Five Challenges of Carbon Nanotubes

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Abstract: In this presentation, we will overview the 30 years history of carbon nanotubes by showing 10 scientific statements on carbon nanotubes and 5 challenges that we should investigate in the near future. My research on carbon nanotubes with many collaborators around the world, especially with Professors Mildred Dresselhaus and Gene Dresselhaus of MIT, has made my 40-years research life with 200 co-authored papers as a wonderful one. I hereby express my deepest gratitude to all researchers in the world in the occasion of my retirement from Tohoku University, in March 2023. I sincerely hope that this story will spark the interest of the next young generation of researchers in emerging research of carbon nanotube and new low-dimensional materials. I am very happy to accept any questions from you!

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Riichiro Saito was born in 1958, and received his Ph. D. at The University of Tokyo in 1985. He became Research Associate at The University of Tokyo (1985), Associate Professor at The University of Electro-Communications (1990), and Professor at Department of Physics, Tohoku University (2003). He has been a visiting scientist at Massachusetts Institute of Technology (1991.10-1992.7) at Prof. Gene Dresselhaus and Prof. Mildred S. Dresselhaus, Visiting Associate Professor at The University of Tokyo (1990-1, 1993-4, 1997-8), Visiting Professor at Shanghai University (2009.10-2011.10), Toho University (2015-2016), Zhejiang University (2018.10-2021.9).

His main field of research is “Physical Properties of Carbon Nanotubes” and “Raman spectroscopy in Graphite Related Systems”. The books with the same titles published, respectively, from Imperial College Press (1998) (CI = 11,499) with Prof. Gene Dresselhaus and Prof. Mildred S. Dresselhaus and from Wiley-VCH (CI = 1,056) with Prof. A. Jorio, Prof. Gene Dresselhaus and Prof. Mildred S. Dresselhaus. Recently he is interested in optical properties of two-dimensional materials. He got 13th Japan IBM prize (Physics, 1999), Hsun Lee research Award (2006), The Japan Carbon Award for Innovation Research (2008).　Somiya　Award, International Union of Materials Research Societies (2009). The 18th Leo Esaki Prize (2022).

He has published 364 original papers with total citation is 41,440　(average citation per article = 103.5, h-index=88, by web of science) whose web page is as follows.

<https://www.webofscience.com/wos/> author/record/931324

77 papers are more than 100 citations and among them 8 papers are more than 1,000. Google scholar citation-index is 70,800. He has 109 recent published papers for recent 10 years since 2013.