



Naoki Shinohara

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*for contributions to wireless power transfer
technologies and applications*

Naoki Shinohara received his B.E. degree in electronic engineering and his M.E. and Ph.D. degrees in electrical engineering from Kyoto University, Kyoto, Japan, in 1991, 1993, and 1996, respectively. Beginning in 1996, he was a research associate at Kyoto University, where he has been a professor since 2010. He has been engaged in research on space-based solar power (SBSP) and far-field wireless power transfer (WPT) via microwaves as well as microwave processing. His research interests include rectennas (rectifying antennas), beamforming, magnetrons for high microwave power, far-field WPT systems, and so on. He works to advance microwave power technology (wireless electricity and heat) and to realize SBSP with power beaming for a sustainable society by 2050.

He is or has been a fellow of the International Union of Radio Science (URSI), an elected MTT-S Administrative Committee member (2022–2027), a chair and member of MTT-S TC-25 (which covers WPT and conversion), the chair of the MTT-S Standards Committee, the Region 10 coordinator of the MTT-S Member and Geographic Activities Committee, a member of the IEEE WPT Initiative, a founder and steering committee member of the IEEE Wireless Power Transfer Conference and Expo, a chair of URSI Commission D (Electronics and Photonics), the chair and a TC member of IEICE Wireless Power Transfer in Japan, the president and an advisor of the Japan Society of Electromagnetic Wave Energy Applications, the president of the Space Solar Power Systems Society, and an MTT-S Distinguished Microwave Lecturer (DML) (2016–2018). He was the recipient of the 2023 IEEE Journal of Microwaves Best Paper Award; the 2022 Award of the Minister of Education, Culture, Sports, Science, and Technology in Japan, and the 2023 IEICE Achievement Award in Japan. His supervised students were the recipients of 100 awards from 2011 to 2024. He has been the author of over 140 reviewed journal papers as well as 114 keynotes and invited presentations at international conferences.

He has collaborated with over 150 companies for WPT and microwave applications over the last 30 years. He is the coinventor of 35 granted patents and 20 submitted patents. He has worked to harmonize academia and industry for WPT. He organized the Wireless Power Transfer Consortium for Practical Applications and the Wireless Power Management Consortium in Japan, serving as a chair from 2013, working with over 40 companies to establish the WPT market and to encourage the WPT business. He is a technical supervisor at Space Power Technologies (Japan), EMROD (New Zealand), and Space Solar (United Kingdom). Since 2015, he attends the International Telecommunication Union Radiocommunication Sector to discuss WPT as one of the Japanese delegates.

His books are *Wireless Power Transfer via Radio Waves* (ISTE and John Wiley & Sons, 2014); *Recent Wireless Power Transfer Technologies via Radio Waves* (editor) (River Publishers, 2018); *Far-Field Wireless Power Transfer and Energy Harvesting* (Artech House, 2022); *Theory and Technology of Wireless Power Transfer: Inductive, Radio, Optical, and Supersonic Power Transfer* (CRC Press, 2024); *Wireless Power Transfer: Theory, Technology, and Applications* (second edition, editor) (IET, 2018 and 2014); and some English, Japanese, and Chinese translated textbooks on WPT.

Relevant Publications

- [1] N. Shinohara, "Beam control technologies with a high-efficiency phased array for microwave power transmission in Japan," *Proc. IEEE*, vol. 101, no. 6, pp. 1448–1463, Jun. 2013, doi: 10.1109/JPROC.2013.2253062.
- [2] C. T. Rodenbeck et al., "Microwave and millimeter wave power beaming," *IEEE J. Microwaves*, vol. 1, no. 1, pp. 229–259, Jan. 2021, doi: 10.1109/JMW.2020.3033992.
- [3] N. Shinohara, *Wireless Power Transfer via Radiowaves (Wave Series)*. Hoboken, NJ, USA: Wiley, 2014.
- [4] N. Shinohara, N. Borges Carvalho, T. Imura, T. Miyamoto, K. Fujimori, and A. Costanzo, *Theory and Technology of Wireless Power Transfer: Inductive, Radio, Optical, and Supersonic Power Transfer*. CRC Press, 2024.
- [5] N. Shinohara, Ed., *Wireless Power Transfer: Theory, Technology, and Applications*, 2nd ed. London, U.K.: IET, 2024.