

## SUMMARIES

## ARTICLES

**Adam Dąbrowski: Participation of the Railway Research Institute in Development of Technical Requirements and Verification of their Performance for the EP09 and EU44 PKP Intercity S.A. Locomotives Simulator**

The subject of the work was a substantive support of PKP Intercity S.A. in a process of order, construction and commission of electric locomotives simulator, especially description of technical requirements for the simulator and conducting of suitable tests.

**Keywords:** locomotive, simulator, virtual reality

**Jacek Kukulski: Dynamometer Test of Sintered Disc Brake Pads for the High Speed Trains**

In the article there were described bench tests of sintered disc brake pads of Chinese production designed for use in Chinese high speed rail trains. There were also presented the technical parameters of the Railway Research Institute's brake stand, used for described above tests.

**Keywords:** railway transport, high speed trains, sinter disc brake pads, brake stand

**Damian Majchrzyk, Izabela Tarka: Electric Cables and Wires for Rolling Stock**

In the article there were presented characteristics of electric cables important for using in rolling stock. Special attention was paid on their flammability and smoke properties, as the statistics show, that cables can be a crucial element of fire safety in means of transport. Polish legal requirements for test methods for cables used in rolling stock were characterized. There were described examination benches and test procedures performed in the Materials & Structures Laboratory in accordance with mentioned above requirements.

**Keywords:** electric cables and wires, fire safety, fire behavior, test methods

**Danuta Milczarek, Elżbieta Naduk: Requirements for the Spreads of Railway Turnouts**

In the article there were characterized lubricants used for railway turnouts and were also presented requirements and scope of measurements of their parameters. Natural environment protection was included as well as technical and economical aspects of costs and workload reduction during maintenance of railway turnouts.

**Keywords:** lubricant, physicochemical properties, biodegradability, railway turnout

**Janusz Poliński, Krzysztof Ochociński, Piotr Gondek: Availability of the „Express InterCity Premium” Offer for People with Reduced Mobility (PRM)**

The subject of the article is an availability of the Express Intercity Premium offer proposed by the PKP Intercity S.A. company for people with reduced mobility (PRM). On the basis of performed researches availability of Pendolino services and selected railway stations, on which trains are to stop, was defined.

**Keywords:** transportation of people, transport offer, disabled person, availability

**Marek Sumiła: Issues of Approval Into Service the New VHF Radios for the Needs of Railway Radio Communication in Poland**

In the article there were presented requirements for analog transceivers for wireless communication on Polish rail network managed by PKP PLK S.A. There were characterized as follows: VHF rail system, criteria for approval by the the Office of Rail Transport (UTK) device type to be used on Polish railways and the approval process. There were described research possibilities of the Signalling and Testing Laboratory of the Railway Research Institute in the field of analysis of the manufacturer's documentation and carrying out laboratory tests of device type conformity to set requirements.

**Key words:** certification, railway radio communication, VHF radio

## RESEARCH INFORMATION

**Szymon Klemba: Consulting in the Organization of Railway Passenger Transport in Lubelskie Voivodeship in 2014**

The work involved preparation and consulting of an annual regional trains timetable in Lubelskie Voivodeship. The scope of works and their phases were characterized. An example showing differences between prepared beforehand timetable concept and a result of real timetable construction was given. There were formulated conclusions and guidelines on organization of passenger railway transport process in future years.

**Keywords:** railway transport, timetable

**Magdalena Garlikowska: Participation of the Railway Research Institute in the European Project NEAR2 in the 7<sup>th</sup> Framework Programme**

In the article there were presented aims and a scope of the European research project NEAR2 in which the Railway Research Institute participated. There were characterized works at particular stages of the project, which were car-

ried out in five work packages. The particular attention was paid to ten so called Concept Papers, the preparation and approval of which were the largest part of the works within the project. There were presented results achieved and conclusions from execution of the project as well as suggestions for the future.

**Keywords:** Trans-Eurasian Corridor, Rail Research Network, Network of Excellence

**Witold Olpiński: The Participation of the Railway Research Institute in the European Project EUREMCO within the 7<sup>th</sup> EU Framework Programme**

There were presented aims and characteristics of the international project named EUREMCO (*European Railway ElectroMagnetic Compatibility*) in which the Railway Research Institute participated. There were mentioned work packages in which the Institute took part, and the scope of the Institute's works in particular packages was described. Aims and substantive effects achieved during the realisation of the project were characterized. There were also presented difficulties encountered in the course of work.

**Keywords:** Electromagnetic Compatibility, EMC, track circuits, 7<sup>th</sup> Framework Programme, EUREMCO

**Michał Rudowski: Implementation of the ERP System at the Railway Research Institute**

An implementation of the ERP System at the Railway Research Institute in years 2014-2015 was described. There were presented basic system modules and their business processes supporting functions applied in the Railway Research Institute. As a result of the implementation works the Railway Research Institute obtained modern and integrated management supporting tool. This tool may be and will be integrated into other management supporting applications, used for projects (subjects, research tasks, and others), business trips, order processing.

**Keywords:** ERP system, Railway Research Institute, finance and accounting, HR, asset management

**Paweł Winciorek: Operating Tests of Rail-road Vehicle Type Lok 22.520**

There were described operating tests of auxiliary (rail-road) vehicle used for shunting on railway sidings. The ve-

hicle was tested on the basis of technical documentation provided by the customer and tests carried out by the Railway Research Institute.

**Keywords:** railway transport, service tests, rail-road vehicle

**Renata Barcikowska: The 4<sup>th</sup> International Conference on Advanced Rail Technologies**

There was presented information on the 4<sup>th</sup> International Conference on Advanced Rail Technologies organized regularly by the Railway Research Institute and the Faculty of Transport of the Warsaw University of Technology.

**Keywords:** science, rail transport, advanced technologies

**Magdalena Garlikowska: Polish-German Week of Cooperation in Rail Industry: 22–26.06.2015**

There was presented the aim and the subject of the Polish-German Week of Cooperation in railway transport. The content and the course of meeting were described and future advantages of this event for the development of mutual cooperation in railway transport and industry were presented.

**Keywords:** Polish-German cooperation, railway industry, interoperability of the rail system

**Elżbieta Langa: The Railway Research Institute Received the Award of the Minister for Innovativeness**

During the ceremony preceding the official opening of the fifth edition of the Railway Congress there were presented the awards of the Minister for Economy Janusz Piechociński. Among recognized and distinguished companies was the Railway Research Institute which was awarded for its innovativeness in the field of scientific and research activities. The crystal statuette together with the letter of congratulations and wishes of further achievements in rail transport industry were collected by the Director of the Railway Research Institute Andrzej Żurkowski PhD., Eng.

**Keywords:** railway transport, Railway Research Institute, innovativeness, Railway Congress, award of the Minister for Economy