

Fiber Lasers and Glass Photonics: Materials through Applications, edited by Stefano Taccheo, Jacob I. Mackenzie, Maurizio Ferrari, Proc. of SPIE Vol. 10683 106832E · © 2018 SPIE · CCC code: 0277-786X/18/\$18 · doi: 10.1117/12.2306677



\_

\_

Proc. of SPIE Vol. 10683 106832E-2











(wide photosensitivity spectral range, speeds up to 100MBd) with Plastic Direct Fiber Connector housing for efficient coupling.

## Acknowledgement

This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS/CCCDIUEFISCDI, project number PN-III-P2-2.1-PED-2016-0172, within PNCDI III. We thanks also to MPNS COST Action MP1401 "Advanced fibre laser and coherent source as tools for society, manufacturing and lifescience" for scientific support.

## REFERENCES

- [1] Laguesse, M. F., "Optical potentiometer using fluorescent optical fiber for position measurement," Applied Optics 28(23), 5144-5148 (1989).
- [2] Aiestaran, P., Dominguez, V., Arrue, J., Zubia, J., "A fluorescent linear optical fiber position sensor," Optical Materials 31(7), 1101-1104 (2009).
- [3] Egalon, C. O., "Multipoint side illuminated absorption based optical fiber sensor for relative humidity," Proc. SPIE 8847, (2013).
- [4] Weiss, J. D., "A Fluorescent Long-Line Fiber-Optic Position Sensor," Sensors Online, (2005).
- [5] Wu, J. L., Wang, Y. T., "A Fluorescence Optic-Fiber Temperature Sensor Using Phase-Locked Detection with Pulse Modulation Single Reference," Journal of Physics: Conference Series, 48, 101–105 (2006).
- [6] P. Miluski, D. Dorosz, J. Żmojda, M. Kochanowicz, J. Dorosz, Luminescent polymer optical fibre sensor for temperature measurement, Acta Physica Polonica A, vol. 127 (2015).
- [7] Z. Papandreou, B.D. Leverington, G.J. Lolos, Spectral response of scintillating fibers, In Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, Volume 596, Issue 3, 2008, Pages 338-346, ISSN 0168-9002,
- [8] Guido Drexlin, Veit Eberhard, Dirk Hunkel, B. Zeitnitz, Spectral attenuation length of scintillating fibers, In Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, Volume 360, Issues 1–2, 1995, Pages 245-247, ISSN 0168-9002
- [9] Industrial Fiber Optics, fiber codes 81 0087, 81 0082, 81 00874, <u>http://i-fiberoptics.com/fluorescent-fiber.php</u> (access March 2018)
- [10] Cheng-Chung Lee, The current trends in Optics and Photonics, Chapter 5, Springer, 2015, ISSN 1437-0859
- [11] C. Thiel and R. König, "Media oriented systems transport (MOST) standard for multi-media networking in vehicle environment," in *Proc. VDI Berichte*, 1998, vol. 1415, pp. 819–834.
- [12] T. Kibler, S. Poferl, G. Böck, H.-P. Huber, and E. Zeeb, "Optical data buses for automotive applications," J. Lightw. Technol., vol. 22, no. 9, pp. 2184–2199, Sep. 2004.
- [13] Hans Poisel, Karl Klein, Vladimir Levin, Fluorescent Optical Fibers for Data Transmission, In Optical Polymers, ACS Symposium Series, American Chemical Society, Washington, DC, 2001
- [14] Avago SFH250 datasheet, <u>http://web.mit.edu/6.101/www/reference/AV02\_fiber\_receiver.pdf</u> (accessed in 26 March 2018)
- [15] Volodymyr Borshch, Sergij V. Shiyanovskii, and Oleg D. Lavrentovich, Nanosecond Electro-Optic Switching of a Liquid Crystal, PHYSICAL REVIEW LETTERS, PRL 111, 107802 (2013), DOI 10.1103/PhysRevLett.111.107802
- [16] Adafruit, Large Liquid Crystal Light Valve Controllable Shutter Glass, link: https://www.adafruit.com/product/3330 (accessed in 26 March 2018)

## **PROCEEDINGS OF SPIE**

SPIEDigitalLibrary.org/conference-proceedings-of-spie

## Optical data transmission with plastic scintillating fibers

Ramona Galatus, Paul Farago, Juan Vallés

Ramona Galatus, Paul Farago, Juan Vallés, "Optical data transmission with plastic scintillating fibers," Proc. SPIE 10683, Fiber Lasers and Glass Photonics: Materials through Applications, 106832E (17 May 2018); doi: 10.1117/12.2306677



Event: SPIE Photonics Europe, 2018, Strasbourg, France