Dear Readers,

In 2024, it was the 100th anniversary of the establishment of the Experimental Division at the Ministry of Railways, the continuation of which is the Railway Research Institute. For that reason, this issue of Problemy Kolejnictwa (Railway Reports), as the previous 202 issue, has a special character. It combines a reference to the traditions of the Institute and the history of the Polish railways with the presentation of matters important in the context of the future of railway in Poland and Europe, related to the increasingly widespread use of digital solutions.

It is therefore no coincidence that this issue includes an article presenting the initiator and head of the Experimental Division, Professor Albert Czeczott (1873–1955). He was the author of many methods of testing rail vehicles, which formed the basis for assessing their operational suitability and rational use.

The text about Professor Czeczott is worth publishing together with an extensive article on research and current challenges in the field of rolling stock. Its authors are the employees of the Rolling Stock Testing Laboratory at our Institute, which directly continues the tradition of the Experimental Division.

Another reference to the history of the Polish railway industry is an article by a team of authors from the Gdańsk University of Technology, in which they describe the evolution of the technology and construction of railway turnouts used in Polish rail transport. Based on the volume published in 1947, the article presents the construction of S-type turnouts. This was a type of rail developed in the pre-war Poland and introduced as a construction standard in the Polish rail transport.

The challenges related to the introduction of digital solutions in various areas of the railway industry are discussed in the article by prof. M. Pawlik on railway safety in the context of using cloud services.

The multi-author article by specialists from the Poznań University of Technology and the Poznań Institute of Technology presents a proposal for a new method of railway track superstructure diagnostics. The topic is the possibilities of using vibration signal characteristics to detect railway track defects.

On behalf of the Editorial Board of our journal, I hope that the combination of reflection on the past with a look into the future will be an inspiration for you and will encourage you to deepen your knowledge about research for the needs of rail transport and its infrastructure.

Ph.D. Eng. Andrzej MASSEL
Editor in Chief