

Dear Readers

The year 2021 that is coming to an end was the year of two important anniversaries – the 70th anniversary of the Railway Research Institute and the 25th anniversary of the Test Track Centre in Żmigród. The coronavirus pandemic affecting us to various extent throughout the year led to the postponement of anniversary ceremonies to March 2022. Fortunately, the pandemic did not halt research and development works carried out at the Institute, which is reflected by the 193rd volume of Problemy Kolejnictwa, in which four out of six papers were written by Railway Research Institute employees.

In the paper by D. Adamski and Ł. Zawadka, the current and important issue of studying the integration of ERTMS/ETCS onboard subsystems with track-side subsystems. The aim of the study was to ensure the freedom of movement of interoperable rolling stock along an interoperable railway line, whereas the paper by A. Kaźmierczak tackles the role of active fire protection systems based on water fire extinguishing systems and used in current rolling stock.

The paper by W. Koc from the Gdańsk University of Technology deals with the issue of constructing a geometric arrangement for a two-track railway line on a curve using analytical design method rules. This method makes it possible to determine the six-foot way axis and the axis of the inner and outer track in practical terms. In the paper by P. Rakoczy and R. Bińkowski, the comparative analysis of fatigue strength calculation methods for monobloc railway wheels – a 3D model and a simplified axially symmetric model with an asymmetric load – was made.

The last two papers in the volume highlight issues related to materials. The paper by M. Słowiński concerns examples of using CFRP composites as structural components of railway vehicles, whereas the paper by M. Szymański tackles the issue of using bainitic steel to make railway rails. The analysis of factors affecting the mechanical properties of rails seems to be of particular interest.

I hope that the 193rd volume of Problemy Kolejnictwa will be an interesting and useful read for all Readers.

*Andrzej Massel
Editor-in-Chief*