In the sphere of obtaining composite materials high temperatures most of the components are thermodynamically nonequilibrium ones, able to undergo different reactions with each other at the phase boundary. Physical-chemical phenomena taking course on the components' boundary surface are rather complex and nowadays studied not well enough. Generally, the accumulation of experimental data on the interaction between the most advanced metals (aluminum, magnesium, nickel, titanium and some others) and fibers – boracic, carbon, glass. But it should be noted that nowadays there is some calm in composite materials studying, and the top of the investigations falls on 70-80s when the majority of the data were got and some theoretical developments were started both in our country and abroad.

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DATA PROCESSING SYSTEM RELIABILITY ANALYSIS BY NETS WITH WINDOWS VISTA OPERATING SYSTEM CONTROLLED COMPUTERS

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The computer network reliability is assured by the whole system of hardware and software tools providing concurrent processing of various privacy information by a user group without access violation. It is especially typical of the Windows Vista operating system, which has an entirely reworked network architecture called to simplify and enhance operational reliability in the net with the help of Vista maximally.

The Windows Vista controlled correctly set network usually works without failures, but problems and errors still spring up. For their detection in the Vista system there are diagnostic aids. The primary diagnostics is performed in the "Network management and public access center" window and in the viewer of the full size net card. If there are network connect problems there will be corresponding graphic symbols. The receiving of more accurate information about the network connection state is seen in the "Network connection state" window, where the key connection parameters IPv4, IPv6, data processing rate are specified, and in the network operation runtime the number of sent and accepted bytes is fixed.

In the "Network connection data" window current values of the TCP/IP key parameters are viewed. When data reduction error rising, the troubleshooting procedure is fired. This program's operating results are reflected in the "Network diagnosis" window, where the list of problems is seen and recommendations on their correction are presented.

The connection ensuring can be executed by the "ping" command. This command lets validate the availability of connections with another computer on its name or IP-address. This is the primary network connection diagnosis asset. The "ping" command causes sending special packets to another computer, which, having got them, sends them back. The packet transit time and message about the packets' being lost is shown in the screen. The connections with a local area network computer and the Internet are controlled by the "ping" command.

The "ping localhost" command sends packets "to itself", that allows checking the TCP/IP work on the local computer. The transit time should be less than 1 msec.

In the "Task manager" window, "Net" tab, the control over the network adapters' work is carried out. There is a list of network connections and their activity graphs, which define the net use intensity and its zero error capacity, here. The detailed analysis of the net adapter work presents more than twenty additional net parameters. The "ipconfig" command reflects the TCP/IP work parameters.

The "tracert" command allows tracing the path from one site to another and detecting the place, where the connection break occurred. In solving complex data processing reliability problems in the network the Windows Vista help system can explain rather extensively and deeply.

The available firewall provides protection from an unauthorized intrusion into the computer network. The firewall is realized both by hardware and software, performing the role of unauthorized users' attempt avoidance to get the access to the connected with the Internet private IP network – especially the intranet. All the messages, which don't meet the specified security criteria, coming from or entering the intranet, are stopped by the firewall. The internetwork security methods including the packet filters and application gateways are a reliable barrier for illegal requests.

The reliability is generally associated with the ideas of stability and system operational safety. It is measured as the function of time taken between failures and is denoted by the term of "Meantime between failures" (MTBF). The database integrity and the possibility of warning about the expected hardware failures are the other two reliability aspects. The SMART (Self-Monitoring, Analysis and Reporting Technology) and RAID systems guarantee the work continuity

and data safety even in the fault case. When loading, the memory self-testing, during which the system of memory error checking and correction (ECC) allows improving the data integrity, should be referred to the reliability augmentation means.

In the wireless local area network media the reliability is influenced, as a rule, by the quality of connection with the remote computer connected in the Internet with the hot spot. There appears a problem in the configuration of connection with the Wide-Area Network in the hot DHCP and NAT spots and in the correctness of binding IP-addresses to the devices, and also the correctness of their conversion into an integrated IP-address used for the connection to the network and for the outlet to the interface of the wire-connected network. Finally the networks aim to achieve the reliability of 99,999%.

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RESEARCH OF AN OPPORTUNITY OF USE POLYMERIC MATERIALS IN DISPOSABLE CONSTRUCTION OF VARIOUS PROTECTIVE BARRIERS

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Annyally in this or that part of the world, including Russia, flooding and forest fires suddenly occur, caused by the various reasons, which cause huge damage the natural and the population. Existing ways of protection against these acts of nature not always lead to desirable result. First of all, it is caused by imperfection of means on struggle against elements. One of major factors of successful struggle against sudden flooding and duly localization of forest fires is time of a construction of protective barriers, such as temporary water-retaining dams and fire-prevention protective contours. Existing technical decisions of similar purpose are expensive enough and labour-consuming at their realization besides demand significant time for a construction of protective designs in extreme situations.

We have investigated an opportunity of use of a light, inexpensive polymeric packing material, which is serially let out by the domestic industry practically in each large city of Russia, in disposable designs of an extreme construction of protective barriers from sudden flooding and for localization of local forest fires, and also emergency spreading burning liquid hydrocarbons. Ways of a construction of various purpose protective barriers which are used in designs of the water-filled polymeric casings are patented in the Russian Federation. Realization of these ways in practice will allow to reduce considerably expenses and time of a construction of protective barriers in extreme situations, it will essentially raise efficiency of struggle against acts of nature, such as sudden flooding and forest fires, and also will raise efficiency of liquidation consequences of technogenic failures.

Working capacity of temporary water-retaining dam constructions made of water-filled polymeric casings and contours of protective barriers for localization local forest fires, and also emergency spreading burning liquid hydrocarbons, made of the permeable water-filled polymeric casings has been checked up experimentally on full-scale fragments and has yielded encouraging results.

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TRIFOCAL DIFFRACTIVE-REFRACTIVE INTRAOCULAR LENS – FIRST RESULTS

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The natural human eye-lens makes possible to see sharply at any distance within the diapason from the infinity to 20-25 cm on account of accommodation – that is the curvature change of its refractors. An artificial crystalline humor (intraocular lens), implanted instead of the one lost its transparence because of the natural eye-lens's cataract, cannot provide such a possibility so far. In an elementary variant an intraocular lens represents a monofocal lens performing a sharp image of objects located in a certain fixed distance in the retina. It is usually either at a short distance (book reading) or far – electively. For seeing at other distances the eyeglass correction is needed. For partial compensation of this disadvantage nowadays more constructively complex (and, naturally, more expensive) bifocal intraocular lenses, making possible to see sharply at all distances, are produced and implanted. Both refractive lenses, forming the image in accordance to the laws of geometric optics, and diffractive-refractive ones, in which the focusing with the help of a diffractive relief in one of the lens's surfaces in combination with the refraction in the other one is used for the image formation, can be bifocal. In the first instance the bifocality is achieved either on account of various curvature of the refractive surfaces or on account of the refraction factors' diversity at various radial distances from the lens's center. In the second instance the bifocality is achieved on account of the fact that there can be several diffraction maximums promoting a sharp image. The sample of the bifocal refractive intraocular lens is the "Gradiol" lens