

17th IFAC Conference on International Stability, Technology and Culture (TECIS 2016)

IFAC PapersOnline Volume 49, Issue 29

Durres, Albania
26 – 28 October 2016

Editors:

**Peter Kopacek
Edmond Hajrizi**

ISBN: 978-1-5108-3505-4

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2016) by Elsevier Limited
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact the publisher, Elsevier Limited
at the address below.

Elsevier Limited
360 Park Ave South
New York, NY 10010

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SMART SOLUTION FOR SMART FACTORY	1
<i>E. Hajrizi</i>	
NOVEL TRENDS IN THE DEVELOPMENT OF AUTONOMATION AND ROBOTICS IN METROLOGY FOR PRODUCTION IN THE FUTURE	6
<i>N. M. Durakbasa, J. M. Bauer, G. Bas, L. Kräuter</i>	
A COMPUTER-SIMULATED ENVIRONMENT FOR MODELING AND DYNAMIC- BEHAVIOR- ANALYSIS OF SPECIAL BRUSHLESS MOTORS FOR MECHATRONIC MOBILE ROBOTICS SYSTEMS	12
<i>Durakbasa Numan, Bauer Jorge M., Alcoberro Rodrigo, Capuano Esteban</i>	
CONTROL OF A COST ORIENTED HUMANOID ROBOT	18
<i>F. D'Apolito, Xh. Mehmeti, P. Kopacek</i>	
ROBOTS FOR EDUCATION (EDUTAINMENT)	24
<i>J. Linert, P. Kopacek</i>	
INVESTIGATION OF EFFECTS (WELDING SEQUENCE, FIXTURING, WELDING POINTS) ON DISTORTIONS AFTER SPOT WELDING FOR DETERMINING INDIVIDUAL AND CUMULATIVE TOLERANCES	30
<i>Cem Yurci, Anil Akdogan, M. Numan Durakbasa</i>	
DEVELOPMENT TRENDS IN ROBOTICS	36
<i>P. Kopacek</i>	
EFFICIENCIES THROUGH THE AUTOMATIC CONTROL OF AGE-PROFILED MANUFACTURING MACHINES: A CASE STUDY OF COST-SAVING IN AN IRISH PRODUCTION FACILITY	42
<i>Mary Doyle Kent, Helen Curtis, Raymond Darcy, Larry Stapleton, Stephen Norton</i>	
COST-ORIENTED INNOVATION METHODS AND EDUCATION IN DEVELOPING COUNTRIES: RE-ENGINEERING INDUSTRIAL PRODUCTION SYSTEMS	48
<i>M. Shala, V. Hoxha, I. Bula, E. Hajrizi, L. Stapleton</i>	
ANALYTICAL CALCULATION OF VEHICLES NOISE IN THE ROAD TRAFFIC AND GRAPHICAL PRESENTATION	52
<i>Azem Kyciku, Shpetim Lajqi, Gëzim Hoxha</i>	
PHOTOVOLTAIC AND MICRO-HYDROELECTRIC PROPOSED PLANT FOR STAND ALONE ELECTRIC GENERATION IN A SIXTY-FLOOR SKYSCRAPER (P60)	58
<i>K. Bylykbashi, R. Capata, R. Cirillo</i>	
SAFETY FROM ASBESTOS EXPOSURE IN KOSOVO	64
<i>M. Dugolli</i>	
SYNCHRONISATION AND CIRCUIT MODEL OF FRACTIONAL-ORDER CHAOTIC SYSTEMS WITH TIME-DELAY	68
<i>Özkan Atan</i>	
REMOTE CONTROL USER INTERFACES FOR SERVICE MOBILE ROBOTS FOR ELDERLY CARE	73
<i>Nayden Chivarov, Nedko Shivarov</i>	
DEVELOPMENT OF A DECISION MAKING GUIDE FOR LOCOMOTION DESIGN FOR IN-PIPE INSPECTION ROBOTS - ONE STEP TOWARDS OPEN INNOVATION IN ROBOTICS	77
<i>Bahadur Ibrahimov</i>	
WALKING TRAJECTORY MODELING OF BIPED ROBOT "ARCHI" FOR STABLE WALKING	83
<i>Xh. Mehmeti, B. Karahoda, P. Kopacek</i>	
TRAJECTORY PLANNING AND INVERSE KINEMATICS SOLVER FOR REAL BIPED ROBOT WITH 10 DOF-S	88
<i>X. Bajrami, A. Dermaku, R. Likaj, N. Demaku, A. Kikaj, S. Maloku, D. Kikaj</i>	
THE SECOND PROTOTYPE DESIGN OF THE UPPER BODY OF ARCHIE	94
<i>Abedin Sutaj</i>	
THE FIRST PROTOTYPE DESIGN OF THE UPPER BODY OF ARCHIE	99
<i>Abedin Sutaj</i>	
3D METAL PRINTING TECHNOLOGY	103
<i>Thomas Duda, L. Venkat Raghavan</i>	
BUILDING A RESPONSIBLE EUROPE - THE VALUE OF CIRCULAR ECONOMY	111
<i>Natalia Kobza, Anna Schuster</i>	

DATA DRIVEN WAVE OF CERTAINTY- A QUESTION OF ETHICAL SUSTAINABILITY	117
<i>Karamjit S. Gill</i>	
APPLIED RELATIONSHIP BETWEEN TRANSPORT AND ECONOMY	123
<i>Ylber Limani</i>	
COMPARISSON OF SOME CHEMICAL PARAMETERS OF URBAN AND INDUSTRIAL WATER DISCHARGES ONTO THE RIVER LUMBARDH OF PRIZREN	129
<i>S. Gashi, Y. Bajmaku, P. Drini</i>	
DEVELOPING AND OPERATING INDUSTRIAL SECURITY SERVICES TO MITIGATE RISKS OF DIGITALIZATION	133
<i>Christoph Jansen</i>	
EDUCATIONAL AND SCHOOL MANAGEMENT PLATFORM	138
<i>A. Dermaku, X. Bajrami, N. Demaku, A. Kikaj, S. Maloku, B. Gashi, S. Sina, B. Demolla</i>	
ENTERPRISE INTEGRATION, NETWORKING AND VIRTUAL COMMUNICATIONS	144
<i>Besnik Qehaja, Ardian Bajraliu, Ahmet Shabani, Edmond Hajrizi</i>	
AN APPROACH TO THE IMPACT OF TRANSFORMATION FROM THE TRADITIONAL USE OF ICT TO THE INTERNET OF THINGS: HOW SMART SOLUTIONS CAN TRANSFORM SMES	148
<i>Blerton Abazi</i>	
SLIDING-MODE OBSERVER FOR IPMSM SENSORLESS CONTROL BY MTPA CONTROL STRATEGY	152
<i>Lindita Dhamo, Aida Spahiu, Mitja Nemec, Vanja Ambrozic</i>	
MODEL REFERENCE NEURAL-FUZZY ADAPTIVE CONTROL OF THE CONCENTRATION IN A CHEMICAL REACTOR (CSTR).....	158
<i>M. Bahita, K. Belarbi</i>	
DYNAMIC ANALYSIS AND CONTROL OF JIB CRANE IN CASE OF JIB LUFFING MOTION USING MODELLING AND SIMULATIONS.....	163
<i>Ilir Doçi, Beqir Hamidi, Shpetim Lajqi</i>	
IMPACT OF TIME RELAY FOR CHANGING OF THE TARIFF ON COMMERCIAL LOSSES AT MECHANICAL METERS	169
<i>Avni Alidemaj, Vehebi Sofiu, Lutfije Dervishi, Arif Vitija, Sadik Latifaj</i>	
AUTOMATION CONTROL ON WATER SUPPLY NETWORKS	175
<i>Sokol Xhafa, Ilir Avdullahu, Muhamet Ahmeti</i>	
DEEP LEARNING VS. WISE LEARNING: A CRITICAL AND CHALLENGING OVERVIEW.....	180
<i>Peter P. Groumpos</i>	
INTELLIGENT DISASSEMBLY OF COMPONENTS FROM PRINTED CIRCUIT BOARDS TO ENABLE RE-USE AND MORE EFFICIENT RECOVERY OF CRITICAL METALS	190
<i>Bernd Kopacek</i>	
SURFACE CHARACTERIZATION OF GLAS FIBERS MADE FROM JAROSITE WASTE USING CONTACT ANGLE MEASUREMENTS	196
<i>Mihone Kerolli-Mustafa, Hazir Çadraku, Afete Musliu</i>	
VARIATIONS IN THE PHYSICO-CHEMICAL PARAMETERS OF UNDER GROUNDWATER OF BLINAJA CATCHMENT, KOSOVO.....	200
<i>H. Çadraku, F. Gashi, A. Shala, O. Fetoshi</i>	
MINIMIZING NON-TECHNICAL LOSSES WITH POINT-TO-POINT MEASUREMENT OF VOLTAGE DROP BETWEEN “SMART” METERS	206
<i>Ines Bula, Valmir Hoxha, Muzafer Shala, Edmond Hajrizi</i>	
COST-ORIENTED OPEN SOURCE AUTOMATION POTENTIAL APPLICATION IN INDUSTRIAL CONTROL APPLICATIONS	212
<i>Valmir Hoxha, Ines Bula, Muzafer Shala, Edmond Hajrizi</i>	
APPLICATION OF COMPLEMENTARY MACHINE-COMPLEX	215
<i>Vehebi Sofiu, Avni Alidemaj</i>	
MODELLING, ANALYSIS AND SIMULATION OF A SPATIAL INTERACTION MODEL	221
<i>Tamara Vobruba, Andreas Körner, Felix Breitenecker</i>	
OPTIMIZATION OF THE BATTERY SCHEDULE FOR RESIDENTIAL MICROGRID APPLICATIONS	226
<i>Galia I. Marinova, Vassil G. Guliashki</i>	
MODELLING AND SENSITIVE ANALYSIS OF THE IMPACT ON TELEMATICS SYSTEM IN VEHICLES	232
<i>Beqir Hamidi, Naser Lajqi, Lindita Hamidi</i>	
MODELLING AND SIMULATION OF THE TURBOCHARGED DIESEL ENGINE WITH INTERCOOLER	237
<i>Lajqi Naser, Doçi Ilir, Lajqi Shpetim</i>	

MODELLING AND ANALYSIS OF NOMINAL CONVEYING ABILITY FOR THE TOOTHED BELT WITH STD PROFILE.....	243
<i>Azem Kyçyku, Ramë Likaj, Begir Hamidi</i>	
PERIMETER DETECTION AND SURVEILLANCE OF POLLUTED AREAS BY ROBOTIZED AGENTS IN A HYBRID WIRELESS SENSOR NETWORK	247
<i>Sevil A. Ahmed, Vasil L. Popov, Andon V. Topalov, Nikola G. Shakev</i>	
FILE FORMATS - CHARACTERIZATION AND VALIDATION.....	253
<i>Lavdërim Shala, Ahmet Shala</i>	
ALTERNATIVE CREATION OF TEXT TO SPEECH TECHNOLOGY FOR THE ALBANIAN LANGUAGE.....	259
<i>Blerand Koshi, Xhevahir Bajrami, Mentor Hamiti</i>	
HYPERCODE: VOICE AIDED PROGRAMMING.....	263
<i>Rinor S. Maloku, Besart Xh. Pllana</i>	
USE OF IOT TECHNOLOGY TO DRIVE THE AUTOMOTIVE INDUSTRY FROM CONNECTED TO FULL AUTONOMOUS VEHICLES	269
<i>X. Krasniqi, E. Hajrizi</i>	
INTERNET OF THINGS AND BIG DATA – THE DISRUPTION OF THE VALUE CHAIN AND THE RISE OF NEW SOFTWARE ECOSYSTEMS.....	275
<i>Norbert Jesse</i>	
HUMAN VALUES AND RELIGION: SEMI-AUTOMATIC HUMAN VALUES SYSTEMS ANALYSIS FOR RELIGIOUS INSTITUTIONAL DIAGNOSTICS.....	283
<i>Larry Stapleton, Dawton Marques</i>	
ENTREPRENEURSHIP LEADING A CHANGE IN EUROPE: A PERSPECTIVE OF YOUNG PROFESSIONALS	289
<i>Natalia Kobza, Cosku Mutlucan</i>	
INTER-ENTERPRISE NETWORKING IN DEVELOPING REGIONS: AN INTERNATIONAL STABILITY PERSPECTIVE.....	294
<i>Ylber Limani, Larry Stapleton</i>	
A NEW CONCEPTION ON THE FUZZY COGNITIVE MAPS METHOD	300
<i>Eleni S. Vergini, Petros P. Groumpas</i>	
COMPARING DISTANCE EDUCATION VERSUS TRADITIONAL EDUCATION IN ENGINEERING MANAGEMENT MASTERS PROGRAM: SAKARYA UNIVERSITY SAMPLE.....	305
<i>F. Celik</i>	
INCREASING PRODUCTIVITY WITH USE OF IT AND IDENTIFYING OWN TRAINING NEEDS.....	310
<i>Besnik Skenderi, Diamanta Skenderi</i>	
THE IMPORTANCE OF GEOGRAPHICAL POSITION OF KOSOVO IN INCREASED TRADE, TRANSIT AND INTERNATIONAL TRANSPORT IN THE BALKANS	315
<i>Ramadan Mazrekaj</i>	
PUBLIC SPACE, PUBLIC INTEREST AND CHALLENGES OF URBAN TRANSFORMATION	320
<i>Binak Beqaj</i>	
STRIVING FOR GLOBAL STABILITY: ESTABLISHING A NEW IFAC AGENDA: PANEL PROPOSAL	325
<i>Amy Stapleton, Larry Stapleton, Petros Groumpas, Norbert Jesse</i>	
Author Index	