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D.M. Skudnev, A.P. Shibanov. THE GENETIC ALGORITHM OF STRUCTURED CABLE SYSTEM OPTIMIZATION

Key words: computer networks, structured cable system, genetic algorithm, Ethernet, optimization.

The genetic algorithm of structured cable system channels and optimal load balancing and SCS bandwidth reservation for Ethernet network determination is offered. Computer program of algorithm implementation is developed. Abilities of its application for Ethernet network quality indexes improvement are observed3

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Key words: bispectral analysis, radio reflexions from a ground surface, detection of low Doppler target.

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Key words: mass service system, communication net efficiency estimating indexes, communication network efficiency.

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Key words: autonomous control algorithm, combined quality criterion, flight trajectory, interfering factors, Bellman equation, weight ratios, transverse acceleration.

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Key words: transformer equipment, seismic influence, response spectrum, vibration stability, testing, measuring and control, measuring systems.

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Key words: active sonar, sonar image, simulation, modeling, data processing algorithms.

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Key words: signal occurrence voltage, signal maintenance voltage, signal occurrence delay time, brightness, statistical methods of measurement, error, limiting parameter values.

Various methods of gas-discharge indicator parameter measurement were investigated at various modes of operation. The purpose of research is the reception of valid gas-discharge indicator characteristics (signal occurrence voltage, signal maintenance voltage, signal occurrence delay time, brightness). The mathematical model is developed and methods of gas-discharge indicator parameter measurement with a demanded error of measurement are shown. The results will be used in the development of new gas-discharge indicators working in a wide range48

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Key words: fuzzy object clustering, FCM- algorithm, PCM- algorithm, interval type-2 fuzzy sets, fitness function.

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Key words: modelling, geoinformational systems, algorithm, railways, aerial contact wire, program.

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Key words: database, access control, access model, query optimization, DBMS.

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Key words: remote access, distance education.

The main approaches and features of remote access implementation of students, contributors, developers to probe, atomic-force and electronic microscopes for nanoparticles diagnostics and complex analysis are given, nanostructured and nanomodified materials are described. The structure of an information system for interaction with remote users and remote experiment realisation sequence is presented 70

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Key words: solar cell, barrier layer capacitance.

Features of barrier capacity definition with the help of capacitive-ohmic divider method used for discrete diodes with reference to silicon monocrystal solar cells are considered. A small value of solar cells differential resistance is proved to lead to incorrect results of calculation. The correct formula for barrier capacity calculation is deduced and conditions of its applicability are stipulated. The value of junction specific capacity in a range of reverse bias (0,05 – 4) V is established to make (945 – 350) pF/mm²..... 75

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Key words: condens, electrodes, contact, phase, material, energy, potential.

The capacitor having the electrodes with different electron work function having the surfaces $e\phi_1$ and $e\phi_2$ is investigated. This capacitor possesses its own electrical energy for neutral electrodes and loses free energy after charging the electrodes to the value of $\Delta U = e\phi_1 - e\phi_2$ because of electrode locking. The potential difference on the boundary of neutral electrodes at the locking moment is supposed to be equal to the electron connection difference in electrodes, in the period of charged state the total potential difference on the boundary is equal to zero.....78

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Key words: reed switch, barrier layers, electrolytic alloy.

Electroplated coatings for contact systems using barrier layers based on copper-nickel, cobalt-tungsten and nickel-molybdenum alloys are viewed. In the paper, electroplated coatings as applied to magnetically operated contacts (reed switches) containing barrier antidiffusion layers on basis of Cu-Ni, Co-W и Ni-Mo alloys applied as sublayer for gold, ruthenium and gold alloys, have been investigated. Barrier layers application has allowed to advance anti-erosion characteristics of the coating, to increase reed switch capacity at the same dimensions. Barrier layers application not containing precious metals has led to 60-90 % saving of gold in coatings depending on reed switch type.....85

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Key words: solar module, photovoltaic module, encapsulation, polymerization, MMA, EVA.

Interest to a photovoltaic has considerably increased in the world. World production of PV in 2007 reached 3.8 GW. One of the bottlenecks in technological process of manufacturing PV modules is encapsulation process. In this article UV modes for encapsulation by MMA photohardenable polymer compound, reaction speeds, temperatures, shrinkage of polymerization depending on intensity irradiance are investigated. PV modules made on such technology are successfully applied in various stations in a wide range of climatic conditions.....88

K.A. Arushanov, I.A. Zeltser. INSTRUMENTAL AND TECHNOLOGICAL ASPECTS OF REED SWITCH PRODUCTION WITH NANOSTRUKTURIZED CONTACT SURFACES

Key words: reed switch, contact, corrosion, erosion, discharge, ion, plasma, surface.

The comparative tests of MKA-14108 reed switches treated by low and high voltage pulse discharges as well as MKA-14103 reed switches, have been carried out. It was shown that modification of permalloy contacting surfaces by ion-plasma treatment allows to exclude plating and to decrease the prime cost of the devices93

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Key words: quality system, process approach, level differentiation process model, additional professional training.

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Key words: system of quality management, monitoring, estimation of satisfaction, consumer, constant perfection, organizational environment.

The way of improvement and development of enterprise quality management system is offered by means of enterprise internal consumers satisfaction estimation. The given kind of activity in management of the enterprise organizational environment is caused by the necessity of understanding of consumers internal needs for their further transformation in the system of interconnected and cooperating processes, aimed to increase competitiveness of goods produced..... 103

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Key words: management system, quality management, quality management system, quality management instruments, criteria of quality management system elements functioning.

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BRIEF REPORTS

S.N. Buzykanov. TASK OF RESTORATION TO THE IDEAL DEVICE IN THE MODIFIED SOBOLEV SPACE

Key words: restoration to the ideal device, incorrect tasks, modified Sobolev space W_2^1 , image digital processing.

The task of the restoration to the ideal device at signal processing in the modified Sobolev space is analyzed. A system structure chart is offered and a digital algorithm is justified allowing to decrease distortion effect in processing channels comparing to similar systems in L_2 space. The gain for simulated systems is shown to make 1.5...7 times. 110

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Key words: reed switch, contact coating, MDP, contact detail, sensor.

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Key words: remote access, experiment control.

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