Th2B-1 **10:15-10:30**

Practical Optical Time Domain Reflectometry for Hollow-core Fibers

Keita Takahata, Takeshi Takagi, Kazunori Mukasa
Lightera Japan Co., Ltd.

We demonstrated OTDR measurement of HCFs by controlling return loss. Reasonable transmission and coupling loss evaluation were possible for PBGF, whereas ARF required optimizing return loss and SMF-ARF coupling loss for reliable characterization.

Th2B-2 **Invited** **10:30-11:00**

Radiation Effects and Hardening Strategies in Fiber Optic Sensors

Wookjin Jeong[1], Jong-Yeol Kim[1], Gukbeen Ryu[1], Young-Gwan Hwang[1], Daeseung Moon[2], Young-Woong Kim[1]
[1]Korea Atomic Energy Research Institute, [2]Taihan Fiberoptics Co., Ltd.

Radiation-induced attenuation (RIA) significantly degrades the performance of fiber-optic sensing systems operating in radiation environments. This invited paper discusses hardening strategies, including radiation-hardened fibers, photobleaching, and reference-assisted compensation, to mitigate sensing errors and improve measurement reliability.

Th2B-3 **11:00-11:15**

Ultra-sensitive Fiber Tip Refractive Index Sensor Based on Bound States in the Continuum

Yujian Li[1], Pin Xu[1], Zhi Cheng[1], Ping Lu[2], Changyuan Yu[1]
[1]Hong Kong Polytechnic University, [2]Huazhong University of Science and Technology

An ultra-sensitive fiber refractive index sensor was demonstrated by leveraging bound states in the continuum. The designed meta-surface supports sharp Fano resonances, achieving a simulated sensitivity of 751.43 nm/RIU with a compact and cost-effective probe configuration.