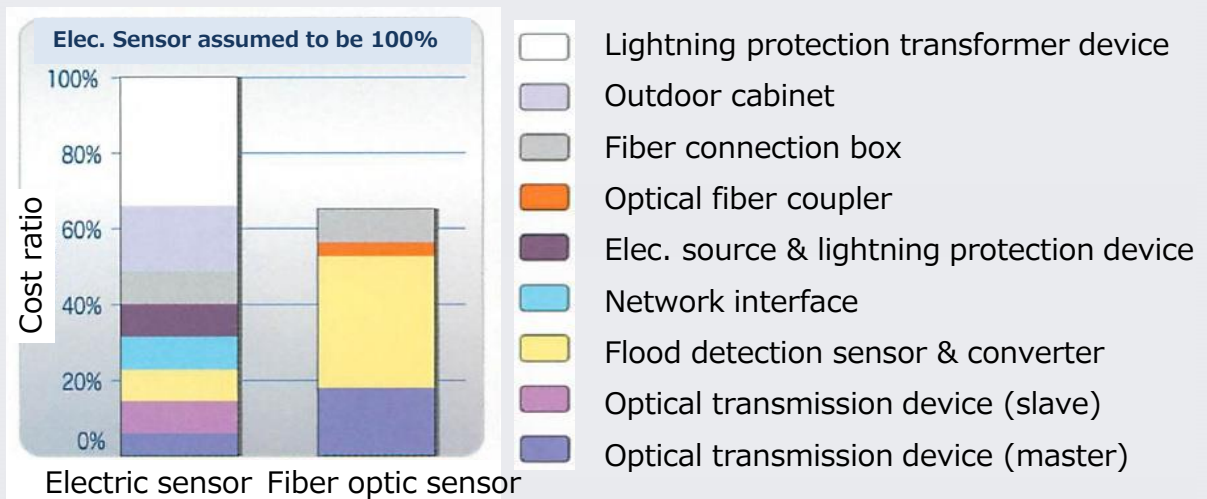
Sensor body is made with glass.

- 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.



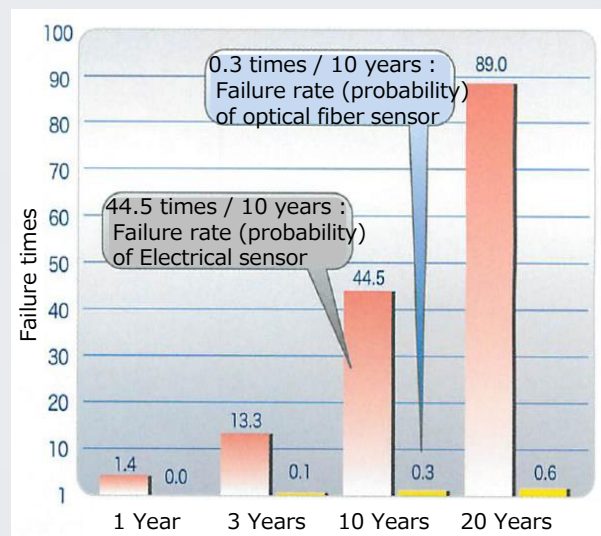
Reduction of total initial deployment cost

- 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)



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.



Member List

UBE EXSYMO CO., LTD. (FRP)

Seiko Epson Corporation (MEMS)

ASANO TAISEIKISO ENGINEERING Co.,Ltd. (Civil & Construction)

ORIENT BRAINS Co., Ltd. (Plant)

KSK corporation (Civil & Construction)

Kozo Keikaku Engineering Inc. (Civil & Construction)

Kyowa Electronic Instruments Co., Ltd. (FBG) (Civil & Construction, Plant)

Shizuoka Oki Electric Co., Ltd. (Hydrophone) (Ocean)

TOBISHIMA CORPORATION (FBG) (Civil & Construction)

Nagano Keiki Co., Ltd. (FBG) (Civil & Construction, Railway, Plant)

WATANABE .Co., Ltd (FBG/BOF)

MAEDAKOSEN CO., LTD. (Civil)

LAZOC Inc. (AE/FBG/OFDR) (Civil & Construction, Plant)

Furukawa Electric Co., Ltd. (Optical Fiber) (Weather, Water level etc.) (Civil, Railway, Plant, Infrastructure)

Neubrex Co., Ltd. (Optical Fiber) (BOTDA/BOTDR/DAS/TW-COTDR) (Civil & Construction, Plant)

Yokokawa Electric corporation (DTS) (Plant)

Oki Electric Industry Co., Ltd. (BOTDR) (Civil & Construction, Plant)

HBM (FBG)

Shinkawa Electric Co., Ltd. (Plant)

REIC

(Earthquake / disaster prevention information)

History

2004 June, Established prior organization named "Fiber optic disaster prevention system promoting consortium".

2009 Feb., Qualified as non profit organization (NPO) by government.

Activities

2005 Oct., 1st symposium at Nakano Sun-Plaza , Tokyo

2008 Aug., Started basic examination for development of optical disaster prevention sensor commissioned from JR East Research and Development Center - Disaster Prevention Research Laboratory

2009 Oct., 1st NPO symposium at The University of Tokyo, Tokyo

2011, Started the safety monitoring research of Myoko Bridge in Hokuriku Regional Development Bureau.

2012.Apr., "Introduction to optical fiber sensor" was published.

2014, "R&D of Monitoring System Including a Detection of River Levee Deformation " was adopted as SIP (Cross-ministerial Strategic Innovation Promotion Program).

2014.July , Special feature "Optical fiber sensor expected to be applied to disaster prevention" was published in the OPTRONICS magazine.



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Marutaka Building 3rd fl, 6-16-12 Ginza,
Chuo-ku, Tokyo, Japan 104-0061

Secretariat

Phone: +81-3-6869-5738

E-mail : info@phosc.jp

Facsimile: +81-3-6278-7420

URL : http://phosc.jp

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