



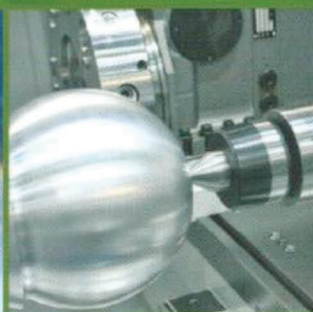
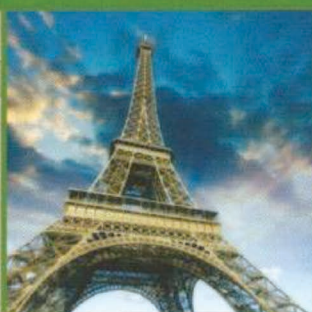
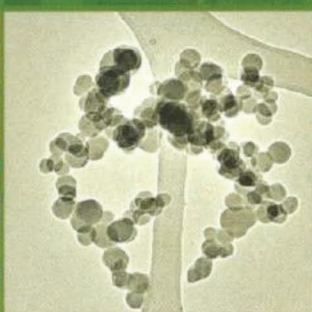
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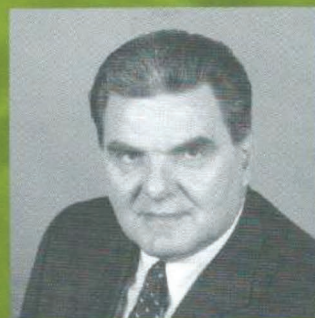
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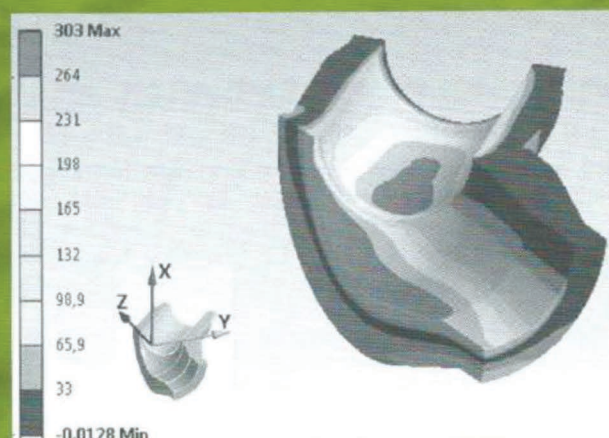
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Dear Readers,

The next issue of Archives of Materials Science and Engineering is ready to hand over to PT Readers. We thank PT Authors, PT Readers, PT Reviewers and all PT Staff for sticking faithfully to our title. I do recommend the scientific papers which we have publish in this issue. We hope that they will be interesting for you. Undoubtedly, the availability of full texts of all papers in the form of open access in the Internet supports the dissemination. I would like to inform that we publish in it as usual a few months after the appearance of the subsequent issue in the printed form. I hope that the reading of this issue will bring you satisfaction. I wish a nice reading and as always encourage PT Authors to publish their papers in next issues of our journal.



J. Okrajni, M. Twardawa in the paper entitled "Boundary conditions in models of power plant components under thermal loading" on a page 28 describe the conditions of fatigue process of power plant components working under mechanical and thermal loading. They focus on the chosen component characteristics. The issue of influence of the heat transfer conditions on the component surface on stresses changes in time was discussed. The FEM modelling method was used to describe the behaviour of the chosen component. The models were validated on the basis of temperature measurements during operation period. The determination of the effects induced by unsteady conditions of start-up and shut-down of installations requires application of unconventional methods of research and analysis of their results. In such a case, a methodology can be applied consisting in combining the methods of computer modelling of temperature fields with temperature measurements in selected points of the component. The method of the chosen component behaviour analysis used in the paper could be useful in the practical cases when the real components mechanical behaviour would be analysed and their fatigue life would be assessed.

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Influence of introducing silver nanoparticles on tribological characteristics of soft liner

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Purpose: of this paper is to assess the influence of introducing silver nanoparticles to the material intended for denture lining on tribological properties of obtained composite and retention properties of elastic friction attachments made of it.

Design/methodology/approach: Studies of coefficient of frictions and forces conducted using a handle designed for this which allows exerting symmetrical pressure through elastomer samples on counterspecimen, applying different pressure forces and relative velocities of friction elements. The study of forces and retention of elastic friction attachments was conducted on the basis of our own methodology in an environment of artificial saliva.

Findings: Results of laboratory tests show that introducing 40 ppm of nanosilver does not influence coefficient of friction values. Simultaneously, some dependencies of coefficient of frictions on pressure forces values were observed, while no dependencies of coefficient of frictions on relative velocities of friction elements were shown. No practically meaningful influence of introducing nanosilver, pressure force or relative velocities of elements on friction force values was noted. Values of retention forces did not depend on the content of nanosilver.

Research limitations/implications: Limitations resulting from the specificity of the conditions of laboratory tests of retention characteristics do not allow to fully translate obtained results to expected results of clinical trials.

Practical implications: The studies show that introducing a small amount of nanosilver to soft lining material will allow to obtain elastic attachments with unchanged retention characteristics, but they will be characterized with increased antimicrobial resistance.

Originality/value: Study results of tribological properties of a new composite were presented. Own methodology of studying coefficient of friction and friction force of silicone rubber was presented here.

Keywords: Biomaterials; Friction; Implant; Silicone Rubber; Nanosilver; Overdenture

Reference to this paper should be given in the following way:

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