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Gandja S.A. (South Ural State University)

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Key words: spacecraft, mathematical model, computer simulation, elastic vibrations, attitude control system, stabilization.

Khromov A.V. (JSC «VNIIEM Corporation»)

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Trifonov Yu.M. (JSC «NIIEM»)

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Key words: small spacecraft, solar arrays, power supply capacity, videodata detail resolution.

Zavvalova O.Yu., Kazantsev Yu.M. (JSC «SPC «Polvus»)

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Key words: flywheel motor, dynamic moment, forecasting, power circuit current pulse component, spacecraft pointing system.

ELECTROMECHANICS AND SOCIOECONOMIC DEVELOPMENT OF THE COUNTRY

Zuykov A.A. (JSC «VNIIEM Corporation»)

Shulepov A.V. (FGBOU VPO MSTU «STANKIN»)

IMPROVING ACCURACY AT MEASURING SMALL-SCALE HOLES BY MEANS OF READING MICROSCOPE BASED

A problem concerning accuracy measurement improvement of small scale optical reading microscopes and difficult to access elements of parts based on digital image of the measuring concerning dictardey measurement information and measuring systems developed on the base of computer-controlled universal reading microscope UIM-21 equipped with image processing digital systems of view finding zone is represented. Results of research of developed methodologies and additional measuring devices for reading microscope, which significantly widen functional capabilities of such instruments, reduce measurement errors, enable to apply optical microscopes for measuring earlier inaccessible monitored elements of parts are represented.

Key words: measuring microscope, error, diffraction, image digital processing, fiber-optic probe.

Karelin A.V. (FSUE TsNIImash) Khiblin I.N. (JSC «VNIIEM Corporation») Amelin L.A. (JSC «NIIEM») STRUCTURAL PECULIARITIES OF SPHERICAL DEPOSITARY OF NOC FACILITY FOR NUCLEAR WASTES DISPOSAL

Essential features of structure and operation of nuclear optical converter (NOC) for disposing nuclear waste are considered.

A strength calculation of the spherical depositary of 15 m radius for 216 barrels with highly radioactive nuclear wastes containing cesium-137 of 4.6-105 Ku. activity is described. The NOC provides a volumetric heat generation of 87 mW in gas and complete electrical power of facility 1 mW at 20°C of water temperature at cooling contour input, 10 atm of gas pressure, and 3 m/s of speed pumping. Key words: nuclear optical converter, cesium-137, radioactive wastes, disposal, heat-carrying agent gas mixture argon nitrogen reacting core sphere.