Nagato Yanagi

Dr. Nagato Yanagi is Executive Director of the Fusion Engineering Research Project at the National Institute for Fusion Science (NIFS) in Japan. He received his Ph.D. in 1997 at Kyoto University. He started his career as a scientist at NIFS in 1989 when the Large Helical Device (LHD) project had started. The LHD is a fusion experimental machine having a magnetic configuration called the heliotron to confine high-temperature plasmas. It is presently one of the two major helical/stellarator devices in the world together with W7-X in Germany. In the early 1990's, he worked on the development of a large-current capacity NbTi-based superconducting conductor to be applied to the windings of the LHD helical coils. In 1998, the LHD construction was successfully completed and the plasma experiment was started. Since then, more than 20 years of stable operations have resulted in fruitful experimental observations on the plasma confinement to prove the advantage of the heliotron configuration to be employed in the future steady-state fusion reactors.

In the early 2000's, he participated in the RT project at the University of Tokyo in which magnetically levitated high-temperature coils were levitated for advanced plasma confinement. This project gave him a good opportunity to start working on the development of large-scale HTS magnets and conductors for fusion reactors. In 2014, he and his team achieved a world record of 100 kA current with the STARS conductor. Using this conductor, he is presently promoting an engineering design of a 100 MW heliotron fusion reactor.

In 2017, he was appointed as a professor at SOKENDAI, the Graduate University for Advanced Sciences in Japan, where he teaches fusion engineering and applied superconductivity. He is also a guest professor at Tohoku University, and an editor of the international journal, Fusion Engineering and Design (FED).