

# CONTENTS

## **Instrument Engineering, Metrology, Information-Measuring Instruments and Systems**

**Tsepulin V.G., Tolstoguzov V.L., Stepanov R.O., Karasik V.E.** Error Estimation of Measuring Multilayer Film Coating Thickness by Spectral Reflectometry Method ..... 4

**Kolbas Yu.Yu., Tomilin A.V., Ladonkina M.V.** Experimental Error Study of Q-Flex and Si-Flex Accelerometers in Case of Mechanical Vibration ..... 13

## **Informatics, Computer Engineering and Control**

**Zubov N.E., Mikrin E.A., Ryabchenko V.N.** An Approach to Discrete System Identification Based on Matrix Zero Divisors ..... 20

**Korvyakov V.P.** An Algorithm of Binary Tree Encoding with Minimum Redundancy ..... 33

**Gamazov N.I., Novikov V.I.** Simulation of Umbilical Cable of Remotely Operated Underwater Vehicle with *Blender Game Engine* Package ..... 47

**Chernyshov A.V.** Reliability Model for Data Storage on Modern Libraries of Optical Disks United in RAID-6 ..... 65

**Geng Ke Ke, Chulin N.A.** UAV Navigation Algorithm Based on Improved Algorithm of Simultaneous Localization and Mapping with Adaptive Local Range of Observations ..... 76

**Buldakova T.I., Lantsberg A.V., Smolyaninova K.A.** Secure Access to Information using Smart Card ..... 95

## **Physics**

**Belov M.L., Gorodnichev V.A., Alekhin V.A.** Power of Laser Target Signal from Rough Earth Surface in Hazy Atmosphere ..... 107

## **Aviation, Rocket and Space Engineering**

**Belonogov O.B.** Method for Identification of Second-Order Link Parameters with Classical Dry (Coulomb) Friction for Analysis and Synthesis of Nonlinear Dynamic Objects and Control Systems ..... 118

**Voronov E.M., Obolensky Yu.G., Cheglakov D.I.** UAV Adaptive Automatic Control at Rendezvous and Docking Stage in Inflight Refueling ..... 129