

# CONTENTS

## INDUSTRIAL ENGINEERING

**Petryk V.O., Trubachev S.I., Kolodezhnyi V.A.**

STUDY OF THE CONTACT ZONE IN WIRE POTENTIOMETERS.....1

**Petryk V.O., Trubachev S.I., Kolodezhnyi V.A.**

DETERMINING THE FORCE OF IMPACT OF THE BRUSH ON THE COIL  
IN WIREWIRE POTENTIOMETERS .....7

## RADIO ENGINEERING AND TELECOMMUNICATIONS

**Burkovskiy Ya. Yu., Zinkovsky Yu.F.**

DIGITAL POTENTIOMETER-CONTROLLED PROGRAMMABLE  
INSTRUMENTATION AMPLIFIER.....12

**Demydenko O.A., Lebedev D.Yu.**

VOICE ACTIVITY DETECTION IN LOW-POWER SYSTEMS.....19

**Saiko V.G., Narytnyk T.M., Kryvolapov Ya.V., Kryvolapov H.Ya.**

TRAFFIC OFFLOADING METHOD FOR INTEGRATED NETWORK ARCHITECTURE  
BASED ON LOW-ORBIT SATELLITE COMMUNICATION SYSTEM AND UAV.....24

**Semenov A.O., Pinaiev B.O., Khloba A.A., Shurkhal M.Yu., Olkhovych V.M.**

MULTIBAND GRAPHIC EQUALIZER BASED ON AMPLIFYING STAGES  
WITH THE INCLUSION OF A BANDPASS FILTER IN THE FEEDBACK LOOP.....31

**Sushyn I.O., Butkevych H.Yu.**

METHODOLOGY FOR ASSESSING THE CONNECTIVITY OF WIRELESS SENSOR NETWORK  
NODES WHEN USING A MULTILEVEL NETWORK  
OF TELECOMMUNICATION AEROPLATFORMS.....39

## INFORMATICS, COMPUTER ENGINEERING AND AUTOMATION

**Antoschuk S.H., Ivanova O.M.**

APPROACH TO INCREASING THE VOLUME OF HIDDEN STORAGE OF CONTROL DATA  
FOR MONITORING FPGA COMPONENTS OF COMPUTER SYSTEMS.....47

**Baryshych L.M.**

OVERVIEW OF MIXED STRATEGIES IN STACKELBERG EVOLUTIONARY GAME THEORY  
APPROACH OF POPULATION CONTROL-CASE OF POPULATION GROWTH CONTROL.....54

**Beshley M.I., Pastukh V.A., Beshley H.V., Andrushchak V.S., Klymash M.M.**

DEVELOPMENT OF AN INTELLIGENT MOBILE SYSTEM OF COMPUTER VISION  
AND VOICE CONTROL FOR VISUAL IMPAIRED PEOPLE.....62

**Haitan O.M., Kurylekh A.S., Havrylko D.D.**

GENDER-SENSITIVE ANALYSIS OF THE STATE OF THE IT INDUSTRY IN UKRAINE.....71

**Hladka O.M., Karpovich I.M., Sekh O.B.**

INFORMATION SYSTEM OF THE BUILDING STORE.....78

**Dovbysh I.O., Muraviov O.V.**

THE SWARM LEADER ELECTION ALGORITHM DEPENDENCE  
OF THE UAVS AUTONOMY LEVEL .....84

**Zabolotnyi O.V., Khodieiev A.A.**

WATER-FUEL EMULSION HOMOGENEITY CONTROL SYSTEM.....91

**Kotenko M.M., Vakaliuk T.A.**

THEORETICAL ANALYSIS OF MICROSERVICE COMPONENTS INTERACTION PRINCIPLES...98

**Lisovets S.M.**

RESEARCH OF AUTO-OSCILLATIONS IN THE CONTROL CIRCUIT  
OF THE ELECTROMECHANICAL DRIVE OF THE INDUSTRIAL MANIPULATION ROBOT  
BY POSITION.....107

**Makarova L.M., Latanska L.O.**

COMPARATIVE ANALYSIS OF NONLINEAR REGRESSION MODELS TO PREDICT THE SIZE  
OF WEB APPLICATIONS CREATED IN PYTHON USING THE DJANGO REST FRAMEWORK.....112

<b>Oleshchenko L.M., Trushyna D.V.</b> PREDICTIVE SOFTWARE METHOD FOR REAL ESTATE VALUATION USING MACHINE LEARNING AND REGRESSION ANALYSIS.....	118
<b>Petrosian A.R.</b> ORGANIZATION OF TESTING THE SOFTWARE OF THE ON-BOARD COMPUTER OF AN UNMANNED AERIAL VEHICLE.....	127
<b>Pylypenko Yu.M., Kupryienko P.D., Kyselov V.B.</b> COMPUTER INTEGRATED SYSTEM GROWING OF PLANTS IN A SOILLESS ENVIRONMENT...	132
<b>Ruvinska V.M., Troynina A.S.</b> INFORMATION TECHNOLOGY FOR THE DEVELOPMENT OF TRAINING COMBINATOR GAMES: FIRST STEPS.....	140
<b>Sukhaniuk I.S., Potapova K.R., Nalyvaichuk M.V., Vovk L.B.</b> TEXT SUMMARIZATION BASED ON TOPICRANK METHOD AND TEXT-TO-TEXT TRANSFORMER NEURAL NETWORK.....	147
<b>Temchur V.S., Bahan T.H.</b> PREDICTIVE MAINTENANCE TECHNIQUES USING DEEP LEARNING ALGORITHMS.....	155
<b>Yue Zheng, Robotko S.P., Chenjian Dong, Jianjun Wang, Ravliuk V.V., Topalov A.M.</b> CLOUD-BASED GPS SIGNAL PROCESSING OF THE DRONE USING RASPBERRY PI AND PIXHAWK 6C FLIGHT CONTROLLER.....	163
<b>Chumachenko S.M., Popel V.A.</b> SCIENTIFIC JUSTIFICATION OF THE METHODS OF USING UNMANNED COMPLEXES FOR PREVENTING EMERGENCY SITUATIONS.....	169
 <b>POWER ENGINEERING</b>	
<b>Bezrodny M.K., Teslenko O.I., Prytula N.O., Derii V.O., Slizhevskiy K.D.</b> TECHNICAL BARRIERS TO IMPLEMENTATION OF HEAT PUMPS TECHNOLOGY IN CENTRALIZED HEAT SUPPLY SYSTEMS .....	175
<b>Voloshchuk V.A., Nekrashevych O.V., Bohza M.S., Hikalo P.V.</b> DYNAMIC CHARACTERISTICS OF AN AIR-SOURCE HEAT-PUMP SYSTEM.....	184
 <b>CHEMICAL TECHNOLOGY</b>	
<b>Kryvosheieva V.S., Fedoskina S.V., Kyrlyenko M.I., Maizelis A.O.</b> CONDITIONS OF CU, NI AND ZN CODEPOSITIONATION IN POLYLIGAND ELECTROLYTES.....	193
<b>Spasonova L.M., Subbota I.S., Hotoruk A.Ye.</b> USE OF ASH SLAG TYPES OF THERMAL POWER PLANTS FOR THE PRODUCTION OF BUILDING CERAMICS.....	199
 <b>TECHNOLOGY OF FOOD PROCESSING AND CONSUMER GOODS INDUSTRY</b>	
<b>Sylka I.M., Kryvchyk M.A., Matyiashchuk O.V., Yushchenko N.M., Pavliuchenko O.S.</b> SAFETY AND QUALITY MONITORING SYSTEM OF PREPARATION OF SAUCES-DRESSINGS IN RESTAURANT ESTABLISHMENTS.....	209
 <b>TRANSPORT</b>	
<b>Borovyk S.S., Kravchenko O.A., Steba A.A.</b> PROBLEMS AND PROSPECTS OF THE DEVELOPMENT OF THE EXPORT FREIGHT FLOW OF FERRO-ALLOYS FROM UKRAINE BY MARINE TRANSPORT.....	215
<b>Hrushevska T.M., Strelko O.H., Berdnychenko Yu.A., Karpenko A.A., Soltys I.V.</b> WORLD EXPERIENCE IN ORGANIZING PASSENGER TRANSPORTATION IN RAILWAY TRANSPORT.....	220
<b>Daki O.A., Voichenko T.O., Shtrybets V.V., Mannapova O.V., Riashchenko O.I.</b> ANALYSIS OF THE POSSIBILITY OF USING WAVELET ANALYSIS TO IDENTIFY DAMAGE TO SHAFT DRIVE BEARINGS OF A SHIP'S POWER PLANT.....	225

<b>Daki O.A., Voichenko T.O., Shtrybets V.V., Riashchenko O.I.</b> METHOD FOR CONTROLLING THE TWIN-SHAFT PROPULSION COMPLEX OF HIGH-SPEED VESSELS WITH PARTIALLY SUBMERGED PROPELLERS.....	232
<b>Dolia K.V., Dolia O.Ye.</b> SYSTEMATIC MODELING OF THE FUNCTIONALITY OF ROUTES.....	238
<b>Kyrylova V.Yu., Kyrylova O.V.</b> MAIN TECHNOLOGICAL TRENDS IN THE SPHERE OF INFORMATION SECURE DELIVERY SYSTEMS IN THE ACTIVITY OF TRANSPORT AND FORWARDING COMPANIES.....	244
<b>Melnyk O.M.</b> CORE CONCEPTS OF SAFE HANDLING AND TRANSPORTATION OF ON-DECK CARGO.....	251
<b>Mukovska D.</b> RESULTS OF SIMULATION STUDIES OF THE TRANSPORT AND PRODUCTION SYSTEM OF WASTE RECYCLING IN THE CONDITIONS OF A METALLURGICAL ENTERPRISE.....	258
<b>Petrenko O.I.</b> CONTRAILER CARGO TRANSPORTATION AS A DIRECTION FOR THE DEVELOPMENT OF THE TRANSPORT SYSTEM OF UKRAINE TAKEN INTO CONSIDERATION OF MODERN REALITIES.....	263
<b>Petrov L.M., Kishianus I.V., Verpivskiy S.M., Malinovskiy O.A., Nikishyn V.A., Sheluhin S.V.</b> CONSTRUCTION POSSIBILITIES WITH VARIABLE UNDERCARRIAGE GEOMETRY.....	270
<b>Plita L.L., Ivanenko V.M., Fedunov V.M., Trofymenko I.V.</b> STUDYING THE PECULIARITIES OF DETERMINING THE INTEGRITY OF MODERN INTEGRATED NAVIGATION SYSTEMS.....	275
<b>Plita L.L., Trofymenko I.V., Shevchenko A.P., Ivanenko V.M.</b> STUDY OF THE INFLUENCE OF THE PERMEABILITY COEFFICIENT OF REFRIGERATED CARGO IN CASE OF FLOODING OF THE SHIP'S COMPARTMENT.....	282
<b>Strelko O.H., Hrushevskaya T.M., Berdnychenko Yu.A., Rymsha O.Yu.</b> RESEARCH ON THE PATTERNS OF PASSENGER FLOW FORMATION IN A TRANSPORT INTERCHANGE HUB.....	289
<b>Fomenko H.R.</b> FEATURES OF FORMING THE DEVELOPMENT OF PUBLIC SPACE IN CITIES.....	294
<b>Chymshyr V.I., Tiron-Vorobiova N.B., Šik E., Malyy V.S.</b> CONCEPTUAL APPROACHES TO DECONTAMINATION OF BALLAST AND ITS RESIDUES FROM SLUDGE TANKS OF SEA VESSELS.....	299
<b>CONSTRUCTION</b>	
<b>Chichulina K.V., Shchur-Dunets O.I., Shchur-Dunets O.I.</b> STUDY OF RELIABILITY PARAMETERS OF RIGID NODES OF FRAME FRAMES.....	308
<b>GEODESY</b>	
<b>Hunko I.S.</b> EXPERIENCE OF USING GEOINFORMATION SYSTEM GOOGLE EARTH FOR DIGITAL SITUATION MODELING.....	312
<b>ELECTRONICS</b>	
<b>Arseniuk D.O., Zinkovsky Yu.F.</b> MODEL OF BRIDGELESS TOTEM POLE POWER FACTOR CORRECTOR USING WIDEBAND SEMICONDUCTOR DEVICES.....	317
<b>Lukyanuk S.V.</b> STRATEGIES FOR RENEWABLE PRODUCTION IN THE ELECTRONICS INDUSTRY.....	323
<b>INFORMATION ABOUT AUTHORS.....</b>	331