



Properties

- 7. Analysis of selected utility properties of biomaterials used in coronary stents
W. Jurkiewicz, Z. Paszenda, M. Basiaga, W. Walke (Poland)

- 14. Effect of microstructural banding in hot-work tool steel on thermal expansion anisotropy
B. Pawłowski, P. Bała, R. Dziurka, J. Krawczyk (Poland)



Analysis and modelling

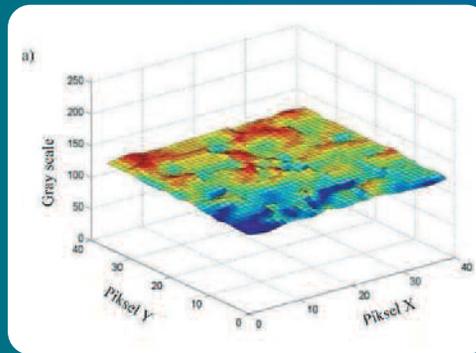
- 20. Relative manufacturing costs of machines elements based on constructional similarity
M. Cielniak, P. Gendarz (Poland)



Manufacturing and processing

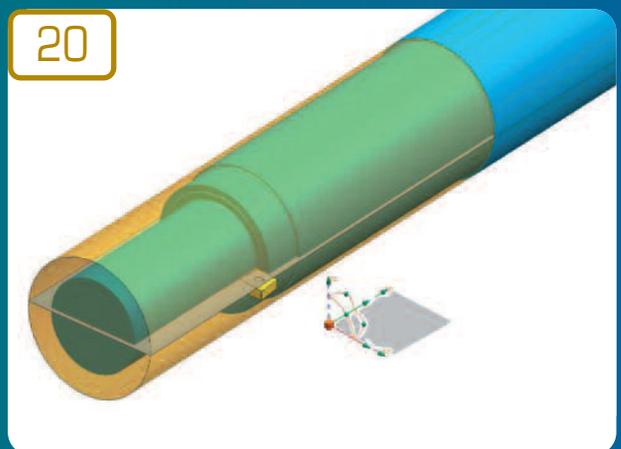
- 29. The effect of boundary conditions of casting on the size of porosity of heavy steel ingot
M. Tkadlečková, K. Michalek, K. Gryc, B. Smetana, P. Machovčák, L. Socha (Czech Republic)

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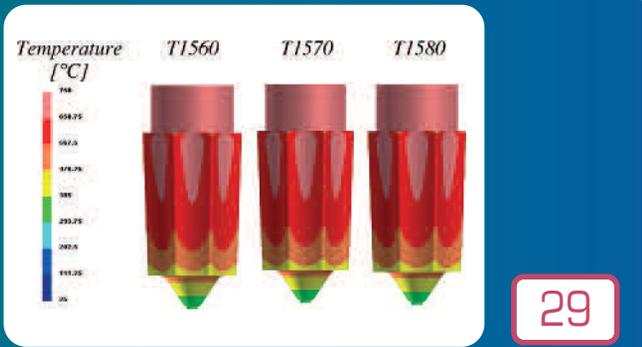


The paper entitled "Analysis of selected utility properties of biomaterials used in coronary stents" by W. Jurkiewicz, Z. Paszenda, M. Basiaga, W. Walke on a **page 7** presents the study of influence of the selected functional properties of metallic biomaterials on selected functional properties of coronary stents used in invasive cardiology. Pitting corrosion resistance tests were performed by means of potentiodynamic method while corrosion resistance tests on the ground of registered anodic polarisation curves and Stern method. The research also comprised galvanic corrosion resistance tests with application of Evans method. Application of Ta layer in composite stents made of Cr-Ni-Mo steel is an effective method used for improvement of their functional properties, and in particular of their fluoroscopic visibility, at the same time decreasing their corrosion resistance. It is of crucial meaning for increasing effectiveness and safety of low-invasive percutaneous transluminal coronary angioplasty. Improvement of fluoroscopic visibility of coronary stents is possible through application of materials with increased X-ray absorptivity for their production. Within this scope a certain form of implant created as a whole from one biomaterial or mixture of two biomaterials (layer implants), on the assumption that one of them features greater X-ray absorptivity can be considered. An application of a middle layer made of tantalum in a composite stent does not influence initiation of galvanic corrosion process but it produces better fluoroscopic visibility that brings forth improved safety of coronary angioplasty.

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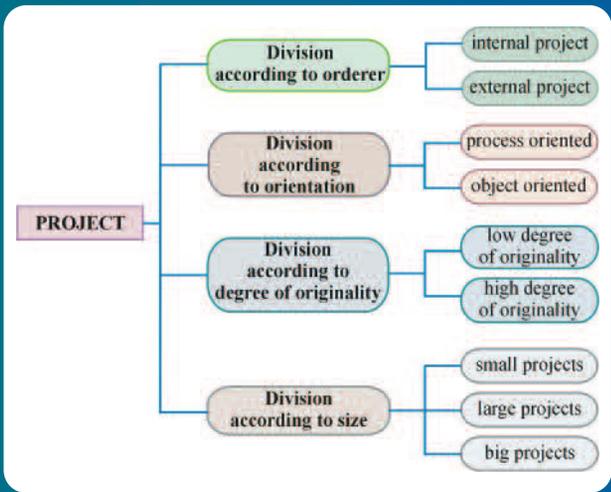


The paper on "Relative manufacturing costs of machines elements based on constructional similarity" by M. Cielniak, P. Gendarz (a **page 20**) shows the analysis of the exponents values assigned to operations in relative manufacturing costs estimation method based on the similarity theory. This method uses exponents assigned to operations which were estimated for such operations as: facing, inner and outer turning; rough, semi-finished and finished ones. The manufacturing process was simulated in CAM module of advanced graphical programme Siemens NX. The application of calculated exponents values can improve the accuracy of manufacturing costs estimation method results and finally this method will help to provide the economic profit of the company.



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M. Tkadlečková, K. Michalek, K. Gryc, B. Smetana, P. Machovčák, L. Socha in the paper "The effect of boundary conditions of casting on the size of porosity of heavy steel ingot" on a **page 29** present new knowledge concerning numerical modelling of porosity in heavy steel ingot using ProCAST software. The main aim of numerical modelling is the optimization of the production of heavy steel ingots produced in the selected company. The numerical modelling of casting and solidification of the 90 ton heavy steel ingot under different boundary conditions of the casting led to the conclusion that in all simulated variants, the final character of solidification was very similar. The lowest level of porosities was achieved in the variant when the longer filling time together with decrease of casting temperatures was used. However, the tested adjustment of casting technology appeared to have only a small impact on the resulting porosity. On the basis of an applied research in close collaboration with industry companies, the obtained data can contribute significantly to the optimization of the operating conditions, thereby increasing the efficiency of the steelmaking technology and final quality of cast steel.



38 In the paper "Projects management in organization on the selected example" on a **page 38** A. Kania, M. Spilka, S. Griner present stages of project management taking into consideration many useful tools and methods. The quality management in the project, the risk estimation, costs of the project realization and many others were discussed. The special attention was given for selected elements of project management in a selected enterprise. Many undertakings cannot be realized without earlier plans. It is very important in a case of big projects. The correct planning and a proper project management bring many advantages for organizations. Very often project management is separated only in a planning stage what does not bring an expected effect. To prevent this it is necessary to create tools containing necessary conceptual, planning, implementation and control actions.



Industrial management and organisation

38. Projects management in organization on the selected example

A. Kania, M. Spilka, S. Griner (Poland)

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