
ABSTRACTS

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Technological process of design and production of facial burn mask

(pages 109-114)

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Keywords: skin burns, facial mask, facial orthosis, 3D printing, 3D scanning.

Abstract: This article deals with the issue of the management of facial burn treatment using an orthotic device. Discusses the possibilities of using thermoplastic as a suitable material for the production of facial orthosis. It describes the methods of obtaining measurement data of the patient and the subsequent design and production of the orthotic aid using traditional and innovative methods. Subsequently, a model of the human face was obtained using the Artec Eva optical hand-held 3D scanner, which served as a basis for the design of the facial mask in the Meshmixer software. From the conclusions, it is clear that the process of manufacturing a burn mask using innovative methods brings many advantages, in terms of patient comfort and time-saving, compared to conventionally used procedures. After verifying this methodology and verifying the biocompatibility of the proposed material, it would be appropriate to put the methodology proposal into practice.

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Personalized modification of sport dance wheelchairs

(pages 115-119)

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Keywords: wheelchair, dance, sport, personalization.

Abstract: Standard modifications of active wheelchairs are commonly performed, but they often do not take into account the individual needs of dancers. The presented article aims to propose the optimization and personalization of the Quickie Argon Ti dance wheelchair for a specific subject. A visualization of a personalized dance wheelchair was created, abiding by the dimensional frame. The quality of the performance of physically disabled individuals in sports dancing on wheelchairs is significantly influenced by its construction and parameters. In this article, a standard sports wheelchair, and the requirements placed on a sports wheelchair used for dancing were described. After addressing the shortcomings, the modifications of selected components of the disabled sports wheelchair were presented.

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Ergonomic analysis of the classroom using the LiDAR system

(pages 121-127)

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Keywords: LiDAR, 3D scanning, ergonomics, standards of the working environment.

Abstract: This article presents an innovative method of using LiDAR technology to analyze and measure the current ergonomic conditions of a university classroom. The purpose of this research is to provide a detailed analysis of the working environment and to identify collision points, proposing changes and improvements to meet the rules and standards of ergonomic correctness. The outcome of this analysis is a 3D model containing detailed information about the current state of the environment. This model was subsequently utilized to identify ergonomic deficiencies, which formed the basis for proposed modifications. The article also discusses the applications of modern LiDAR technology, its functions, and accessibility for ordinary users, as well as accessibility on individual software platforms.

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Technology and possibilities of recycling catalysts

(pages 129-132)

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Keywords: catalysts, recycling, PGM, materials, technology.

Abstract: The presented article focuses on the possibilities of recycling three types of catalysts. These catalyst types will undergo examination, measurement, and analysis with the aim of identifying which of these catalysts contains the necessary number of precious metals (PGM - Platinum Group Metals). PGM metals are among the rarest and most challenging-to-obtain elements on Earth, carrying a high risk of supply shortage. Nevertheless, they are crucial for the European Union (EU) and the automotive industry. Not every catalyst used in the market is suitable for recycling due to the absence of these precious metal particles.

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The influence of the cutting tool geometry on the surface quality of the parts manufactured by WAAM - Wire Arc Additive Manufacturing

(pages 133-138)

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Keywords: milling, WAAM, measurement, thin-walled parts, end mill tools.

Abstract: Thin-walled components have extensive usage in the aviation, aerospace, automotive, and energy sectors. Wire Arc Additive Manufacturing (WAAM) additive technology is a technology that is used to produce thin-walled components by adding layers by layers. MIG/MAG welding technology is used in WAAM. The milling of thin-walled components often results in chatter, which causes waves on the milled surfaces. The variable helix angle reduces chatter during milling. The study found that a constant helix angle of 30°-30°-30° caused the active part of the wall to deflect towards the cutting tool, resulting in the least desirable outcomes. In contrast, cutting tools with 30°-30°-25° and 30°-30°-35° helix angles produced comparable results with minor surface waves.

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The effect of characteristics of SMEs to the order processing and information system costs

(pages 139-142)

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Keywords: logistics, order processing, information system, cost reduction, characteristics of small and medium enterprises (SMEs).

Abstract: It is apparent that the logistics process can reduce cost in order to have an efficient profit, efficient suitable and efficient economical way to run a sustainable business. This research aimed to study the effect of characteristics of small and medium-sized enterprises (SME) on the reduction of operating costs to get the most benefit and most suitable and the most economical way to run a sustainable business. A case study of logistics of small and medium-sized enterprise entrepreneurs in Pathum Thani Province by using questionnaires to collect 400 sets of data. The results of the study showed that the purchase order and the information system affected the reduction of operating costs. Participants responded the different registered capital of small and medium-sized enterprises (SME) have differences in managing cost systems, and the business uses information systems in the flow of information through electronic processes that are ordered by customers systematically with statistical significance at the level of 0.05.

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Design of low-pressure transportable steel tanks for storing hydrogen for an electric tractor

(pages 143-148)

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Keywords: hydrogen, low-pressure storage, pressure vessel, metal hydride.

Abstract: The presented contribution offers a theoretical analysis of the possibilities of implementing hydrogen technologies in agricultural machines and tractors. It discusses in more detail the structural designs and strength calculations of low-pressure transportable steel tanks for hydrogen storage for the ET 3000 electric tractor, in which the accumulators will be replaced by designed metal hydride tanks. The structural design of low-pressure tanks meets the requirements of the STN EN 13322-2 standard, which deals with the technical and structural design of transportable pressure tanks. The design and construction of tanks are key from the point of view of the real implementation of hydrogen technology in a fully functional small tractor for the purpose of its long-term testing.

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Methodical approaches to valuation of intangible assets

(pages 149-156)

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Keywords: intangible assets, valuation, international accounting standards.

Abstract: Intangible assets in the activities of business entities can constitute a significant part of assets. Their valuation can be done in several ways, which are fundamentally different. Literature offers several methods for valuing intangible assets, which are based on three basic approaches. Each of them captures the value of the property based on different specific characteristics. The issue of intangible assets is also addressed by international accounting standards, the task of which is to guide the accounting and reporting of this type of assets so that the financial statements provide correct and complete information that is comparable on a global basis.

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Drivers of intangible assets accumulation as a prerequisite for Industry 4.0 (pages 157-163)

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Keywords: Industry 4.0, intangible assets, research and development, human capital, global value chains.

Abstract: Industrial revolutions are causing unprecedented changes in the country's economy. These changes are driven by new technologies and innovations. This is primarily based on the growing importance of intangible assets. These are the main characteristics of the ongoing industrial revolution. In the absence of a precise definition and indicators quantifying Industry 4.0, intangible assets are presumed to be the common basis of determinants of Industry 4.0. This paper presents the theoretical basis for determining the Industrial Revolution. Comprehensively describes the determinants of the accumulation of intangible assets. Implementing a panel regression technique with random effects shows the results. We identify the factors unlocking the accumulation of intangible assets. This is primarily in the area of government direct and indirect support for investment in R&D and other innovation assets. Also, it is about creating the environment to encourage private investment in innovation assets, intangible ICT assets and economic competencies.
