RTRI's Researcher Receives Young Scientist Award

Dr. Munemasa Tokunaga, Senior Researcher of RTRI, received the Young Scientist Award for 2022 from the Minister of Education, Culture, Sports, Science and Technology. On May 24, Dr. Tokunaga was handed the commendation certificate by Dr. Masao Mukaidono, Chairman of RTRI.

Award winner :
Dr. Munemasa Tokunaga,
Senior Researcher, Structural Mechanics,
Railway Dynamics Division

Dr. Watanabe, President of RTRI | Dr. Tokunaga | Dr. Mukaidono, Chairman of RTRI

Outline of the research:

Railway systems consists of many kinds of components including vehicles, tracks, structures, and power supply facilities. So far, however, interactions between these components have not been sufficiently studied, but rather overlooked or oversimplified.

Dr. Tokunaga analyzed the mechanism of dynamic responses between bridges and railway vehicles in order to pursue bridge structures capable of withstanding intensified earthquake vibration and recent increases in train speeds. Dr. Tokunaga has particularly focused on three dynamic interactions having greater impacts: between bridges and vehicles, between bridges and noise-barriers, and between adjacent bridges. Based on the results, he has developed methods to evaluate dynamic behaviors of bridges including noise barriers and vehicles during earthquakes or during train passages and has also developed railway bridge design methods.

The result of his research is expected to enhance Japan's competitiveness in the global market of high-speed rail projects, as well as to improve safety and convenience of railways in Japan.

Comment by Dr. Tokunaga:

I am greatly honored to receive this prestigious award. I would like to express sincere thanks to many people including my supervisors and colleagues. I owe a great deal in achieving the result of this research to the kind support and precious advice by all of them, and to the wonderful research environment at RTRI.

Due to the increasing number of large-scale earthquakes and speed increase of the Shinkansen in recent years, more detailed, deeper analysis has been required to elucidate dynamic interactions between the railway system components such as railway bridges. I believe this research achievement, crossing over different fields of railway technologies, will further drive the development of railways.

Keeping in mind this honorable, encouraging moment, I would like to continue research in order to contribute to enhancing the value of railways and creating an affluent and harmonious society.

* Young Scientist Award by the Minister of Education, Culture, Sports, Science and Technology:

This award is given to outstanding young researchers under age 40 who achieve distinguished research newly-emerging issues or from unique and original perspectives.