

## CONTENTS

### RADIO ENGINEERING AND TELECOMMUNICATIONS

**Kiba E.I., Gubar V.G.**

RESEARCH AND SOLUTION OF DATA TRANSMISSION/PROCESSING PROBLEMS  
IN VR CONTROLLERS.....1

**Kononova I.V., Samus D.V.**

ANALYSIS OF THE OPTION OF IMPLEMENTING AN ENERGY-EFFICIENT SMART  
PARKING BASED ON A WIRELESS SENSOR NETWORK.....6

**Krochak V.I., Yaskiv V.I.**

USING THE LIMITED PROPORTIONAL MODE TO INCREASE  
THE INFORMATIVENESS OF RADIOMETRIC MEASUREMENTS  
WITH THE GEIGER-MÜLLER DETECTOR.....14

**Mogylevych D.I., Sinko V.V., Tykhonov M.V.**

RELIABILITY MODELS OF COMMUNICATION EQUIPMENT WITH COMBINED  
TIME RESERVE.....20

**Sakovych L.M., Gyrenko I.M.**

MINIMIZING THE AVERAGE RECOVERY TIME OF SPECIAL COMMUNICATIONS  
EQUIPMENT WITH MULTIPLE DEFECTS.....25

**Semenov A.O., Stalchenko O.V., Prytula M.O., Donskyi O.V.**

AMATEUR LOW POWER RADIO FREQUENCY COMMUNICATION DEVICE FOR FM RANGE...31

**Tymchenko A.O., Gubar V.G.**

RESEARCH AND SOLUTION OF THE PROBLEM OF HEATER CURRENT CONTROL  
IN THERMOSTATS.....38

**Tymchenko K.O., Gubar V.G.**

A PROBLEM-ORIENTED APPROACH TO THE DEVELOPMENT OF ELECTRONIC WATCHES...46

### INFORMATICS, COMPUTER ENGINEERING AND AUTOMATION

**Abramova A.O.**

DEVELOPMENT OF THE SOFTWARE COMPLEX FOR THE DESIGN  
OF ION-EXCHANGE SYSTEMS OF PURIFICATION OF WASTE WATER IN MATLAB.....51

**Bazhenov V.G., Kalenychenko Y.O., Ratsebarskyi S.S.**

USING NEURAL NETWORKS FOR DETERMINATION OF HARDNESS OF STEEL SAMPLES  
WITH A STRUCTURESCOPE BASED ON HIGHER HARMONICS.....58

**Bezugla N.V., Yakovenko I.O., Filippova M.V., Poluektov S.O.**

AUTOMATED SYSTEM FOR PHOTOMETRIC IMAGES PROCESSING OF SCATTERING SPOT...64

**Byshevets H.A., Furtat S.O., Furtat O.V., Vyshemirska Ya.S.**

PROSPECTIVE WAYS OF AUTOMATING BUSINESS PROCESSES IN SMALL BUSINESS.....72

**Boun V.P., Bahan T.H.**

VENTILATION AND AIR CONDITIONING SYSTEMS FOR A HOSPITAL WARD.....77

**Bouraou N.I., Zolotarov Ye.O.**

SYSTEMS OF VISUALIZATION OF THE MOVEMENT OF UNMANNED  
UNDERWATER APPARATUS.....83

**Varhanova D.O., Okunkova O.O.**

VISUALIZATION OF THE CONCEPTS OF IDEAS AND SOLUTIONS, TEAMWORK DURING  
THE ORGANIZATION OF THE EDUCATIONAL PROCESS USING THE MIRO ONLINE BOARD..90

**Hnatchuk Ye.H., Hovorushchenko O.O.**

RESULTS OF THE FUNCTIONING OF INFORMATION TECHNOLOGY TO SUPPORT MEDICAL  
DECISION-MAKING, TAKING INTO ACCOUNT CIVIL LAW GROUNDS .....99

<b>Gorbiychuk M.I., Lazoriv N.T., Kohutiak M.I., Lazoriv A.M.</b> SYNTHESIS OF THE OPTIMAL PARAMETERS OF THE CROSS-CONNECTION COMPENSATOR OF THE AUTONOMOUS CONTROL SYSTEM.....	106
<b>Grishyn M.V., Beglov K.V.</b> ADVANCEMENT OF THE AUTOMATED MONITORING SYSTEM TO REDUCE THE RISK OF CRITICAL DAMAGE TO THE HEAT EXCHANGE SURFACE OF A STEAM BOILER.....	115
<b>Dychka I.A., Tereikovskiy I.A., Didus A.V., Tereikovska L.O., Boyarinova Yu.Ye.</b> ASSESSMENT OF THE EFFICIENCY OF KEYWORD SPOTTING IN VOICE SIGNALS.....	123
<b>Dychka I.A., Tereikovskiy I.A., Korovii O.S., Tereikovska L.O., Romankevych V.O.</b> ASSESSMENT OF THE EFFICIENCY OF MEANS OF RECOGNITION OF THE EMOTIONAL TONE OF TEXT FRAGMENTS.....	130
<b>Dromenko V.B., Pylypenko Yu.M., Kyselov V.B.</b> APPLICATION OF RECURSIVE ALGORITHMS AND FUNCTIONS ACCORDING TO SEVERAL VARIABLES IN THE ORGANIZATION OF CYCLIC PROCESSES.....	136
<b>Dudkin K.V., Irodov V.F., Dubrovskiy S.S.</b> EXPERIMENTAL STUDY OF THERMAL REGIME OF A LOW GREENHOUSE WITH TUBULAR GAS HEATERS ON PELLETS FOR THE CREATION OF A MATHEMATICAL HEATING MODEL .	141
<b>Zabuga A.G.</b> STUDENT PERFORMANCE ASSESSMENT AUTOMATION WITH MATHEMATICAL STATISTICS METHODS.....	146
<b>Zavgorodnii V.V., Zavgorodnya A.A., Bairakovskiy V.V., Koval R.A.</b> DEVELOPMENT OF A METHOD FOR DETECTING SIMILAR SONGS BASED ON THE ANALYSIS OF THEIR SOUND CHARACTERISTICS.....	151
<b>Kravchenko S.M., Suhoniak I.I., Marchuk H.V., Gryshkun Ye.O., Venhlovska Yu.M.</b> UML MODELING OF THE DESIGN PROCESS OF A PUZZLE GAME.....	157
<b>Kulykovska N.A., Timenko A.V., Kostetsky D.V.</b> AUTOMATED ROOM TEMPERATURE CONTROL SYSTEM.....	163
<b>Legeza V.P., Neshchadym O.M.</b> THE PROBLEM OF FUGITIVE INTERCEPTION ON A PLANE IN THE ONE-DIMENSIONAL VECTOR FIELD OF A MOVING FLUID .....	168
<b>Lemeshko A.V., Antonenko A.V., Petryk A.V., Myronov S.O.</b> NEUROMORPHY SYSTEMS AS A TOOL FOR IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE.....	175
<b>Mishura K.A., Pavlovskiy O.M.</b> WAVELET TRANSFORMATION FOR SIGNAL DENOISING IN NI LABVIEW ENVIRONMENT.....	184
<b>Moyseenko O.V., Harasymiv T.G.</b> USE OF GENETIC ALGORITHMS IN OPTIMIZING THE PROCESS OF FORMING COMPUTER SYSTEM SOFTWARE TEST PLANS.....	190
<b>Nikitenko Ye.V., Guida O.G.</b> ARCHITECTURAL FRAMEWORK FOR THE FUNCTIONALIZATION OF MOBILE APPLICATION FOR IOS BASED ON REACTIVE EXTENSIONS.....	197
<b>Onishchenko T.V., Fomina A.M.</b> ANALYSIS OF HEAT MAPS IN MODERN ONLINE SERVICES USABILITY ASSESSMENT OF INTERFACES OF MOBILE APPLICATIONS AND WEBSITES.....	204
<b>Pashkovskiy B.V., Slabinoha M.O.</b> MICRO SERVICE ARCHITECTURE IMPLEMENTATION OF THE INTEGRATOR OF THE OPTIMIZATION OF THE NATURAL GAS COMPRESSION PROCESS UNDER FUZZY CONDITIONS.....	212
<b>Savenko B.O.</b> METHOD OF SYNTHESIZING MATHEMATICAL MODELS OF SECURITY LEVELS FOR PARTIALLY CENTRALIZED DISTRIBUTED MALWARE DETECTION SYSTEMS.....	217

<b>Serbul O.M., Kondratets V.O., Didyk O.K., Izovita O.L.</b> OPTIMIZATION OF FORECASTING ACCURACY RATIO ORE/WATER IN A BALL MILL WITH A CIRCULATING LOAD.....	228
<b>Skrypka K.I., Guida O.G., Ometsynska N.V., Lisovets S.M., Yusypiv T.V.</b> REMOTE MONITORING AND MANAGEMENT OF THE ECOLOGICAL STATE OF ENVIRONMENT USING MODERN TECHNOLOGIES OF THE INTERNET OF THINGS.....	233
<b>Fyrikhata D.V., Graf M.S.</b> ANALYSIS OF EXISTING METHODS AND ALGORITHMS FOR INFORMATION PROCESSING IN THE INTERNET SPACE.....	239
<b>INFORMATION ABOUT AUTHORS.....</b>	244