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Dr. Eng, M. IEEE, M. OSA,

EXPERTISE

- Brillouin scattering-based fiber optic sensor
- Optical pulse coding technique in sensor

RESEARCH

- Brillouin scattering-based distributed sensing technique
- FBG sensor
- Optical modulation

PROFESSIONAL AFFILIATIONS

- IEEE (Member)
- OSA (Member)
- BEM (Member)

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BRIEF RESEARCH/COMMUNITY/CONSULTATION SNAPSHOT

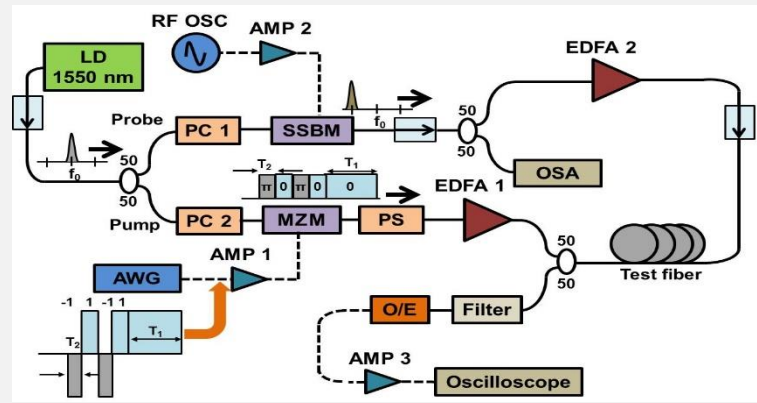


Fig. 1. Brillouin scattering-based fiber sensor setup (BOTDA)

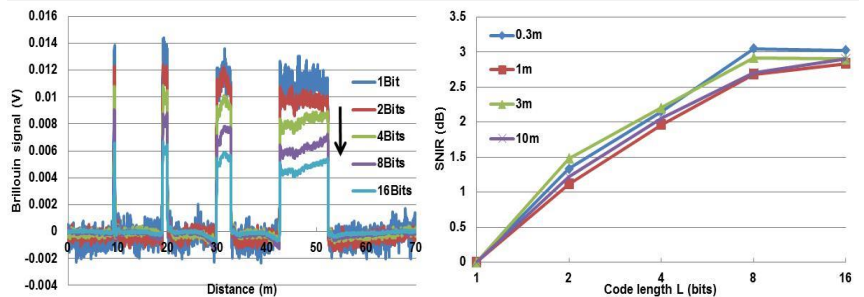


Fig. 2. Examples of measured Brillouin signals and the improvement of optical SNR contributed by pulse coding technique.

SELECTED PUBLICATIONS

- 1) Abu Samak, M.M.E., Bakar, A.A.A., Kashif, M., Zan, M.S.D., "Comprehensive numerical analysis of finite difference time domain methods for improving optical waveguide sensor accuracy", *Sensors (Basel)*, Vol 16 (506), Issue 4, 9 April 2016.
- 2) Nur Hasiba Kamaruddin, Ahmad Ashrif A. Bakar, Mohd Hanif Yaacob, Mohd Adzir Mahdi, Mohd Saiful Dzulkefly Zan, Sahbudin Shaari, "Enhancement of Chitosan-Graphene Oxide SPR Sensor with a Multi-metallic Layers of Au-Ag-Au Nanostructure for Lead (II) Ion Detection", *Appl. Surf. Science*, 361, Nov. 2015.
- 3) Mohd Saiful Dzulkefly Bin Zan, Tatsuya Tsumuraya and Tsuneo Horiguchi, "The use of Walsh code in modulating the pump light of high spatial resolution phase-shift-pulse Brillouin optical time domain analysis with non-return-to-zero pulses" *IoP Journal of Measurement Science and Technology*, vol. 24, no. 9, (094025), pp. 1-13, Jul. 2013.
- 4) Mohd Saiful Dzulkefly Zan and Tsuneo Horiguchi, "A Dual Golay Complementary Pair of Sequences for Improving the Performance of Phase-Shift Pulse BOTDA Fiber Sensor", *IEEE Journal of Lightwave Technology*, Vol. 30, Issue 21, pp. 3338-3356 Nov. 2012.
- 5) Takashi Sasaki, Tsuneo Horiguchi, Mohd Saiful Dzulkefly Zan and Daisuke Uchiyama, "Coded Pulse Interval Dependence of the Characteristic in Discretely Coded PSP-BOTDA (in Japanese)", *IEICE Transaction on Communication*, vol. J94-B, no. 11, pp.1481-1489, Nov. 2011.
- 6) Mohd Saiful Dzulkefly Zan, Isamu Kato, Mohammad Syuhaimi Ab-Rahman and Seri Mastura Mustaza, 2008. "Characterization of a-Si:H/SiN multilayer waveguide polarization by using optical pumping application". *Journal of Zhejiang University, Science A*, 10(10), 1421-1427, 2009.