

Microtomographic Analysis of Friction Materials Used in the Brakes of Railway Vehicles

Authors : Mikołaj Szyca

Abstract : Friction elements of rail vehicle brakes are more and more often made of composite materials that displace cast iron. Materials are tested primarily in terms of their dynamic abilities, but the material structure of brake pads and linings changes during operation. In connection with the above, the changes taking place in the tested rubbing materials were analyzed using X-ray computed tomography in order to obtain data on changes in the structure of the material immediately after production and after a certain number of operating cycles. The implementation of microtomography research for experimental work on new friction materials may result in increasing the potential for the production of new composites by eliminating unfavorable material factors and, consequently, improving the dynamic parameters.

Keywords : composite materials, friction pair, X-ray computed microtomography, railway

Conference Title : ICRE 2022 : International Conference on Railway Engineering

Conference Location : Riga, Latvia

Conference Dates : June 16-17, 2022