Thomas E. Blue. Ph.D.

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Education and Training:

Miami University	Oxford, OH	Physics	B.S., 1972
University of Michigan	Ann Arbor, MI	Nuclear Science	M.S., 1973
University of Michigan	Ann Arbor, MI	Nuclear Engineering	Ph.D., 1978

Research and Professional Experience:

2016-present	Academy Professor, The Ohio State University
2007-2016	Director, Nuclear Reactor Laboratory, The Ohio State University
1997-2016	Full Professor, Dept. of Mech. & Aerospace Engr., Ohio State Univ.
1990-1997	Assoc. Professor, Dept. of Mech. & Aerospace Engr., Ohio State Univ.
1984-1990	Asst. Professor, Dept. of Mech. & Aerospace Engr., Ohio State Univ.
1978-1984	Assistant Professor, Nuclear Engineering, University of Illinois
1977	Consultant, KMS Fusion, Ann Arbor, MI
1975-1977	Research Assistant in Nuclear Engineering, University of Michigan

Honors and Awards:

1. Elected Fellow of the American Nuclear Society, April 2002
2. Received 2012 Lumley Interdisciplinary Research Award from Ohio State University, College of Engineering.

Publications: (from over 105 archival journal publications and over 205 refereed proceedings)

1. "In-situ gamma radiation-induced-attenuation in Silica Optical Fiber heated up to 600ºC." D. Hawn, C. Petrie, T.E. Blue, W. Windl. Journal of Non-Crystalline Solids 379:192-200; Nov. 2013.
2. "Evaluation of the performance of distributed temperature measurement with single-mode fiber using Rayleigh Backscatter up to 1000ºC." T. Woods, B. Blake, T.E. Blue, C. Petrie, D. Hawn. IEEE Sensors Journal, 14(1): 124-128; January 2014.
3. "In-situ gamma radiation-induced attenuation in sapphire optical fibers heated to 1000ºC." C. Petrie, B. Wilson, T.E. Blue. J. Am. Ceram. Soc., 97(10): 3150–3156; (2014).
4. "In-situ thermally-induced attenuation in sapphire optical fibers heated to 1400º." C. Petrie, T.E. Blue. J. Am. Ceram. Soc. 98(2):483-489. February 2015.
5. "In-situ reactor radiation-induced attenuation in sapphire optical fibers heated up to 1000 ºC." C. Petrie and T.E. Blue. Nuclear Inst. and Methods in Physics Research, B, 342: 91-97; (Jan. 2015.)
6. "In-situ reactor radiation-induced attenuation in sapphire optical fibers." C. Petrie, W. Windl,

T.E. Blue. J. Am. Ceram. Soc. 97(12): 3883-3889; December 2014.

7. "Reactor Radiation-Induced Attenuation in Fused Silica Optical Fibers Heated up to 1000°C." C. Petrie, D. Hawn, W. Windl, T.E. Blue. J. of Non-Crystalline Solids 409: 88-94 (Feb 1, 2015).
8. "An Analytical Model for the Time Constants of Optical Fiber Temperature Sensing." R.K. Palmer, K.M. McCary, and T.E. Blue. IEEE Sensors Journal, 17(17):5492-5502. September 1, 2017.
9. "Effect of gamma-ray and neutron heating as interfering input for the measurement of temperature using optical fiber sensor system." T.E. Blue, B. Wilson. IEEE Transactions on Nuc. Sci. 64(11):2774-2781. Nov. 2017.
10. "Creation of an internal cladding in sapphire optical fiber using the $^{6}Li(n,alpha)^{3}H$ reaction." B.A. Wilson, T.E. Blue. IEEE Sensors Journal. 17(22):7433-7439. November 15, 2017.
11. "Modulation Transfer Function for Distributed Temperature Measurements Using an Optical Fiber Sensor System," R.K. Palmer and T.E. Blue. IEEE Sensors Journal, 18(5):1911-1918. March 1, 2018.
12. "High-Temperature Effects on the Light Transmission through Sapphire Optical Fiber." B. A. Wilson, C. M. Petrie, T.E. Blue. J Am Ceram Soc. 101:3452-3459. June 4, 2018.
13. "Thermally Induced Bend Loss of Silica Optical Fiber." A. Birri, K. McCary, B.A. Wilson, T.E. Blue. IEEE Sensors Journal. 18(15): 6181-6187. 2018.
14. "Quasi-distributed Temperature Sensing using Type-II Fiber Bragg Gratings in Sapphire Optical Fiber to Temperatures up to 1300ºC." B. Wilson and T.E. Blue. IEEE Sensors, 18(20):8345-8351. Oct.2018.
15. "Modeling the creation of an internal cladding in sapphire optical fiber using the $^{6}Li(n,\alpha)^{3}H$ reaction." B. Wilson, S. Rana, H. Subbaraman, N. Kandadai, T.E. Blue. IEEE/OSA Journal of Lightwave Technology, 36(23): 5381-5387. December 1, 2018.
16. "Deduced Refractive Index Profile Changes of Type I and Type II Gratings when Subjected to Ionizing Radiation." A. Birri, B. Wilson, T.E.Blue. IEEE Sensors Journal Early Access on IEEEXplore. 10.1109/JSEN.2019.2904013. March 2019

Synergistic Activities:

1) Former Director of The Ohio State University Nuclear Reactor Lab

2) I have been the Principal Investigator for more than 7 funded nuclear reactor irradiation research projects that involved the irradiation of optical fibers (silica and single crystal sapphire) and optical fibers with Fiber Bragg Gratings, in the OSU Research Reactor, at room temperature and at high temperatures.

3) Co-inventor (with Brandon A. Wilson) of provisional patent (in process of being converted to utility patent) Titled: CREATION OF AN INTERNAL CLADDING IN SAPPHIRE OPTICAL FIBER BY REACTOR IRRADIATION // USPTO 62/475,312, filed March 23, 2017.