
ABSTRACTS

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USE OF AUGMENTED AND VIRTUAL REALITY IN INDUSTRIAL ENGINEERING

(pages 31-34)

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Keywords: virtual reality, augmented reality, advanced industrial engineering

Abstract: This paper describes the use of virtual and augmented reality technologies in various fields of industrial engineering. The article provides the brief description of how augmented or virtual reality contributes to the process improvement. It is also focused on the characteristic areas and the best-known areas of industrial engineering such as goods picking, design of production and logistics systems, design of assembly workplaces and visualization of procedures and ergonomics.

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IMPACT ANALYSIS OF SHALE GAS EXPLOITATION

(pages 35-44)

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Keywords: shale gas, fracking, directional drilling, environmental impacts, system dynamic

Abstract: Shale gas is a type of unconventional gas exploited by the fracking process that has been widely diffused in the United States of America. This example has also led several countries to equate the possibility of exploring gas in non-conventional reservoirs, following the release of the world ranking of technically recoverable reserves in 2013 from the U.S. Energy Information Administration. Fracking is the combination of two complex processes: hydraulic fracturing and horizontal drilling and it can raise important environmental and social concerns. Currently, the methodologies used to assess impacts, when choosing a new energy source, tend to deal independently with the variables that make up these

impacts. However, these variables are interrelated and will interact with each other. A systemic analysis is then required to deal with these complex relations. The purpose of this paper is to demonstrate the use of a system dynamics tool to assess these impacts and by this contribute to making better energy-related choices and to support the achievement of sustainable development goals.

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INCREASING THE ECONOMIC POTENTIAL OF RECYCLED POLYVINYL BUTYRAL BY REDUCING ITS ATMOSPHERIC DEGRADATION

(pages 45-48)

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Keywords: circular economy, waste, windscreen, PVB, atmospheric humidity

Abstract: The global market for polyvinyl butyral is segmented based on the end-user industry into the fields of construction, transport and electrical engineering. The application possibilities of recycled polyvinyl butyral (PVB) depend on its thorough preparation for use. This paper aims to analyse PVB in terms of its atmospheric degradation, to which it is susceptible, like most thermoplastics. By correctly determining the gravimetric water content, we can more precisely set the test conditions and thus increase its application possibilities to various areas of industry. Precisely because of fundamental properties such as excellent durability, stability and superior mechanical strength, it makes PVB a more advantageous choice for automobile manufacturers. Also, this product protects against infrared radiation and UV, noise reduction. With the growing number of automobiles, together with the change in consumer preference for safety, we expect demand to increase in the polyvinyl butyral market in the following years.

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FROM PRODUCTION PROCESS TO PRODUCTION SYSTEM – HOW TO MANAGE THEIR INTERCONNECTION – THE CHALLENGE OF TODAY'S ENVIRONMENT FOR COMPANIES

(pages 49-54)

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Keywords: production system, production process, optimization

Abstract: This paper deals with two very important concepts – namely production system and production process and it is also oriented on the way of their optimization. This paper is divided into three main sections. First section treats with

production system, while you can find their model of production systems and summarized principles of production system. Second section is oriented on the production process, which is the basic part in production companies and errors in production process have a significant impact on the company. Third main section is about optimization of production process and production system, while there are debated stages of optimization and optimization as the necessary criterion of successful company.

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OVERVIEW OF THE CURRENT METHODS FOR REDUCTION OF ARTIFACTS IN CT AND MR IMAGING FOR IMPLANTS MADE BY ADDITIVE MANUFACTURING

(pages 55-58)

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Keywords: computed tomography, magnetic resonance imaging, artifacts, reduction of metallic artifacts

Abstract: When diagnosing a patient, using computer tomography and magnetic resonance imaging, who has metal implants, it is important to minimize the resulting artifacts and increase image quality. The aim of this review article was to point out standard and advanced techniques for reducing these artifacts. We can reduce these artifacts by a variety of methods such as low-intensity magnetic field scanning, non-magnetic metal implant orientation, and broadening the receiver bandwidth. In computed tomography with dual energy, we can reduce the artifacts using algorithms too.
