
ABSTRACTS

*doi:10.22306/atec.v5i1.45**Received: 11 Mar. 2019**Accepted: 25 Mar. 2019***BUILDING SUSTAINABILITY AND BUILDING INFORMATION
MODELLING**
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Prešov, Slovakia, EU, annamaria.behunova@tuke.sk (corresponding author)**Keywords:** sustainability, green building, sustainable building, building information modelling, libraries**Abstract:** The environmental protection is one of the most important socio-cultural topics. Protecting and supporting the healthy environment is an important basis for preserving human existence. The quality of the environment is influenced by the construction markedly. There is also required a considerable consumption of redundant sources and energy. In this regard, it is necessary to look for alternative ways and methods for promoting energy efficiency, production reduction, waste and emissions. During the preparation, realization and occupation of buildings, automatized processes are pushed forward. One of the new, innovative processes that increase productivity and production growth is Building Information Modelling (BIM). The paper deals with several options, how the sustainability in construction can be secured in the concepts of building information modelling. The terms as sustainability, green buildings, green components, BIM Libraries are described and the availability of selected "green components" in BIM Libraries is observed.

*doi:10.22306/atec.v5i1.46**Received: 11 Mar. 2019**Accepted: 26 Mar. 2019***NEW TECHNOLOGIES OF TISSUE EXPANSION - REVIEW ARTICLE**
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Keywords: expansion of skin, muscles and bones, tissue expander

Abstract: Currently, plastic surgeons are often challenged to reconstruct extensive and complex tissue defects in various areas of the body. Despite the availability of a variety of operative approaches in practice that are applicable in the long term for the reconstruction of tissue defects, donor and autologous transplants, skin grafts, implants, etc., the result is often not satisfactory. Restrictions of these techniques in restoring and repairing tissue serve as a driving force for the development of new techniques, the development of adipose tissue in tissue engineering. From a didactic point of view, the expansion could be divided into 3rd groups. The first group consists of physiological expansion, e.g. growth of an individual. The second group includes pathological expansion, i. skin growth over areas of tumours. The third group includes artificial expansion, which was an important part of cosmetic or ethnic adaptations for some tribes. This review article addresses the application of tissue expansion in various types of tissues, skin, muscles and bones, as well as its localization and its side effects.

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CONSUMPTION PROFILE AS A BASE FOR DESIGNING RES USING SIMULATION TOOLS

(pages 11-15)

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Keywords: consumption profile, energy management, simulation of energy production, prediction

Abstract: Nowadays, projecting of the renewable energy sources (RES) through simulation program is the very popular. In case usage RES in systems with stable consumption the simulations are sufficiently the exact. The problem arises, when it is necessary to simulate the supply from an unpredictable energy source to a system with unstable or unknown consumption. In particular, in residential buildings, it is very important to know the detailed consumption profile of heat and hot water consumers in the proper design of the RES. Underestimating its importance may lead to significant financial losses of the investor, user of RES technology.

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THE 3D PRINTING IMPLEMENTATION IN MANUFACTURING OF AUTOMOBILE COMPONENTS

(pages 17-21)

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Keywords: 3D printing, 3D printer, modelling, disc, automobile

Abstract: The paper is focused on the issue of 3D printing and its possible use in automotive production. It introduces the principle of 3D printing and its main advantages. An automobile disk production is demonstrated using 3D printing. The process of the disc production is realized in steps disc design, CAD model creation, wall thickness analysis, STL format creation and loading, 3D print parameters definition, printing process visualization in software environment, and 3D printing process itself.
