



Properties

59. Effect of ultrasonic treatment of activated carbon on capacitive and pseudocapacitive energy storage in electrochemical supercapacitors

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Analysis and modelling

66. Computer aided design in Selective Laser Sintering (SLS) - application in medicine

L.A. Dobrzański, A. Achteplik-Franczak,
M. Król (Poland)

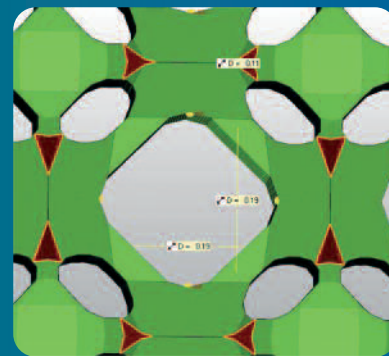


Manufacturing and processing

76. Overview of joining methods of the layered composite with steel

A. Baier, M. Majzner (Poland)

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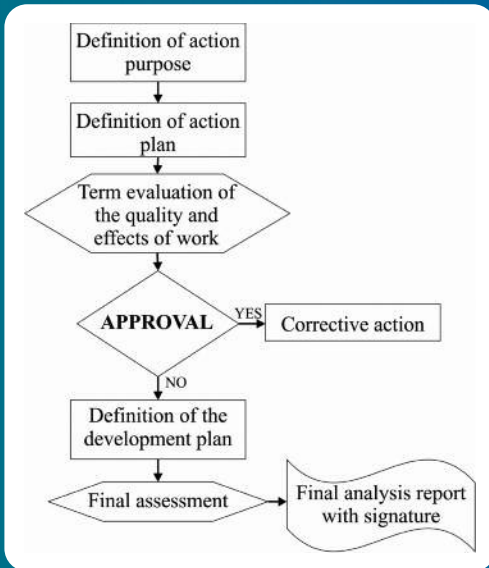


The **Analysis and modelling** section represented by L.A. Dobrzański, A. Achteplik-Franczak, and M. Król on "Computer aided design in Selective Laser Sintering (SLS) – application in medicine" on a **page 66** describes a computer technique (AutoFab software) used for modeling and design elements made from selective laser sintering (SLS) of metal powders belonging to the additive manufacturing (AM) technology. The following paper presents the opportunities which are inherent to the software (AutoFab) for three dimensional computer graphics design-assist of the technology coupled with SLS. With the software, in which we designed the object of interest to us the shape and porosity by controlling the pore size, wall thickness, shape, internal and external structure, we can produce any item of characterized and the interesting properties. The combination of 3D modeling with additive manufacturing technologies provides ample opportunities in various industries. This permits to reduce the time of designing the item until its market. This makes the choice of the path of production becomes more competitive in comparison to traditional methods of manufacturing. The wide interests in this technology (3D design with manufacturing) offers great possibilities in medicine giving, among other things the ability to design and manufacture the implant, the size and shape are customized to the needs of the individual patient. So the used technology makes it easier for surgeons and improve patient comfort.



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In the paper entitled "Overview of joining methods of the layered composite with steel" by A. Baier and M. Majzner on a **page 76** methods how to combine laminate panels with a steel plate is presented. The resulting sample composite panels were assembled with steel plate using two types of joints: with rivets and a rivet nuts. The analysis was carried out using resistance strain gauges. The results will be applied in the application of composite panels in the renovation of freight wagons. Composite panels were produced using the contact method. A series of tests was carried out using a resistive strain gauge. Strain gauges were stuck in the form of a rectangular rosette. In addition, value measurement of application force and deformation at characteristic points will be performed. It was found out that the most significant impact on the ultimate strength of the composite fiber-steel has a diameter of drilled holes in the panels. The use of blind rivets and rivet nuts does not significantly change the mechanical properties combining complex components. The use of blind rivets creates artwork permanently solidified, while the use of rivet nuts allow the exchange of used composite panels, in the case of damage. The paper presents a number of basic research leading to the proposed methods joining composite and steel plate. A number of research, leading to information about the possibilities of use of the above composite materials in the process of repairing of freight wagons. These studies are very important for the application of composite materials in areas such as automotive, ship building and aviation.



85 In the paper entitled "Chosen aspects of human resources management in the machine enterprise directed to the quality" by M. Dudek-Burlikowska on a **page 85** a new approach to human resources management in the machine enterprise directed to the quality is presented. The possibility to create the procedure of employees estimation by an employer and a procedure of self-estimation by a personnel is connected with developing personnel politics in the enterprise. Assurance that employees should have influence on their own job for the development of quality management and conformity to products requirements have been taken into account. At the present time the enterprises should integrate human resources management and quality management, main aims of enterprise and competence for a personnel. Such a kind of strategy will enable to achieve success for these companies. The outworking of a procedure of evaluation of the effectiveness of the actions taken by employees is a very important approach in companies. Today the personnel of enterprise should be conscious of importance of their activity and also should be conscious of being a subject to control by management with use of different methods of estimation. Purpose procedures and forms of estimation of employees in Polish companies have been presented. It helps to define potential of human resources, a necessity of increasing amount of training, skills and competence. These procedures and forms are a proposal of new strategy of human resources activities of all organizations. The example of creating and implementing the procedure of employees estimation by an employer and a procedure of self-estimation by a personnel shows possibility of monitoring human resources in enterprise directed to the quality.

85. Chosen aspects of human resources management in the machine enterprise directed to the quality

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