

# A Frontier in Communication Systems Research: Underwater Wireless Optical Communication Systems

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## **Abstract:**

Japan is surrounded by sea and has wide Exclusive Economic Zone (EEZ). While underwater remote exploring vehicles are helpful for undersea resource explorations, current ones are connected with mother ships by cables and it severely loses freedom of the vehicle operation, therefore, high-speed underwater wireless communication technologies are required. Unfortunately, as water absorbs all kind of electromagnetic waves except for visible light from blue to green, those light is only the solution for high-speed underwater wireless communications. In this talk, our challenges on high-speed underwater wireless-optical communication (UWOC) systems research are introduced.

## **About the Speaker:**



Prof. Dr. Masanori Hanawa received the B.E., M.E., and Ph.D. degrees all from Saitama University, Japan, in 1990, 1992, and 1995, respectively. In 1995, he joined the Faculty of Engineering, University of Yamanashi, Japan as an assistant professor. Now he is serving as a professor at the Department of Electrical and Electronic Engineering (EEE) as well as the head of the department, the director of the center for the higher education, and an advisor to the president, of this university. His research interests are in fiber-optic and underwater wireless-optical communication systems including a wide variety of applied signal processing. He received the 1998 Young Engineer Award, and the 2017 Distinguished Educational Practitioner Award, both from the Institute of Electronics, Information and Communication Engineer (IEICE) in Japan.