

UNIVERSITY OF CRAIOVA

Faculty of Mechanics  
Department of Engineering and Management  
of Technological Systems

4<sup>th</sup> International Conference

**ADVANCES**  
IN  
**ENGINEERING & MANAGEMENT**



**ADEM 2016**  
**Conference Program**



November 17<sup>th</sup> – 18<sup>th</sup>, 2016  
Drobeta-Turnu Severin  
ROMANIA



# Scientific Advisory Committee ADEM 2016

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Mărioara AVRAM	University of Craiova, ROMANIA
Nicolae CRĂCIUNOIU	University of Craiova, ROMANIA

## Program of ADEM 2016

November 16 <sup>th</sup> , 2016	
18 <sup>30</sup> – 19 <sup>00</sup>	Registration - <i>Continental Drobeta-Turnu Severin Hotel</i>
19 <sup>00</sup> – 22 <sup>00</sup>	Welcome Cocktail - <i>Continental Drobeta-Turnu Severin Hotel</i>
November 17 <sup>th</sup> , 2016	
09 <sup>00</sup> – 10 <sup>00</sup>	Registration - Registration Desk, <i>Teodor Costescu Cultural Palace</i>
10 <sup>00</sup> – 11 <sup>00</sup>	Opening Ceremony - <i>Teodor Costescu Cultural Palace</i>
11 <sup>00</sup> – 11 <sup>30</sup>	Coffee Break
11 <sup>30</sup> – 13 <sup>30</sup>	Plenary Lectures - <i>Teodor Costescu Cultural Palace</i>
13 <sup>30</sup> – 15 <sup>00</sup>	Lunch – <i>Continental Drobeta-Turnu Severin, Restaurant</i>
15 <sup>00</sup> – 16 <sup>30</sup>	Oral & Poster Presentations (I) - <i>Teodor Costescu Cultural Palace</i>
16 <sup>30</sup> – 17 <sup>00</sup>	Coffee Break
17 <sup>00</sup> – 18 <sup>30</sup>	Oral & Poster Presentations (II) - <i>Teodor Costescu Cultural Palace</i>
10 <sup>00</sup> - 18 <sup>30</sup>	Technical exhibition - <i>Teodor Costescu Cultural Palace</i>
20 <sup>00</sup> – 24 <sup>00</sup>	Gala Dinner - <i>Taverna Sârbului, Drobeta-Turnu Severin</i>
November 18 <sup>th</sup> , 2016	
09 <sup>30</sup> – 10 <sup>00</sup>	Closing Ceremony
10 <sup>00</sup> – 11 <sup>00</sup>	Sightseeing program, <i>Medieval Fortress of Severin, Port of Severin</i>
11 <sup>00</sup> – 13 <sup>00</sup>	Technical program: S.C.SEVERNAV S.A. Shipyard
13 <sup>00</sup> – 15 <sup>00</sup>	Lunch - <i>Taverna Sârbului, Drobeta-Turnu Severin</i>

# ADEM 2016 – November 17<sup>th</sup>, 2016

## Opening Ceremony – *Teodor Costescu* Cultural Palace

10<sup>00</sup> – 11<sup>00</sup>

*Virgil Ogășanu* Hall

Oana GÎNGU, Chairmain of the Organizing Committee of ADEM 2016 Conference
University of Craiova Staff
Herbert DANNINGER, <i>Doctor Honoris Causa</i> of the University of Craiova
Mehedinti Prefecture, Mehedinti County Council and City Hall Drobeta-Turnu Severin Staff

## Coffee Break 11<sup>00</sup> – 11<sup>30</sup>

## Plenary Lectures - *Teodor Costescu* Cultural Palace

11<sup>30</sup> – 13<sup>30</sup>

*Virgil Ogășanu* Hall

11 <sup>30</sup> – 11 <sup>50</sup>	Oxygen transfer reactions during sintering of ferrous powder compacts	Herbert DANNINGER Technological University of Vienna, AUSTRIA
11 <sup>50</sup> – 12 <sup>10</sup>	New steel combinations produced by the Damascus technique	Susanne STROBL Technological University of Vienna, AUSTRIA
12 <sup>10</sup> – 12 <sup>30</sup>	Qualitative simulation of cranium dynamic loading	Sorin Mihai CROITORU Politehnica University of Bucharest, ROMANIA
12 <sup>30</sup> – 12 <sup>50</sup>	Aspects regarding the collection and removal of rainfall water on landfill final cover	Gheorghe VOICU University Politehnica of Bucharest, ROMANIA
12 <sup>50</sup> – 13 <sup>10</sup>	Integrated CAD/CAM/CAE/PLM solutions	Ionuț NANĂU S.C. INAS S.A, ROMANIA
13 <sup>10</sup> – 13 <sup>30</sup>	New approaches in time period estimation for the ships maintenance works carried out in the shiprepairs shipyards	Emil MANEA Greece Representative Office of Constanta Shipyard ROMANIA

## Lunch – *Continental Drobeta-Turnu Severin*

13<sup>30</sup> – 15<sup>00</sup>

Restaurant

## Technical exhibition - *Teodor Costescu* Cultural Palace

10<sup>00</sup> – 18<sup>30</sup>

*Ștefan POPA POPA'S* Hall

S.C. AgilromScientific SRL Bucharest, ROMANIA
S.C. INAS S.A. Craiova, ROMANIA
S.C. CASA NOASTRA S.A, Pielesti, Dolj, ROMANIA
Standard Service 2000, Bucharest, ROMANIA
S.C. SEVERNAV S.A. Drobeta-Turnu Severin, ROMANIA
Sumitomo Electric Bordnetze Drobeta-Turnu Severin, ROMANIA
S.C. Astra Rail Industries SRL Drobeta-Turnu Severin, ROMANIA
S.C. Forsev S.A. Drobeta-Turnu Severin, ROMANIA
Mehedinti Plateau Geopark, ROMANIA
University of Craiova, Faculty of Mechanics, ROMANIA



## ADVANCED MATERIALS AND PROCESSING TECHNOLOGIES

**Chairman: Herbert DANNINGER, Technological University of Vienna, AUSTRIA**  
**Co-chairman: Gabriela DEMIAN, University of Craiova, ROMANIA**

Oral Presentations: HALL 2

15 <sup>00</sup> – 15 <sup>15</sup>	Obtaining of biopolymer from onion (ALLIUM CEPA L.) used as a binder in metal injection molding process (MIM)	M.G. DUMITRU, C. TEIȘANU, O. GÎNGU
15 <sup>15</sup> – 15 <sup>30</sup>	Morphological and thermophysical behavior of hydroxyapatite and titanium powders mixture during the mechanical alloying processing	I.G.BUCȘE, N. CIOATERĂ, E.A. VOINEA, P. ROTARU, G. SIMA, O. GÎNGU
15 <sup>30</sup> – 15 <sup>45</sup>	Investigation of the pore morphology of the hydroxyapatite-based biocomposites processed by two step sintering	C. TEIȘANU, I. BUCȘE, G. SIMA, O. GÎNGU
15 <sup>45</sup> – 16 <sup>00</sup>	Fracture mechanism in hydroxyapatite-based biocomposites processed by powder metallurgy technology	G. SIMA, I. CINCĂ, C. TEIȘANU, P. ROTARU, O. GÎNGU
16 <sup>00</sup> – 16 <sup>15</sup>	Effects of the wear process on the in-vitro biocompatibility of some nanostructured hydroxyapatite-based composites	J. NEAMȚU, O. GÎNGU, D. COJOCARU, O. GHERMEC, G. SIMA, I. G. BUCȘE, C. TEIȘANU, N. CIOATERĂ, E.A. VOINEA
16 <sup>30</sup> – 17 <sup>00</sup>	<b>COFFEE BREAK</b>	
17 <sup>00</sup> – 17 <sup>15</sup>	Resistance spot welding of some sintered steels	C. NICOLICESCU, V. NICOARĂ, M.O. GUGILĂ
17 <sup>15</sup> – 17 <sup>30</sup>	Morphological and functional characterization of the Al-based foams processed by powder metallurgy-space holder technique	O. GÎNGU, I.G. BUCȘE, G. SIMA, C. TEIȘANU, S. FONTAINE, C. DRĂGUȘIN, N. CIOATERĂ, A. VOINEA

Poster Presentations: Ștefan POPA POPA'S HALL

P01	Analysis of metallic materials using optical coherence tomography	G. HUȚIU, V.F. DUMA, D. DEMIAN, A. BRADU, A. G. PODOLEANU
P02	Advantages and disadvantages of chemical elements contain on the properties of titanium alloys	M. VASILESCU, M. DOBRESCU
P03	Assessment on doping possibilities in titanate pyrochlores	E.A. VOINEA, N. CIOATERĂ, C.I. SPÎNU, A. POPESCU
P04	Comparative RAMAN spectroscopy analysis for biocomposite powders-based feedstocks for subsequent medium pressure injection processing	E.A. VOINEA, A. DIDU, M. STOICESCU, O. GÎNGU

P05	Cutting with waterjet of metallic stratified materials	T. FLEȘER, B. PETROVICI
P06	Solid and liquid-based phenomena during the microwave sintering of the HAP/TI biocomposite nanopowders	V. NICOARĂ, I. G. BUȘE, C. TEIȘANU, A. VOINEA, M. MANGRA, M. PISC
P07	Study about the effect of Cr alloying element on the final properties of WCu system	C. I. PASCU, St. GHEORGHE, C. NICOLICESCU



## MODELING AND SIMULATION

**Chairman: Sorin Mihai CROITORU, Politehnica University of Bucharest, ROMANIA**

**Co-chairman: Daniela COMAN, University of Craiova, ROMANIA**

Oral Presentations: HALL 1

15 <sup>00</sup> – 15 <sup>15</sup>	Mechatronic system for locomotion rehabilitation	N. DUMITRU, A. DIDU, C. COPILUȘI
15 <sup>15</sup> – 15 <sup>30</sup>	Correlation and statistical analysis of vapor-liquid equilibrium data for the system toluene - benzene using GOTHARD model	L. SIMOIU, St. RADU, C.SIMOIU
15 <sup>30</sup> – 15 <sup>45</sup>	Mechanical behavior of a lumbar vertebra reconstructed by biocomposite alloplastic grafts using finite element method	D. COMAN, M. R. GORGAN, F. M. BREHAR, O. GÎNGU, L. GRUIONU
15 <sup>45</sup> – 16 <sup>00</sup>	Finite element analysis of the hybrid radiofrequency/magnetic nanoparticles ablation	D. COMAN, A SĂFTOIU, L. GRUIONU
16 <sup>00</sup> – 16 <sup>15</sup>	Palpation simulation of a liver with tumor using finite element method	D. COMAN, N. BÎZDOACĂ, A. SĂFTOIU, L. GRUIONU
16 <sup>15</sup> – 16 <sup>30</sup>	On the control of a class of continuum robots	M. FLORESCU

Poster Presentations: Ștefan POPA POPA'S HALL

P08	Mathematical modeling of the evolution of human capital at micro and macroeconomic	D. SIMION, D. BERCEANU
P09	Comparative study on treatment bioscouring optimization with and without ultrasound for 50 % of cotton + 50 % of flax materials	M. PUSTIANU, M. DOCHIA, S. GAVRILAȘ, D. TOMESCU
P10	Business marketing, sales and promotion - field receptive to expert systems technology	T. C. VASILE, L. POPESCU, C. I. DĂNIAȘĂ, A. IANCU, V. D. POPESCU
P11	Processing technologies applied for realizing medical micro-devices components	A. V. BÎRDEANU, M. BÎRDEANU, G. GRUIONU, L.G. GRUIONU
P12	Artificial lung phantom for training and testing in bronchoscopy	C. CONSTANTINESCU, I. CONSTANTINESCU, L. GRUIONU
P13	Geometric dynamics used in the study of mechanical methods	D. BĂLĂ

P14	A control algorithm for autonomous electric vehicles by fuzzy logic	V. STOIAN, N. DUMITRU, S. DUMITRU
P15	Studies used in crashworthiness with virtual morphology and the main movements of human cranium – cervical complex simulations	St. CIUNEL, B. TICĂ
P16	FEM modeling of stress distribution and displacement in clayey soils during artificial compaction	N. UNGUREANU, V. VLĂDUȚ, S. Șt. BIRIȘ, G. VOICU, G. PARASCHIV
P17	Reverse engineering technique applied to a human skull: knowing when to compromise	I. A. RAD, M. C. DUDESCU
P18	CAD 3D models: the link between medicine and engineering	I. A. RAD, M. C. DUDESCU



## ENVIRONMENTAL ENGINEERING

Chairman: Gheorghe VOICU, Politehnica University of Bucharest, ROMANIA

Co-chairman: Olimpia GHERMEC, University of Craiova, ROMANIA

Oral Presentations: HALL 3

17 <sup>00</sup> – 17 <sup>15</sup>	Air quality assessment through a multi criteria decision method	L. GRECU
17 <sup>15</sup> – 17 <sup>30</sup>	Visible light photoactivated heterostructures for photocatalytic wastewater treatment	A. ENESCA, C. BOGATU, L. ISAC, D. PERNIU, A. DUȚĂ
17 <sup>30</sup> – 17 <sup>45</sup>	Multi-criteria decision-making tools for selection photovoltaic modules	G. DEMIAN, M. DEMIAN, Șt. RADU, S. DUBOVAN
17 <sup>45</sup> – 18 <sup>00</sup>	Transdisciplinarity - a new vision in forming specialists in the field of environmental engineering. Case study.	O. GHERMEC, E. GAVRILESCU, C. GHERMEC
18 <sup>00</sup> – 18 <sup>15</sup>	Research on terrestrial sequestration of carbon dioxide potential from anthropogenic sources in Mehedinți County	C. GHERMEC, O. GHERMEC, E. GAVRILESCU
18 <sup>15</sup> – 18 <sup>30</sup>	Studies on integrated waste management in Mehedinți County	M. CIOBANU, O. GHERMEC, I. BUCȘE

Poster Presentations: Ștefan POPA POPA'S HALL

P19	Calcium-doped Y-114 layered cobalt perovskite, a promising anodic material for direct methanol fuel cell	V.D. CRAIA-JOLDES, M.L. DAN, D-A. DUCA, N. VASZILCSIN
P20	Ceftriaxone as corrosion inhibitor for nickel in acid solutions	D-A. DUCA, M.L. DAN, N. VASZILCSIN
P21	Sulphite electrooxidation in alkaline media on skeletal nickel based 6 layers platinum nanoparticles electrode	A-F. ENACHE, M. L. DAN, N. VASZILCSIN
P22	Ecological rehabilitation of coal ash dump, essential objective in order to protect the environment	D. ȚUGUI, C. DOBRE, C. COTIGĂ
P23	Considerations regarding environmental aspects of risk management in the oil and gas industry	M. ALBU

P24	Active house - a building that offers more than consumes	M. CĂLBUREANU, R. MALCIU, D. CĂLBUREANU
P25	Conserving biomass in GEOPARK PLATEAU MEHEDINTI	St. DASCĂLU, O. GHERMEC, M. DRĂGOI
P26	The implication of the environmental authorities from Mehedinti County in resolving complaints from citizens regarding sources of noise	V. IACOB



## NAVIGATION AND MARITIME AND INLAND TRANSPORT SYSTEMS

Chairman: Gabriel-Constantin BENGA, University of Craiova, ROMANIA

Co-chairman: Lidia DUBOVAN, University of Craiova, ROMANIA

Oral Presentations: HALL 1

17 <sup>00</sup> – 17 <sup>15</sup>	Identification of gaps in LNG education and training	G-C. BENGA, I. CIUPITU, S. SAVU, A. OLEI
17 <sup>15</sup> – 17 <sup>30</sup>	Structural and constructive analysis of the grab with two cups used in the port and marine area	M. COTRUMBĂ, A. PINTILIE
17 <sup>30</sup> – 17 <sup>45</sup>	Competencies for inland navigation crew of LNG-fueled ships	S. SAVU, G. BENGA, I. CIUPITU, A. OLEI
17 <sup>45</sup> – 18 <sup>00</sup>	Technique of using the "Voyage Planning" concept for the logistic integration of inland waterway transport	M. GHIBA, S. DUBOVAN, L. DUBOVAN
18 <sup>00</sup> – 18 <sup>15</sup>	The RIS key technologies available for the main European inland navigation corridors	A. OLEI, M. GHIBA
18 <sup>15</sup> – 18 <sup>30</sup>	Perfomanced buoys for signaling river navigation	S. DUBOVAN, M. GHIBA, L. DUBOVAN, T. POPESCU
18 <sup>30</sup> – 18 <sup>45</sup>	Computational methods in the study of ship motions on the real sea conditions	M-G. CHIȚU
18 <sup>45</sup> – 19 <sup>00</sup>	Realities in maritime domain regarding cyber security concept	R. ZĂGAN, G. RAICU, R. HANZU-PAZARA

Poster Presentations: Ștefan POPA POPA'S HALL

P27	Education and training focusing on LNG in logistics courses	I. CIUPITU, G. BENGA, S. SAVU, A. OLEI
P28	Transportation on the lower Danube –current issues	I. Dănuț SAVU, I. CIUPITU





## MANAGEMENT AND INDUSTRIAL ENGINEERING

Chairman: Mihai DEMIAN, University of Craiova, ROMANIA

Co-chairman: Claudiu NICOLICESCU, University of Craiova, ROMANIA

Oral Presentations: HALL 3

15 <sup>00</sup> – 15 <sup>15</sup>	Assessment framework for organization's information security	D-I. ANGHELUȚĂ, L-M. LUPU, I-V. HERGHILIGIU
15 <sup>15</sup> – 15 <sup>30</sup>	Structural of complex mechanism of six-speed automatic transmission	D. ANTONESCU, C.BREZEANU, P. ANTONESCU
15 <sup>30</sup> – 15 <sup>45</sup>	Optimization for materials selection and its importance in an performance management	M. DEMIAN, L. GRECU, G. DEMIAN
15 <sup>45</sup> – 16 <sup>00</sup>	Romanian e-commerce trends	S.V. MIROSLAV, M. A-M. POPESCU
16 <sup>00</sup> – 16 <sup>15</sup>	Implementing an online marketing strategy for an it company	M. A-M. POPESCU, S.V. MIROSLAV
16 <sup>15</sup> – 16 <sup>30</sup>	Concurrent rotation movements compounding	M. TROFINESCU, G. FIROUZI, P. ANTONESCU

Poster Presentations: Ștefan POPA POPA'S HALL

P29	Organization and coordination of accounting profession in Romania	M. AVRAM, G.D. AVRAM
P30	Aspects about the quality control at first article inspection (FAI) for parts obtained by materials composites used in the railway sector	C.I. PASCU , ST.GHEORGHE, D. POPA, O. POPA

**Gala Dinner - Taverna Sârbului, Drobeta-Turnu Severin**  
20<sup>00</sup> – 24<sup>00</sup>



**ADEM 2016 – November 18<sup>th</sup>, 2016**

**Closing Ceremony - Continental Drobeta-Turnu Severin**

09<sup>30</sup> – 10<sup>00</sup>

Hotel Conference Room

**Sightseeing program - Medieval Fortress, Port of Severin**

10<sup>00</sup> – 11<sup>00</sup>

**Technical program - S.C. SEVERNAV S.A. Shipyard**

11<sup>00</sup> – 13<sup>00</sup>

**Lunch – Taverna Sârbului, Drobeta-Turnu Severin**

13<sup>00</sup> – 15<sup>00</sup>





**ADVANCES  
IN  
ENGINEERING & MANAGEMENT**

**ADEM 2016**

Organised by:

**UNIVERSITY of CRAIOVA  
Faculty of Mechanics  
Department of Engineering and Management of Technological Systems  
and  
DOLJ COUNTY COUNCIL**

The organizers thank to:

**DROBETA TURNU SEVERIN CITY HALL  
MEHEDINTI COUNTY COUNCIL  
S.C. SEVERNAV S.A  
EVOLUTION DROBETA  
S.C. CASA NOASTRA S.A  
S.C. FERRO-DESIGN S.A.**

**ROMANIAN NAVAL LEAGUE–DROBETA TURNU SEVERIN SUBSIDIARY  
D-L GOE PROD SERV S.R.L DROBETA TURNU SEVERIN  
TELTEU I. NICOLAE INDIVIDUAL COMPANY  
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for support which makes this event possible.