

RTRI's Researcher Receives the Young Scientist Award

Dr. Hirofumi Tanaka, Senior Researcher of RTRI, received the Young Scientist Award for the fiscal year 2020 one of the Commendation prizes by the Minister of Education, Culture, Sports, Science and Technology. On August 25, Dr. Tanaka was handed the commendation certificate by Dr. Masao Mukaidono, Chairman of RTRI.

Award winner:

Dr. Hirofumi Tanaka

Senior Researcher, Track Geometry and Maintenance, Track Technology Division

The award-winning research: Improving the efficiency of rail roughness maintenance

[Outline of the research]

On rail surface, roughness is generated at the time of manufacturing or by train running. When a train runs on the rough-surface rail, significant noises and vibrations might be generated depending on the extent of roughness. Since the wavelengths and amplitudes of the noises and vibrations are minute, several to hundreds millimeters and less than 1 millimeter respectively, the techniques to detect and measure the roughness efficiently and precisely have not yet been established so far.

Then, Dr. Tanaka conducted the following:

1. Development of the method to evaluate the roughness efficiently using the noise and acceleration data measured on board.
2. Development and commercial application of the ground equipment that is capable of measuring the roughness accurately
3. Proposing an efficient roughness controlling method using the above method and equipment

The result of this research enables quantitative management of rail-surface roughness, and cost reduction and improvement of railway facilities maintenance.

[Comment by Dr. Tanaka]

I am greatly honored to receive this prestigious award. I would like to express sincere thanks to the people at RTRI and other organizations including railway operators who have given to me a lot of guidance and advice.

The subtle roughness on the rail surface generates noises and vibrations and they might damage the trackside environment and the ride comfort in the cabin, and further on, damage facilities. The results of this research will contribute to achieving efficient rail-roughness maintenance to prevent the growth of roughness and to further development of railways.

With this encouraging award, I would like to continue the research in order to contribute to further development of railways and creation of a happier society.



Dr. Tanaka (left) handed the award certificate by Prof. Mukaidono

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

This award was launched in order to support the next-generation researchers' career formation and to contribute to developing original and creative technologies and is given to young researchers who have shown outstanding research abilities by conducting the research into newly-emerging issues or from original perspectives.