
ABSTRACTS

*doi:10.22306/asim.v8i4.88**Received: 09 Nov. 2022**Revised: 29 Nov. 2022**Accepted: 10 Dec. 2022***The use of programmes for the digitization of production clusters**

(pages 29-34)

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Keywords: digitization, production cluster, software products.**Abstract:** This article deals with a hot topic for successful entrepreneurs - digitalization and its use in industrial enterprises. The article includes a comparison of digitization and visualization software for manufacturing clusters. The comparison takes into account factors such as student license, user level as well as the hardware required. The last part of the paper includes the creation of a model of the production floor using the selected software. This is a production hall which is part of the Technical University of Košice.*doi:10.22306/asim.v8i4.89**Received: 10 Nov. 2022**Revised: 25 Nov. 2022**Accepted: 09 Dec. 2022***Simulation of the process of emptying the storage tank into road transport vehicles**

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Keywords: storage tank, bulk material, modelling, simulation.

Abstract: Handling bulk material is specific and has different needs than handling piece goods. Bulk material requires a space that is adapted to both filling and emptying of such type of material. It is necessary to dimension the storage tanks in order to ensure an efficient production process. Emptying the storage tank also depends on the transportation of the bulk material to the production process. Road transport trucks must be adapted to transport bulk material, and the vehicle's capacity is the most important for emptying. In addition, it is necessary to monitor the performance of the filling equipment and the emptying technology. In terms of labour input, this process can be effectively monitored with the help of simulation. The simulation model, created in the ExtendSim 10 program, graphically displays various options for setting the emptying process parameters.

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The possibility of using 3D laser scanning as support for reverse engineering

(pages 41-45)

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Keywords: 3D laser scanning, reverse engineering, 3D modelling.

Abstract: This paper describes laser scanning technology as a tool for reverse engineering. The content includes theoretical starting points and knowledge about 3D models, reverse engineering and laser scanning. Furthermore, a method of reverse engineering using 3D laser scanning is proposed, compared with the standard reverse engineering process. The main contribution is comparing the use of hardware in the form of a scanner and software for post-processing.

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Simulation of material flow using vertical transport by a double-action

mine hoist

(pages 47-50)

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Keywords: hoisting equipment, simulation, model, experiment.

Abstract: Vertical transport with the help of mining hoisting equipment in the deep mining of mineral raw materials is an essential part of the entire complex of intra-company transport at every mining plant. This paper aims to simulate the material flow ensured by double-action hoisting equipment. ExtendSim was used as a simulation tool, which combines the possibilities of discrete and continuous simulation and is used by researchers in various fields. The paper presents a simulation model of the material flow - coal transport from the underground to the surface. The paper also presents the results of the experiments performed on the created simulation model, too. The simulation model is a suitable auxiliary tool for the decision-making process or analysis of the current state and rationalization.
