

Susumu Noda received the B.S., M.S., and Ph.D. degrees from Kyoto University, Kyoto, Japan, in 1982, 1984, and 1991, respectively, all in electronics, and the Honorary degree from Gent University, Gent, Belgium, in 2006.

From 1984 to 1988, he was with the Mitsubishi Electric Corporation, where he engaged in the works on distributed-feedback lasers, which lead to his works on photonic crystals described below. He then joined Kyoto University in 1988, and is currently a full Professor in the Department of Electronic Science and Engineering and the Director of the Photonics and Electronics Science and Engineering Center at Kyoto University.

He has made pioneering contributions to the field of photonic crystals: (i) realization of a first complete 3D photonic crystal at optical wavelengths (*Science* 2000), (ii) realization of first nanophotonic circuits based on 2D photonic crystal slab with 3D photon confinement (*Nature* 2000), (iii) discovery of high- Q nanocavity concept (*Nature* 2003), and (v) invention of photonic-crystal surface-emitting lasers (PCSELs) (*Appl. Phys. Lett.* 1999). PCSELs have recently attracted much attention because of their ability to simultaneously realize high-output-power and high-beam-quality operation (2014 *Nature Photonics* and 2019 *Nature Materials*), which are very difficult to realize in conventional semiconductor lasers. Now, with the development of PCSELs, the paradigm is expected to change; PCSELs can realize not only simultaneous achievement of high-output power and high-beam quality, but also they can exhibit functionalities that are not achievable with other types of lasers, such as 1D and 2D beam scanning (*Nature Photonics* 2010, *Nature Communications*, 2020) and beam pattern control (*Nature* 2006). These are very important for the forthcoming Society 5.0.

He received various awards, including the IBM Science Award (2000), the Japan Society of Applied Physics Achievement Award on Quantum Electronics (2005), Optical Society of America Joseph Fraunhofer Award/Robert M. Burley Prize (2006), 1st the Japan Society of Applied Physics Fellow (2007), IEEE Fellow (2008), the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (2009), the IEEE Nanotechnology Pioneer Award (2009), The Reo-Esaki Award (2009), Medal with Purple Ribbon (2014), the Japan Society of Applied Physics Outstanding Achievement Award (2015), Fellow of the Laser Society of Japan (2017), and Taizan Award of Institute of Laser Technology (2018) and MOC (Microoptic Conference) Award (2019).