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10th International Congress Motor Vehicles & Motors 2024

ECOLOGY - VEHICLE AND ROAD SAFETY - EFFICIENCY

Book of abstracts



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and Motors



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SAFETY – EFFICIENCY**

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MVM2024-026	Minja Velemir Radović Danijela Nikolić Nebojša Jurišević Saša Jovanović	APPLICATION OF WASTE PLASTIC OIL IN THE MODERN AUTOMOTIVE INDUSTRY	15
MVM2024-031	Mirosljub Tomić Dragan Knežević Miloljub Štavljanin	CYLINDER DEACTIVATION IN IC ENGINES IN CYLINDER PROCESS SIMULATION	16
MVM2024-037	Marko Nenadović Dragan Knežević Željko Bulatović	CHARACTERISTICS OF TORSIONAL OSCILLATIONS OF PERKINS 1104 ENGINE CRANKSHAFT	17
MVM2024-038	Marko Nenadović Dragan Knežević Željko Bulatović	ANALYSIS OF CRANKSHAFT TORSIONAL OSCILLATION DUMPER FOR ENGINE V-46-6	18
MVM2024-047	Attila Kiss Bálint Szabó Zoltán Weltsch	THE SAFETY ISSUES OF HYDROGEN- GASOLINE DUAL-FUEL INJECTION IN NATURAL ASPIRATED INTERNAL COMBUSTION ENGINES	19
MVM2024-049	Ivan Grujić Aleksandar Davinić Nadica Stojanović Željko Đurić Marko Lučić Radivoje Pešić	THE NUMERICAL INVESTIGATION OF THE WORKING CYCLE OF DUAL FUEL IC ENGINE	20

SECTION B – VEHICLE DESIGN AND MANUFACTURING

MVM2024-005	Gordana Bogdanović Dragan Čukanović Aleksandar Radaković Milan T. Đorđević Petar Knežević	FUNCTIONALLY GRADED MATERIALS IN AUTOMOTIVE INDUSTRY-MODELLING AND ANALYSIS OF FG PLATE ON ELASTIC FOUNDATION	23
MVM2024-006	Dušan Arsić Đorđe Ivković Dragan Adamović Vesna Mandić Marko Delić Anđela Mitrović Nada Ratković	APPLICATION OF HIGH STRENGTH STEELS IN AUTOMOTIVE INDUSTRY	24
MVM2024-011	Saša Vasiljević Jasna Glišović Marko Maslač Milan Đorđević Sonja Kostić Dobrivoje Čatić	TIRE WEAR: VEHICLE SAFETY AND ENVIRONMENTAL PROBLEM	25
MVM2024-012	Zorica Đorđević Sonja Kostić Saša Jovanović Danijela Nikolić	THE INFLUENCE OF FIBER ORIENTATION ANGLE ON THE STABILITY OF A COMPOSITE DRIVE SHAFT	26

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APPLICATION OF HIGH STRENGTH STEELS IN AUTOMOTIVE INDUSTRY

ABSTRACT: The aim of this paper was to present possibilities for application of the Advanced High-Strength Steels (AHSS) in the automotive industry. Besides, paper analyses their manufacturing processes and properties. Nowadays, there is constant need in the automotive industry to reduce weight of the vehicle in order to lower the gas consumption as well as to increase the ability to carry more weight. This goal can be achieved by using the materials with better mechanical properties or to use materials with lower density, such as aluminium or titanium. The AHSSs were created as a solution to reduce the weight of parts and structures in various transportation industries by increasing the mechanical properties. The AHSS steels are developed in three generation. Each generation has better mechanical properties than the previous. The increase of the steels properties is achieved by implementing the selected heat treatment procedures and precise micro alloying. In this paper authors tried to emphasize the advantages of using the AHSS in automotive industry and that the application of these materials directly results in lowering the structures' mass and it positively affects energy efficiency, preservation of the environment and lowering the pollution levels.

KEYWORDS: Advanced High-Strength Steels, automotive industry, vehicle, mechanical properties.

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