

RTRI's Researcher Receives Young Scientist Award

Dr. Munemasa Tokunaga, Senior Researcher of RTRI, received the Young Scientist Award for 2022 by 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

The award-winning research:

Railway bridge structures withstanding intensified earthquake motion and increased train speeds

[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 ignored or oversimplified.

Dr. Tokunaga analyzed the mechanism of dynamic responses between bridges and railway vehicles in order to pursue rational bridge structures capable of withstanding intensified earthquake vibration and increasing train speeds in recent years. Dr. Tokunaga has particularly focused on the dynamic interactions having greater impacts, those between bridges and vehicles, bridges and noise-barriers, and between adjacent bridges. Based upon 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 developed railway bridge design methods well.

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 colorful society.

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

This award is given to young researchers under age 40 who made distinguished research achievement with outstanding research abilities by conducting research into newly-emerging issues or from unique and original perspectives.



Dr. Watanabe, President of RTRI

Dr. Tokunaga

Dr. Mukaidono, Chairman of RTRI