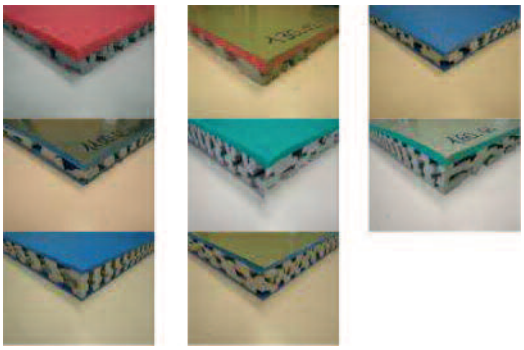
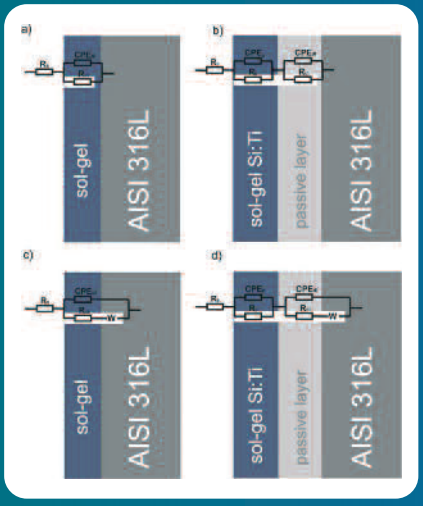
Materials

Properties



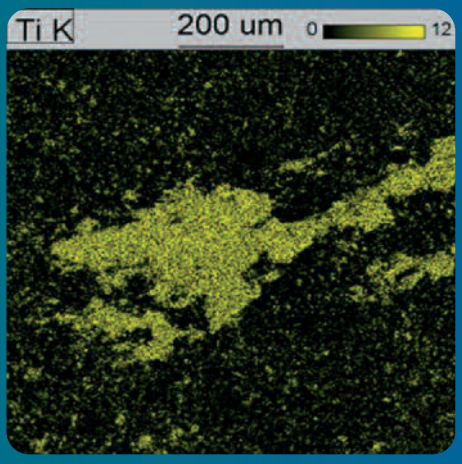
59

G. Costabile, S. Schwanitz, G. Amodeo, M. Martorelli, A. Lanzotti, S. Odenwald in the paper entitled "Toward a new approach for passive safety assessment of gymnastic equipment" on a **page 59** propose a new approach for the assessment of passive safety of gymnastic equipment that allows technicians to optimize the choice of protection devices. Experimental tests on polymer foam materials were performed using cylindrical and hemispherical missiles connected to a flexible impact testing apparatus. Impact tests carried out using cylindrical and hemispherical missiles have shown, for the same impact energy, different acceleration peak values, always greater for a hemispherical missile than a cylindrical one. Considering the procedure, the severity of head impacts, in term of acceleration peak can be underestimated when a cylindrical missile is used. For this reason to assess correctly the head injuries, it is necessary to take into account in addition to the acceleration peak value, also HIC parameter. The new approach proposed in the paper can be useful for the choice of the protective devices to improve the passive safety of gymnastic equipment. It represents a starting point to define new standards.



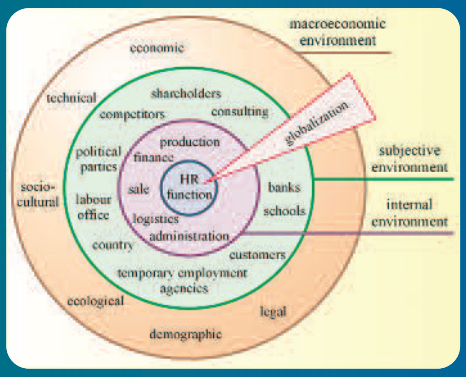
75

"The silica-titania layer deposited by sol-gel method on the AISI 316L for contact with blood" written by W. Walke, Z. Paszenda, P. Karasiński, M. Basiaga on a **page 75** shows the analyses of influence of surface modification of Si:Ti on physical and chemical properties of samples made from AISI 316L steel in solution simulating blood-vascular system. An application of the layer on the surface of samples made of AISI 316L steel was preceded by mechanical working – grinding and mechanical polishing. Corrosion resistance tests were performed on the ground of registered anodic polarisation curves and Stern method. In order to evaluate phenomena that take place on the surface of the tested alloys EIS was also applied. The tests were performed in artificial blood plasma at the temperature of T = 37.0±1°C and pH = 7.0±0.2. Results obtained on the ground of voltammetric and impedance tests showed differentiated electrochemical properties of AISI 316L steel depending on the type of surface treatment. Suggested subject supports development of entrepreneurship sector due to high social demand for this type of technologies and a relatively easy way of putting obtained laboratory tests data into industrial and clinical practice. A suggestion of proper variants of surface treatment with application of sol-gel method is meaningful in future perspective and it shall promote the determination of technological conditions with precise parameters of creation of oxide layers on metallic implants made of AISI 316L steel that come into contact with blood.



83

L. Klimek, E. Wołowiec, B. Majkowska on a **page 83** in the paper entitled "Types of wear and tear of biomaterials used in orthopaedic surgery" concern on the observations on different kinds of wear and tear of biomaterials used in contemporary orthopaedic surgery. Authors describe types of prosthesis damage, encountered in medical practice and results of many clinical studies were analysed to review prosthesis damage from the stage of implanting (such as intrusion of a foreign object between its components) to their natural wear and tear after many years of use (abrasive wear, biological corrosion). Based on results of clinical and laboratory studies, the authors have analysed and described the most common types of damage of components of heads and sockets of hip joint prostheses: abrasive wear, plastic deformations, fatigue wear (pitting), degradation of material (change of its structure and chemical composition), chipping and intrusions, biological corrosion and cracking. It has been shown that prostheses heads may also succumb to quick wear and tear despite being made of harder and more durable materials than sockets. The knowledge of the mechanisms of wear and tear and damage to joint prostheses is extremely important for efforts aimed at extending their life cycle and improving patients' comfort. It must be borne in mind that the prosthesis implanting procedure is often the only chance for patients to regain the ability to move and to live a normal life when their natural joints have failed.



90

A. Kania, M. Spilka in the paper entitled "Evaluation of selected elements of human resources management in organization" presented on a **page 90** propose an evaluation of the most important components of human resources management (HRM) which has a significant impact on increasing of the competitiveness of the company. The procedure of employment and qualification of employees, training, evaluation and dismissal of workers was shown. The implementation of the employees remuneration and motivation systems in the organization were proposed. Results of this action will be the work efficiency improvement, staff mobilizing to achieve the setting objectives, and assurance that employees by adequate motivation and remuneration, will react for the customer needs in a desirable manner. The supplement of HRM system in the organization about two missing elements will ensure improvement of the quality of work carried out and the awareness of the employees for the manner of their remuneration and motivating. As a result of searching and implementation of improvements, the organization makes more attractive, both among the customers and the candidates for the job. Both groups are looking for a reliable partner for cooperation, therefore the implementation of such important elements of HRM as motivation and remuneration systems, increases the interest of the customers in organization and makes it an interesting place to work, even for a very demanding employee. Evaluation of HRM showed that in order to use fully the potential of the company, one should complete the HRM process for additional activities such as remuneration and motivating of the employees. They will have a positive impact on the functioning of the organization and the quality of work of the employed employees.

Industrial management and organisation