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The dependence of viscoelastic parameters of hair on its structure

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Hair is a polymer with a composite structure; that's why its dependence of the total viscoelastic properties on its physical sizes is not surprising. Cross dependencies of the viscoelastic parameters, especially their dependence on the diameter of the hair, allows construction of a viscoelastic model of the hair structure and identify its elements with the anatomical structural parts of the hair, then find the characteristic viscoelastic parameters for these parts. We measured parameters such as activation energy, the work necessary to break the hair, relaxation times, the Young's modulus, the ultimate strength and elasticity. 600 samples of Caucasian women's hair have been measured. The demonstration of dependence between these parameters is itself a valuable finding of this pilot study.

Experimental test machine for durability evaluation of bifurcated endovascular stent-grafts: verification of testing conditions

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Bifurcated endovascular stent-grafts are crucial medical devices for mini-invasive treatment of abdominal aortic aneurysm (AAA). After deployment of stent-grafts into the vessel, it is subjected not only to strongly corrosive environment but also to fatigue. This is due to the cyclic alteration of systolic and diastolic blood pressure in an artery. Proposed paper deals with construction and verification of a machine which is able to simulate conditions in the aorta and thus verify durability of the stent-grafts as a whole. Special attention is dedicated to measurement of the pressure development in a silicone model of the aorta.

The ability of vibrational technique to assess initial fixation of implant

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