

**8<sup>th</sup> INTERNATIONAL CONFERENCE ON  
MATERIALS SCIENCE & ENGINEERING**

**BRAMAT 2013**

# **PROGRAM**



**28 February – 2 March 2013**

**Transilvania University of Brasov - ROMANIA**

**in cooperation with:**

**Romanian Academy of Technical Sciences - ASTR**

**Association for Heat Treatment and Surface Engineering – ATTIS**

**Romanian Foundry Technical Association – ATTR**

**Romanian Welding Association – ASR**

**8<sup>th</sup> INTERNATIONAL CONFERENCE ON MATERIALS SCIENCE &  
ENGINEERING - BRAMAT 2013**



Transilvania University of Braşov – ROMANIA, 28 February – 2 March 2013  
in cooperation with:



**8<sup>th</sup> International Conference on Materials Science  
& Engineering – BRAMAT 2013**

# **BRAMAT 2013**

**Braşov – ROMANIA  
28 February – 2 March 2013**

Organized by

***Transilvania* University of Braşov, Materials Science and Engineering Faculty  
Romanian Academy of Technical Sciences – ASTR  
Association for Heat Treatment and Surface Engineering – ATTIS  
Romanian Foundry Technical Association – ATTR  
Romanian Welding Association – ASR**

Conference's Partners:

**CSM Instruments, Standard Service, Melt, Nitech, Namicon, Olympus, Zeiss, Sartorom,  
Cobotech, Consiliul Judeţean Braşov**

# **PROGRAM**

### **Conference Steering Committee**

**Daniel MUNTEANU, Conference Chairman**

Vicerector of Transilvania University of Braşov, Romania

**Teodor MACHEDON-PISU**

Dean of Materials Science and Engineering Faculty, Transilvania University of Braşov, Romania

**Albert JANSSEN**

Oerlikon Balzers, Liechtenstein

**Cornel SAMOILĂ**

Romanian Technical Sciences Academy  
Transilvania University of Braşov, Romania

**Doru M. ŞTEFĂNESCU**

The Ohio State University, Columbus, USA

**Sefik SUZER**

Bilkent University, Ankara, Turkey

**Filipe VAZ**

Minho University, Guimaraes, Portugal

### **Conference Local Organizing Committee**

**Mircea ȚIEREAN** - Coordinator

**Bogdan ANDREESCU**

**Liana BALTEŞ**

**Tibor BEDŐ**

**Dorin CĂTANĂ**

**Lucian COSTINESCU**

**Daniel CRISTEA**

**Camelia GABOR**

**Virgil GEAMĂN**

**Vasile JIMAN**

**Teodor MACHEDON-PISU**

**Sorin MUNTEANU**

**Arthur OLAH**

**Alin POP**

**Maria STOICĂNESCU**

**Ana VEȚLEANU**

### **Conference Sections**

**I. Equipment and Technologies in Materials Engineering**

**II. Materials Science**

**III. Heat Treatment and Surface Engineering**

**IV. Advanced Welding Eco-Technologies**

**V. Safety, Modeling and Simulation in Materials Engineering**

## **International Advisory Committee**

**Horia ALEXANDRU**, University of Bucharest, Romania  
**Marian BORDEI**, Dunarea de Jos University, Galați, Romania  
**Vasile BRATU**, Valahia University, Târgoviște, Romania  
**Denis CHAUMONT**, Université de Bourgogne, France  
**Ionel CHICINAȘ**, Technical University of Cluj-Napoca, Romania  
**Aurel CRIȘAN**, Transilvania University of Brașov, Romania  
**Luis CUNHA**, Universidade do Minho, Portugal  
**Dorin DEHELEAN**, European Welding Federation  
**Leontin DRUGĂ**, UTTIS, Bucharest, Romania  
**Anca DUȚĂ CAPRĂ**, Transilvania University of Brașov, Romania  
**Dan ELIEZER**, Ben-Gurion University of Negev, Beer Sheva, Israel  
**Radu IOVĂNAȘ**, Transilvania University of Brașov, Romania  
**Julia Claudia MIRZA ROȘCA**, Universidad Las Palmas de Grand Canaria, Spain  
**Strul MOISA**, Ben-Gurion University of Negev, Beer Sheva, Israel  
**Cacilda MOURA**, Universidade do Minho, Portugal  
**Corneliu MUNTEANU**, Gheorghe Asachi Technical University, Iași, Romania  
**Mircea NICOARĂ**, Polytechnic University Timișoara, Romania  
**Maria NICOLAE**, Polytechnic University of Bucharest, Romania  
**Jose Luis OCANA MORENO**, Universidad Politécnica de Madrid, Spain  
**Mihai POPESCU**, National Institute R&D of Materials Physics, Bucharest, Romania  
**Peter REM**, Delft University of Technology, The Netherlands  
**Iulian RIPOȘAN**, Polytechnic University of Bucharest, Romania  
**Mario ROSSO**, Politecnico di Torino, Italy  
**Alexander SCHREINER**, Münchner Werkstofftechnik Seminare, Germany  
**Costin SCORȚEA**, Romanian Metallurgy Foundation, Bucharest, Romania  
**Elena SCUTELNICU**, Dunarea de Jos University, Galați, Romania  
**Viorel ȘERBAN**, Polytechnic University Timișoara, Romania  
**Ioan VIDA-SIMITI**, Technical University of Cluj-Napoca, Romania  
**Petrică VIZUREANU**, Gheorghe Asachi Technical University, Iași, Romania  
**Ionelia VOICULESCU**, Polytechnic University of Bucharest, Romania

## **Conference's Halls:**

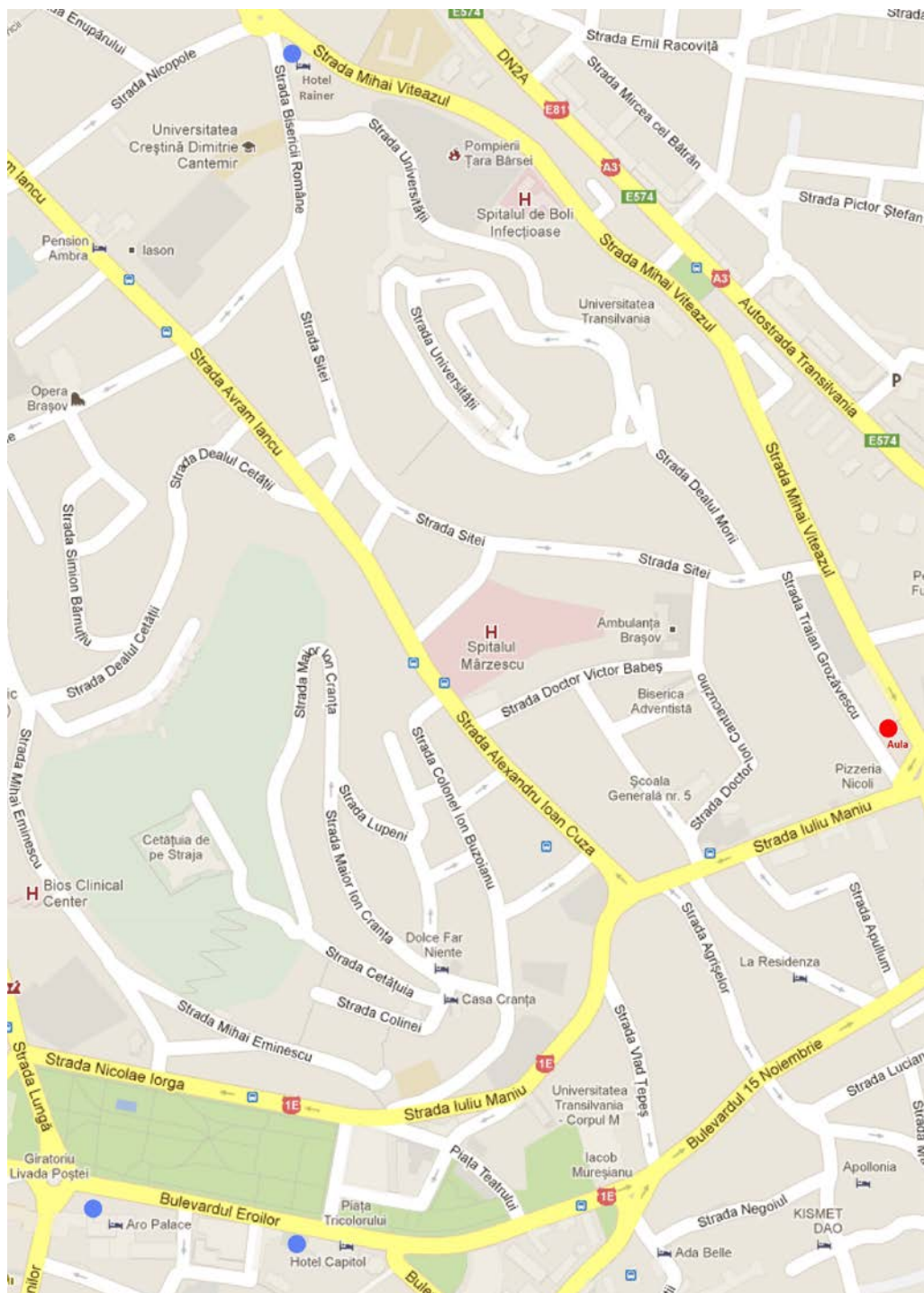
**Main Hall A** – Aula, Iuliu Maniu str. 41A  
**Hall B** – Room UI 2, Iuliu Maniu str. 41A  
**Hall C** – Room UI 3, Iuliu Maniu str. 41A  
**Hall D** – Room UI 6, Iuliu Maniu str. 41A  
**Hall E** – Room UI 7, Iuliu Maniu str. 41A  
**Hall F** – Room UII 3, Iuliu Maniu str. 41A  
**Hall G** – Ground level, Iuliu Maniu str. 41A  
**Hall H** – First level, Iuliu Maniu str. 41A



## Conference Venue

**Braşov** is situated in the central part of the country being considered the second most important town in Romania. Located 160 km from Bucharest (Romania's capital), Braşov is surrounded by the Carpathian Mountains, being in the middle of the country at the crossroads of the Eastern Carpathian and the Southern Carpathians. Across the mountains to the South and East there are Wallachia and Moldavia, to the West the Banat region and to the North the rolling hills of Northern Transylvania.

The 8<sup>th</sup> International Conference of Materials Science and Engineering – BraMat 2013, will be held at Sergiu T. Chiriacescu Aula, Iuliu Maniu str. 41A, Braşov.



## Program (Outline)

### Wednesday, 27.02.2013

- 18.00: Registration**
- 18.30: Welcome cocktail (hall H)**

### Thursday, 28.02.2013

- 8.30: Registration**
- 9.00: Opening ceremony**
- 9.30: Plenary lectures I**
- 10.30: Coffee break**
- 11.00: Awarding the title "Professor Emeritus" to Professor Dr. Eng. Cornel SAMOILĂ**
- 12.30: Plenary lectures II**
- 13.30: Lunch (hall H)**
- 15.00: Plenary lectures III**
- 16.00: Coffee break**
- 16.30: Plenary lectures IV**
- 17:30: Posters presentations I (Sections I, II, III, IV)**
- 17:30: Workshop "Education and Research in Materials Engineering - Present and Perspectives"**
- 10.00 - 16.00: Companies Workshops**
- 10.00 - 19.00: Exhibitions**
- 20.00: Gala dinner (ARO night bar)**

### Friday, 1.03.2013

- 9.00: Oral presentations I (Sections I, II, III, IV, V)**
- 11.00: Coffee break**
- 11.30: Oral presentations II (Sections I, II, III, IV)**
- 12.00 - 13.00: Companies Workshops**
- 13.30: Lunch (hall H)**
- 15.00: Posters presentations II (Sections I, II, III, V)**
- 9.00 - 17.00: Exhibitions**
- 17.30: Concert, celebration of the Transilvania University Day**
- 19.00: Goodbye cocktail (hall H)**

### Saturday, 2.03.2013

- 9.00: Sightseeing program meeting, Iuliu Maniu str. 41A, Braşov**
- 9.30: Visit of R&D Institute of Transilvania University**
- 11.00: Visit of Râşnov fortress and cave**
- 12.00: Visit of Bran castle**
- 13.00: Picnic in Bran**

## Program (detailed)

### **Thursday, 28.02.2013**

8.30: Registration

#### **Main Hall A**

9.00: Opening Ceremony

- Welcome messages,

Professor Dr. Eng. **Ioan Vasile ABRUDAN**, Rector of Transilvania University of Braşov, ROMANIA

Professor Dr. Eng. **Daniel MUNTEANU**, Vicerektor of Transilvania University of Braşov, ROMANIA

Eng. **Bogdan CHESARAICU**, Manager Standard Service Bucharest, ROMANIA

#### **Main Hall A**

9.30: Plenary Lectures I:

*Chairperson: Daniel MUNTEANU*, Transilvania University, Braşov, ROMANIA

#### **P.01. Thin films composed of gold nanoclusters dispersed in a TiO<sub>2</sub> matrix for electrical and thermal devices applications**

*Filipe VAZ, Luis Cunha, Francisco MACEDO*, Physics Department, University of Minho, Braga, PORTUGAL

*Albano CAVALEIRO*, Departamento Engenharia Mecanica, SEC-CEMUC, Universidade de Coimbra, Coimbra, PORTUGAL

*Bruno BEIN*, Ruhr-University Bochum, GERMANY

#### **P.02. High temperature resistant coatings for nuclear fusion applications**

*Cristian RUSEȚ, Eduard GRIGORE*, National Institute for Laser, Plasma and Radiation Physics, Bucharest, Euratom-MEdC Association, ROMANIA

*Hans MAIER*, Max-Planck Institut für Plasmaphysik, Euratom Association, 85748 Garching, GERMANY

*Guy MATTHEWS*, Culham Centre for Fusion Energy, Euratom Association, Abingdon, UK

#### **10.30: Coffee Break**

#### **Main Hall A**

11.00: Awarding the title "Professor Emeritus" to Professor Dr. Eng. Cornel SAMOILĂ

#### **Main Hall A**

12.30: Plenary Lectures II:

*Chairperson: Julia Claudia MIRZA ROSCA*, University Las Palmas of Gran Canaria, SPAIN

#### **P.03. Microwave chemistry for nanoparticle synthesis**

*Denis CHAUMONT*, Nanoform ICB, University of Burgogne, FRANCE

#### **P.04. Chalcogenide glasses for photonics**

*Mihai POPESCU, Alin VELEA*, National Institute of Materials Physics, Magurele, Bucharest, ROMANIA

#### **13.30: Lunch**

## Main Hall A

15.00: Plenary Lectures III:

*Chairperson: Filipe VAZ, University of Minho, Braga, PORTUGAL*

### **P.05. Mechanical properties of animal bone in orthopaedic research**

*Julia Claudia MIRZA ROSCA, University Las Palmas of Gran Canaria, SPAIN*

### **P.06. Medical coating innovation: Antimicrobial PVD TiN**

*Carmen PIÑERO, Albert JANSSEN, Gabriella SINICCO, OC Oerlikon Balzers AG, Balzers, LICHTENSTEIN*

*Andrea EWALD, University Hospital of Wuerzburg, Wuerzburg, GERMANY*

**16.00: Coffee Break**

## Main Hall A

16.30: Plenary Lectures IV:

*Chairperson: Denis CHAUMONT, Université de Bourgogne, Dijon, FRANCE*

### **P.07. Complex treatment of electric melt grey cast iron**

*Iulian RIPOȘAN, Politehnica University of Bucharest, ROMANIA*

### **P.08. Mechanism of relaxation and characteristic time in ferroelectric TGS crystal**

*Horia ALEXANDRU, Carmen MÎNDRU, Faculty of Physics, University of Bucharest, ROMANIA*

*Constantin Paul GANEA, Raluca Maria BACȘEI, National Institute of Materials Physics, Bucharest-Magurele, ROMANIA*

## Hall G

17.30: Posters presentations I

## Section I

### **I.P.1. Graphite morphology in grey iron – sulphur and oxygen effect**

*Denisa Elena ANCA, Mihai CHIȘAMERA, Politehnica University of Bucharest, ROMANIA*

### **I.P.2. Preliminary study about mineralogical resources of iron ore in Kirunavaara in the context of sustainable development of metallurgical industry**

*Dan CONSTANTINESCU, Ecaterina MATEI, Adriana Beatrice CÂRLAN, Politehnica University of Bucharest, ROMANIA*

### **I.P.3. Surface structure of CoCrMo and Ti6Al4V parts obtained by selective laser sintering**

*Veronica DESPA, Adrian CATANGIU, Dan Nicolae UNGUREANU, Ioan Alexandru IVAN, Valahia University of Targoviște, ROMANIA*

### **I.P.4. Design of the user interface for a robotic system used in the spray pyrolysis deposition of planar surfaces**

*Monica ENESCU, Cătălin ALEXANDRU, Transilvania University of Brasov, ROMANIA*

### **I.P.5. Chill sensitivity in 4.0% carbon equivalent, low – S, inoculated grey iron thin wall castings**

*Lavinia Marilena HARCEA, Iulian RIPOȘAN, Politehnica University of Bucharest, ROMANIA*

### **I.P.6. Research on the influence of cooler type on mottled cast iron solidification**

*Vasile JIMAN, Ioan CIOBANU, Sorin Ion MUNTEANU, Tibor BEDŐ, Daniel FERARU, Transilvania University of Brasov, ROMANIA*



**I.P.7. 3D mathematical modelling of solidification of castings from alloys solidifying within a temperature interval**

*Daniela IONESCU, Ionuț IONESCU, Ioan CIOBANU, Vlad MONESCU, Transilvania University of Brasov, ROMANIA*

**I.P.8. Heat-resistant composite materials**

*Simona MATEI, Aurel CRIȘAN, Transilvania University of Brasov, ROMANIA*

**I.P.9. Ultra-high molecular weight polyethylene – UHMWPE behaviour in injection molding processes**

*Leonard Gabriel MITU, Ileana Constanța ROȘCA, Transilvania University of Brasov, ROMANIA*

*Santiago FERRANDIZ BOU, Polytechnic University of Valencia, SPAIN*

**I.P.10. Experimental research concerning the plastic materials behaviour in medical engineering**

*Leonard Gabriel MITU, Ileana Constanța ROȘCA, Gheorghe BEJINARU MIHOC, Transilvania University of Brasov, ROMANIA*

*Santiago FERRANDIZ BOU, Polytechnic University of Valencia, SPAIN*

**Section II**

**II.P.1. Studies on obtaining a precursor by mechanical alloying for developing type W barium ferrite**

*Sandu DUBOVAN, Mihai DEMIAN, Lidia DUBOVAN, Gabriela DEMIAN, University of Craiova, ROMANIA*

**II.P.2. Composite materials reinforced with fibers used in strengthening heritage buildings**

*Gheorghe-Veniamin BOGUS Vasile CONSTANTINESCU, Oana BĂLȚĂTESCU, Adrian ALEXANDRU, Ioan CARCEA, Gheorghe Asachi Technical University of Iași, ROMANIA*

**II.P.3. Selecting medical grade polymers and testing for achieving antibacterial devices tubular prosthetic**

*Elena GROȘU, Maria RAPA, Grigore VLAD, S.C. ICPE BISTRITA S.A., Bistrița, ROMANIA*

*Anton FICAI, Politehnica University of Bucharest, ROMANIA*

*Luiza JECU, National Research and Development Institute for Chemistry and Petrochemistry, ICECHIM Bucharest, ROMANIA*

**II.P.4. Characterization of surfactant-modified prussian blue screen-printed carbon electrodes for H<sub>2</sub>O<sub>2</sub> detection**

*Florentina HUTANU, Ștefan cel Mare University of Suceava, ROMANIA, National Research and Development Institute for Chemistry and Petrochemistry, ICECHIM Bucharest, ROMANIA*

*Emilia OCNARU, Melania-Liliana ARSENE, Gelu VASILESCU, Mihaela BADEA-DONI, National Research and Development Institute for Chemistry and Petrochemistry, ICECHIM Bucharest, ROMANIA*

**II.P.5. High entropy alloys**

*Iulia FLOREA, Raluca-Maria FLOREA, Oana BĂLTĂTESCU, Romeo CHELARU, Ioan CARCEA, Gheorghe Asachi Technical University of Iași, ROMANIA*

*Vasile SOARE, National Research & Development Institute for nonferrous and Rare Metals Bucharest, ROMANIA*

**II.P.6. In vitro assessment of the enzymatic degradation of several PVA/starch materials**

*Luiza JECU, Iulia RĂUȚ, Mariana CĂLIN, Emilia OCNARU, Melania Liliana ARSENE, Violeta PURCAR, National Research and Development Institute for Chemistry and Petrochemistry – ICECHIM – Bucharest, ROMANIA*

*Elena GROȘU, Research and Design Institute for Electrical – ICPE - Bistrița, ROMANIA*

**II.P.7. Cobalt alloys used in medical applications**

*Mirabela-Georgiana MINCIUNĂ, Petrică VIZUREANU, Gheorghe Asachi Technical University of Iasi, ROMANIA*

**II.P.8. In vitro structural changes on the surface of SiO<sub>2</sub>-CaO-P<sub>2</sub>O<sub>5</sub> bioactive glasses**

*Dan Nicolae UNGUREANU, Nicolae ANGELESCU, Adrian CATANGIU, Veronica DESPA, Vasile BRATU, Florina Violeta ANGHELINA, Valahia University of Targoviste, ROMANIA*  
*Violeta TSAKIRIS, Virgil MARINESCU, National Institute for R&D in Electrical Engineering ICPE-CA Bucharest, ROMANIA*

**II.P.9. Stabilized aluminum foams, unique material for industrial applications**

*Oana BĂLTĂTESCU, Raluca – Maria FLOREA, Costel ROMAN, Ioan CARCEA, Gheorghe Asachi Technical University of Iasi, ROMANIA*

**II.P.10. Thermal analysis of the chemical weathering of chalk stone materials**

*Simona-Florentina POP, National Research and Development Institute for Chemistry and Petrochemistry, ICECHIM, Bucharest, ROMANIA*  
*Rodica-Mariana ION, National Research and Development Institute for Chemistry and Petrochemistry, ICECHIM, Bucharest, ROMANIA, Valahia University of Targoviste, ROMANIA*

**II.P.11. Researches about wear comporment of sintered parts elaborated from recovered powders**

*Stefan RADU, Gabriela DEMIAN, Mihai DEMIAN, University of Craiova, ROMANIA*

**II.P.12. Development of new recycled polypropylene styrene-isoprene-styrene block copolymers composites**

*Maria RĂPĂ, Elena GROSU, Ancuța TRIFOI, Research Institute for Organic Auxiliary Products – ICPAO - Medias, ROMANIA*  
*Paul GHIOCĂ, Lorena IANCU, Bodgan SPURCACIU, Romona GRIGORESCU, National Institute for Research & Development in Chemistry and Petrochemistry INCDCP-ICECHIM, Bucharest, ROMANIA*  
*Corneliu CINCU, Advanced Coatings Research Institute, Bucharest, ROMANIA*

**II.P.13. Preparation of medical devices with antimicrobial properties**

*Maria RĂPĂ, Petruța STOICA, Elena GROSU, Grigore VLAD, Research and Design Institute for Electrical – ICPE, Bistrița, ROMANIA*  
*Elisabeta Elena TĂNASE, University of Agronomic Sciences and Veterinary Medicine, Bucharest, ROMANIA*

**II.P.14. Thermogravimetric studies on the BHF synthesis of BaCO<sub>3</sub> and α-Fe<sub>2</sub>O<sub>3</sub> mixtures processed by mechanical alloying**

*Iulian ȘTEFAN, Claudiu NICOLICESCU, Adrian OLEI, University of Craiova, ROMANIA*

**II.P.15. Evaluation of natural polyphenols entrapped in calcium alginate beads prepared by ionotropic gelation method**

*Rusăndica STOICA, Rodica-Mariana ION, National Research and Development Institute for Chemistry and Petrochemistry, ICECHIM, Bucharest, ROMANIA, Valahia University, Targoviste, ROMANIA*  
*Simona Florentina POP, National Research and Development Institute for Chemistry and Petrochemistry, ICECHIM, Bucharest, ROMANIA*

**II.P.16. Structural investigation of thermo-mechanically processed Ti-29Nb-9Ta-10Zr alloy using X-ray diffraction**

*Cristina TĂBIRCĂ, Doina RĂDUCANU, Vasile Danut COJOCARU, Ion CINCĂ, Andreea CĂPRĂRESCU, Politehnica University of Bucharest, ROMANIA*  
*Thierry GLORANT, Doina-Margareta GORDIN, Sciences Chimiques de Rennes/Chimie-Métallurgie, Rennes Cedex, FRANCE*  
*Ioan DAN, SC R&D Consulting and Services, Bucharest, Romania*

**II.P.17. The corrosion behavior using gravimetric method and pitting of some Al-Cu-Mg superalloys**

*Marius VASILESCU, Ioana VASILESCU, Politehnica University of Bucharest, ROMANIA*

**II.P.18. Wear behavior of sintered steels obtained by gas-carburizing process**

Daniel ZORILĂ, Claudiu NICOLICESCU, Iulian ȘTEFAN, University of Craiova, ROMANIA

**II.P.19. Spectral characterization and thermal studies of poly(hydroxybutyrate)/poly(vinyl alcohol) blend biodegradation**

Adina Maqdalena MUSUC, Silviu PREDA, Vlad Tudor POPA, Romanian Academy, “Ilie Murgulescu” Institute of Physical Chemistry, Bucharest, ROMANIA

Luiza JECU, Mihaela BADEA – DONI, Iulia RĂUȚ, Mariana CĂLIN, National Research and Development Institute for Chemistry and Petrochemistry – ICECHIM, Bucharest, ROMANIA

**II.P.20. Features of Cu-Sn-Mn alloys obtained from mechanically alloyed powders**

Gheorghe ȘTEFAN, Cristina TEIȘANU, University of Craiova, ROMANIA

**II.P.21. Metallographic characterization of a new biomedical titanium based-alloy for orthopedic applications**

Andreea-Carmen BĂRBÎNȚĂ, Carmen Iulia CRIMU, Bogdan ISTRATE, Corneliu MUNTEANU, Gheorghe Asachi Technical University of Iasi, ROMANIA

Romeo CHELARIU, Gheorghe Asachi Technical University of Iasi, ROMANIA

Smaranda NAZARIE, Kamel EARAR, “Apollonia” University of Iasi, ROMANIA

**II.P.22. Investigation of a new Ti-Nb-Zr-Ta alloy by electron microscopy, X-ray diffraction and nanoindentation**

Andreea-Carmen BĂRBÎNȚĂ, Carmen Iulia CRIMU, Bogdan ISTRATE, Corneliu MUNTEANU, Gheorghe Asachi Technical University of Iasi, ROMANIA

Romeo CHELARIU, Gheorghe Asachi Technical University of Iasi, ROMANIA

Smaranda NAZARIE, Kamel EARAR, “Apollonia” University of Iasi, ROMANIA

**II.P.23. Design and casting technology for Ti-Al-Nb-Ta-alloy**

Ildiko PETER, Mario ROSSO, Davide SUANI, Politecnico di Torino, ITALY

**II.P.24. Corrosion behaviour of bulk Fe<sub>67</sub>Cr<sub>4</sub>Mo<sub>4</sub>Ga<sub>4</sub>P<sub>12</sub>B<sub>5</sub>C<sub>4</sub> amorphous alloy and ITS crystallized form**

Dragos BUZDUGAN, Cosmin CODREAN, Viorel Aurel ȘERBAN, Florin Marian CORNEA, Politehnica University of Timisoara, ROMANIA

**II.P.25. Stainless steels brazing with nickel and copper based amorphous alloys**

Cosmin CODREAN, Cristian STOIAN, Viorel Aurel ȘERBAN, Carmen OPRÎȘ, Politehnica University of Timisoara, ROMANIA

**II.P.26. Cobalt (II) removal from aqueous solutions by natural hemp fibers: batch and fixed-bed column studies**

Lavinia TOFAN, Carmen TEODOSIU, Carmen PĂDURARU, Gheorghe Asachi Technical University of Iasi, ROMANIA

Rodica WENKERT, Soroka University Medical Center, Beer-Sheva, ISRAEL

**II.P.27. Application of nanostructured technology for accuracy increasing in a gas flow meter case**

Vlad JINGA, Mihaela DUDIȚĂ, Victor NASCOV, Cornel SAMOILĂ, Doru URSUȚIU, Transilvania University of Brașov, ROMANIA

**II.P.28. The effect of „gascarbusint” on tensile properties of sintered steels**

Marius Cătălin CRIVEANU, University of Craiova, ROMANIA

Mario ROSSO, Marco ACTIS-GRANDE, Politecnico di Torino, ITALY

**II.P.29. The physical properties of the blast furnace slag and steel plant slag used in road construction**

Irina VILCIU, Echological University of Bucharest, ROMANIA

**II.P.30. Designing and continuous extrusion forming of Al-Mg-Si contact lines for electric railway**

*Ileana Nicoleta POPESCU, Vasile BRATU, Elena Valentina STOIAN, Valahia University of Targoviste, ROMANIA*  
*Mario ROSSO, Politecnico di Torino, ITALY*  
*Constantin POPESCU, Vimetco Extrusion Company, Slatina, ROMANIA*

**Section III**

**III.P.1. Influence of the nitrogen flow rates on the tribological behavior of magnetron deposited N-alloyed stainless steel coatings**

*Raluca ZAMFIR, Cosmin COTRUȚ, Sorin CIUCĂ, Polytechnic University of Bucharest, ROMANIA*  
*Eduard GRIGORE, National Institute for Laser, Plasma and Radiation Physics, Măgurele-Bucharest, ROMANIA*  
*Cristian LUNGU, National Institute for Materials Physics, Măgurele-Bucharest, ROMANIA*

**III.P.2. Heat treatment applied to carbon steels sintered powders of Fe and Fe<sub>3</sub>C powder obtained by mechanical alloying**

*Mariana CIOBANU, Claudiu NICOLICESCU, Ionela Gabriela BUCȘE, Iulian ȘTEFAN, University of Craiova, ROMANIA*

**III.P.3. Obtaining the optimal parameters in a laser hardening process through Taguchi method**

*Luminita GRECU, Gabriela DEMIAN, Mihai DEMIAN, University of Craiova, ROMANIA*

**III.P.4. Research regarding the structural characteristics of some steels based on ferrous and copper powders**

*Claudiu NICOLICESCU, Daniel ZORILĂ, Victor Horia NICOARĂ, University of Craiova, ROMANIA*

**III.P.5. Surface characterization natural materials by nanoindentation**

*Emilio RAYÓN, Santiago FERRANDIZ, Juan LÓPEZ, Marina Patricia ARRIETA, Universitat Politècnica de València, SPAIN*

**III.P.6. Corrosion and sliding wear behavior of Cr<sub>3</sub>Cr<sub>2</sub>-NiCr coatings alloyed by electron beam treatment**

*Dragoș UTU, Viorel Aurel SERBAN, Polytechnic University of Timisoara, ROMANIA*  
*Gabriela MARGINEAN, University of Applied Science Gelsenkirchen, GERMANY*

**III.P.7. On some structural characteristics of Fe-base shape memory alloys**

*Adrian-Liviu PARASCHIV, Marius-Gabriel SURU, Nicoleta Monica LOHAN, Bogdan PRICOP, Iuliana-Petruța SPIRIDON, Leandru-Gheorghe BUJOREANU, Gheorghe Asachi Technical University of Iași, ROMANIA*  
*Firuța BORZA, Nicoleta LUPU, National Institute of Research and Development for Technical Physics, Iasi, ROMANIA*

**III.P.8. The influence of heat treatment atmosphere and maintaining period on the homogeneity degree of a Fe-Mn-Si-Cr-Ni shape memory alloy obtained through powder metallurgy**

*Iulia Petruța SPIRIDON, Bogdan PRICOP, Marius-Gabriel SURU, Adrian Liviu PARASCCHIV, Nicoleta Monica LOHAN, Leandru-Gheorghe BUJOREANU, Gheorghe Asachi Technical University of Iași, ROMANIA*

**III.P.9. Hot working effects on surface relief characteristics in a Fe-Mn-Si-Cr SMA**

*Marius-Gabriel SURU, Nicoleta-Monica LOHAN, Adrian-Liviu PARASCHIV, Bogdan PRICOP, Iuliana-Petruța SPIRIDON, Constantin Baciu, Leandru-Gheorghe BUJOREANU, Gheorghe Asachi Technical University of Iași, ROMANIA*

**III.P.10. Rapidly solidified aluminium and titanium alloys**

*Mircea DOBRESCU, Marius VASILESCU, Polytechnic University of Bucharest, ROMANIA*

**III.P.11. The comparative study of the corrosion and wear resistance to the siliconized and non treated steels**

Zoltan MARKOS, Transilvania University of Brasov, ROMANIA

**III.P.12. Polarised screen influence on plasma discharge stability for plasma nitriding technique**

Carmen NEJNERU, Mihai AXINTE, Petrica VIZUREANU, Manuela-Cristina PERJU, Ion HOPULELE, Gheorghe Asachi Technical University of Iași, ROMANIA

**III.P.13. Researches on thermal fatigue influence concerning quenching cooling characteristics for carboximethyl cellulose solution in water**

Carmen NEJNERU, Adrian GRECU, Petrică VIZUREANU, Mihai AXINTE, Manuela-Cristina PERJU, Gheorghe Asachi Technical University of Iași, ROMANIA

**III.P.14. Aspects about phase transformation in solid state of a S.G. cast iron**

Ioan MILOȘAN, Transilvania University of Brasov, ROMANIA

**III.P.15. Influence of thermal annealing on structural and optical properties of Au:TiO<sub>2</sub> nanocomposite film**

Adnana MARIN, Daniel MUNTEANU, Transilvania University of Brasov, ROMANIA  
Cacilda MOURA, Minho University of Braga, PORTUGAL

**III.P.16. Researches on obtaining performant carbon based coatings with enhanced wear and corrosion resistance**

Lucian COSTINESCU, Corina COJOCARIU, Adnana MARIN, Daniel MUNTEANU, Transilvania University of Brasov, ROMANIA

**III.P.17. Diamond like carbon films with enhanced mechanical and corrosion resistance in saline environment/solution**

Corina COJOCARIU, Lucian COSTINESCU, Mihaela DUDIȚĂ, Cristina BOGATU, Daniel MUNTEANU, Transilvania University of Brasov, ROMANIA

## **Section IV**

**IV.P.1. Possibilities of performing welding or brazing using Laser Hybrid process**

Bogdan ANDREESCU, Transilvania University of Brasov, ROMANIA

**IV.P.2. Design of a computer software for approval of welding procedure under the standard Pt Cr - 7/1-2003**

Nicolae-Tudor CÂNDEA, Virgil-Nicolae CÂNDEA, Cornel-Eugen ȘERBAN, Transilvania University of Brasov, ROMANIA

Ciprian RĂUȚĂ, SC Black Sea SRL Brasov, ROMANIA

**IV.P.3. Optimizing butt welding joints of sheets to process 111 - 135 norm En 287-1/92**

Virgil-Nicolae CÂNDEA, Nicolae-Tudor CÂNDEA, Silviu POPESCU, Transilvania University of Brasov, ROMANIA  
Lidia ȘERBAN, CNE Andrei Bârseanu, Brasov, ROMANIA

**IV.P.4. Reconditioning by welding of plug coulters**

Rodica-Mariana POPESCU, Transilvania University of Brasov, ROMANIA

**IV.P.5. Laser cladding of Ni based CW composite powder**

Adrian-Răzvan STAIUCU, Radu IOVĂNAȘ, Daniela-Maria IOVĂNAȘ, Alexandru PASCU, Mihai-Alin POP, Transilvania University of Brasov, ROMANIA

## **ARO, Europa room**

17.30: Workshop “Education and Research in Materials Engineering - Present and Perspectives”



### Hall F

10.00: Workshop Standard Service / CSM Instruments

11.00: Workshop Sartorom / Zwick

12.00: Workshop Standard Service / EmcoTest

14.00: Workshop Namicon / Innovia and Olympus

### Hall G

10.00 – 19.00: Exhibitions (CSM Instruments, Standard Service, Melt, Nitech, Namicon, Olympus, Zeiss, Sartorom, Cobotech)

### ARO night bar

20.00: Gala dinner

## **Friday, 01.03.2013**

### Hall B

9.00: Oral Presentations I (Section I)

*Chairpersons: **Iulian RIPOȘAN**, Politehnica University of Bucharest, ROMANIA*

***Aurel CRIȘAN**, Transilvania University of Brasov, ROMANIA*

#### **I.K.1. Structural control of high Cr-Mo white irons for optimum abrasion resistance/toughness combination**

***Adel NOFAL**, Reham REDA, Khaled IBRAHIM, Central Metallurgical R&D Institute, Helwan-Cairo, EGYPT*

#### **I.O.1. Feasibility study of the production of secondary polyolefins from the plastic wastes using magnetic density separation**

***Mircea Horia ȚIEREAN**, Liana Sanda BALTEȘ, Tiberiu FORIȘ, Transilvania University of Brasov, ROMANIA*

***Peter Carlo REM**, Delft University of Technology, The NETHERLANDS*

#### **I.O.2. Pyrolysis of the plastics wastes, a convenient method for the generation of fuels**

***Mircea Horia ȚIEREAN**, Silvia PATACHIA, Liana Sanda BALTEȘ, Transilvania University of Brasov, ROMANIA*

***Mihai BREBU**, Petru Poni Institute of Macromolecular Chemistry, Iasi, ROMANIA*

#### **I.O.3. Some considerations on the notion of sustainable (durable) materials**

***Ana Maria ILIE**, Bogdan Florin STROE, Andrei BERBECARU, **Avram NICOLAE**, Politehnica University of Bucharest, ROMANIA*

#### **I.O.4. Expert system techniques used in materials science**

***Petrică VIZUREANU**, Dragoș-Cristian ACHIȚEI, Manuela-Cristina PERJU, Dragoș DANĂ, Gheorghe Asachi Technical University of Iasi, ROMANIA*

#### **I.O.5. Researches on the obtainment of metal matrix with controlled microhardness**

***Victor GEANTA**, Ionelia VOICULESCU, Radu STEFANOIU, Horia BINCHICIU, Radu Mihai NEGRIU, Politehnica University of Bucharest, ROMANIA*

#### **I.O.6. Labview in ultrasound plastic materials measurement**

***Doru URSUȚIU**, Cornel SAMOILĂ, Vlad JINGA, Liana Sanda BALTEȘ, Mircea Horia ȚIEREAN, Transilvania University of Brasov, ROMANIA*

***Ladislau VEKAS**, Laboratory of Magnetic Fluids, Center for Fundamental and Advanced Technical Research, Romanian Academy-Timisoara Division, Timisoara, ROMANIA*

## Hall C

9.00: Oral Presentations I (Section II)

Chairpersons: **Ildiko PETER**, Politecnico di Torino, ITALY

**Cornel SAMOILĂ**, Transilvania University of Brasov, ROMANIA

### II.K.1. Gemology in the old testament (In memoriam of Prof. Dr. Eng. Petru TUDORAN)

Strul MOISA, Ben-Gurion University of the Negev, Beer-Sheva, ISRAEL

### II.O.1. Fracture micromechanisms and residual stresses of a highly resistant duplex stainless steel

Andrés VALIENTE, Mihaela IORDĂCHESCU, Jesus RUIZ-HERVIAS, Maricely De ABREU, Universidad Politécnica de Madrid, SPAIN

### II.O.2. Meso-micro hierarchically ZSM-5 based nanostructure hybrids - as doxorubicine carrier for cancer treatment

Cristina Ileana COVALIU, Gigel PARASCHIV, Horia IOVU, Politehnica University of Bucharest, ROMANIA

### II.O.3. Multifunctional maghemite and poly-DL-alanine based core-shell magnetic nanohybrids for environmental protection and biomedicine applications

Gigel PARASCHIV, Cristina Ileana COVALIU, Politehnica University of Bucharest, ROMANIA

### II.O.4. NiFe<sub>2</sub>O<sub>4</sub>/Ni-Fe alloy nanocomposite obtained by mechanical milling and spark plasma sintering

Ionel CHICINĂȘ, Traian Florin MARINCA, Florin POPA, Bogdan Viorel NEAMȚU, Vasile Florin TARȚA, Technical University of Cluj-Napoca, ROMANIA

Oliver ISNARD, Institut Néel, CNRS, University Joseph Fourier, Grenoble, FRANCE

Viorel POP, Babes-Bolyai University, Cluj-Napoca, ROMANIA

### II.O.5. Properties correlation of an Al-Mg-Fe-Cu alloy unidirectionally solidified for overhead transmission lines

Pedro LAMARAO, Clovis SANTANA, Jandson MARTINS, Jose QUARESMA, Universidad Federal do Para-UFGA, Belém, BRAZIL

### II.O.6. Modified nanostructured hydroxyapatite with medical applications

Valer ALMĂȘAN, Mihaela LAZĂR, National Institute for Research and Development for Isotopic and Molecular Technologies – INCDTIM, Cluj-Napoca, ROMANIA

Maria TOMOAI-COTISEL, Aurora MOCANU, Corina GARBO, Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Cluj-Napoca, ROMANIA

Gheorghe TOMOAI, University of Medicine and Pharmacy Iuliu Hatieganu, Cluj-Napoca, ROMANIA

## Hall D

9.00: Oral Presentations I (Section III)

Chairpersons: **Francisco MACEDO**, University of Minho, Braga, PORTUGAL

**Vasile BRATU**, Valahia University of Targoviste, ROMANIA

### III.K.1. Development of Tantalum oxynitride thin films produced by PVD: Study of structural stability

Luis CUNHA, Cacilda MOURA, Filipe VAZ, University of Minho, Braga, PORTUGAL

Daniel CRISTEA, Aurel CRIȘAN, Transilvania University of Brasov, ROMANIA

Nuno BARRADAS, Eduardo Alves, Instituto Tecnológico Nuclear, Sacavém, PORTUGAL

### III.O.1. Particularities of carburising kinetics in different media

Daniela DRAGOMIR, UTTIS Industries SRL, Vidra, ROMANIA

Mihai Ovidiu COJOCARU, Polytechnic University of Bucharest, ROMANIA

Leontin Nicolae DRUGĂ, Romanian Academy of Technical Sciences, ROMANIA

**III.O.2. TiAgx coated pressure sensors for lower limb prosthesis: effect of composition and structural changes in the electrical response of the films**

Cláudia LOPES, Francisco MACEDO, Armando FERREIRA, Senentxu LANCEROS-MENDEZ, Filipe VAZ, Minho University, Braga, PORTUGAL

Paulo PEDROSA, University of Minho, Braga, University of Coimbra, University of Porto, PORTUGAL

Carlos FONSECA, University of Coimbra, Coimbra, University of Porto, Porto, PORTUGAL

**III.O.3. Solar physical vapor deposition: a new approach for preparing magnesium titanate nanopowders**

Irina APOSTOL, S.C. IPEE Amiral Trading Impex S.A. Curtea de Arges, ROMANIA

Venkata SARAVANAN, Paula Maria VILARINHO, University of Aveiro, Aveiro, PORTUGAL

Claude J.A. MONTY, CNRS-PROMES Laboratory, Odeillo, FRANCE

**III.O.4. Fine structure analysis of biocompatible ceramic materials based hydroxyapatite and metallic biomaterials type 316 L**

Florina Violeta ANGHELINA, Dan UNGUREANU, Vasile BRATU, Ileana Nicoleta Popescu, Valahia University of Targoviste, ROMANIA

Carmen Otilia RUSĂNESCU, Polytechnic University of Bucharest, ROMANIA

**III.O.5. Tribological behavior and statistical experimental design of sintered iron-copper based composites**

Ileana Nicoleta POPESCU, Constantin GHIȚĂ, Vasile BRATU, Valahia University of Targoviste, ROMANIA

Guillermo PALACIOS NAVARRO, Zaragoza University, SPAIN

**III.O.6. The quenching in ultrasonic field of a bearing steels. Advantages and perspectives. Part 1: The influence quenching technology on hardness and structure of a RUL 1 steel**

Nicolai BĂNCESCU, Constantin DULUCHEANU, Traian Lucian SEVERIN, Stefan cel Mare University of Suceava, ROMANIA

**Hall E**

9.00: Oral Presentations I (Section IV)

*Chairpersons:* **Ionelia VOICULESCU**, University Politehnica of Bucharest, ROMANIA

**Radu IOVĂNAȘ**, Transilvania University of Brasov, ROMANIA

**IV.O.1. Mechanical behaviour and residual stress field of dissimilar laser welded joints**

Mihaela IORDĂCHESCU, Andrés VALIENTE, Jesús RUIZ-HERVIAS, Materials Science Dpt., E.T.S. de Ingenieros de Caminos, Universidad Politécnica de Madrid, SPAIN

José Luis OCAÑA, Centro LÁSER, Universidad Politécnica de Madrid, SPAIN

**IV.O.2. Research on cladding (CMT MIG, WIG Arc Mechanized Pulse) for molds used for casting**

Teodor MACHEDON-PISU, Alexandru VAS, Mihai MAGYARI, Transilvania University of Brasov, ROMANIA

**IV.O.3. Research referring to non-linear thermal expansion of toroidal sealing discs**

Lucian EFTIMIE, Alina TODI-EFTIMIE, Transilvania University of Brasov, ROMANIA

**IV.O.4. Correlation between the microstructures and mechanical properties of metal coating layers**

Arthur OLĂH, Mircea Horia ȚIEREAN, Transilvania University of Brasov, ROMANIA

**IV.O.5. Vibration Influence on polycrystalline structure and internal friction of the material deposited by welding**

Mihai-Alexandru LUCA, Teodor MACHEDON-PISU, Transilvania University of Brasov, ROMANIA

**IV.O.6. Research on metallic materials thermal cutting under environmental friendly working conditions**

*Florin-Constantin GÂDEA, Teodor MACHEDON-PISU, Adrian ZAHARIA, Alexandru VAS, Transilvania University of Brasov, ROMANIA*

**IV.O.7. Study on pollutants that occur in processes AlMg5 welding of aluminum alloys by WIG process versus pulsed MIG arc**

*Adrian ZAHARIA, Teodor MACHEDON-PISU, Florin GÂDEA, Transilvania University of Brasov, ROMANIA*

**IV.O.8. Laser shock processing and its effects on mechanical properties of steels: a review**

*Ionuț-Bogdan ROMAN, Mircea Horia ȚIEREAN, Transilvania University of Brasov, ROMANIA*

**Hall F**

9.00: Oral Presentations (Section V)

*Chairpersons: Marina Patricia ARRIETA, Universitat Politècnica de València, SPAIN*

*Dorin CATANA, Transilvania University of Brasov, ROMANIA*

**V.K.1. Prediction of properties value in thermoplastic mixtures applying box equivalent model incompatibility in recycled polymer blends**

*Santiago FERRANDIZ, Marina Patricia ARRIETA, Dolores SAMPER, Juan LOPEZ, Instituto de Tecnología de Materiales, Universitat Politècnica de València, SPAIN*

**V.O.1. Modeling and simulation for metallic architectural free forms by generative design**

*Andrei RADUCANU, Maria NICOLAE, Politehnica University of Bucharest, ROMANIA*

**V.O.2. Finite element simulation of the projection welding process of the bars steel with direct applications to manufacture of meshed wire**

*Constantin-Grigore CEORAPIN-TOROK, Radu IOVANAS, Daniel-Maria IOVANAS, Transilvania University of Brasov, ROMANIA*

**V.O.3. Perforating projectiles made by injection molding process from plasticized mixtures of W<sub>90</sub>Ni<sub>7</sub>Fe<sub>3</sub> mechanically alloyed powders**

*Irina CARCEANU, Ioan NEDELICU, SC ICEM SA, București, ROMANIA*

*Corina MORARU, Rodica POPESCU, Transilvania University of Brasov, ROMANIA*

*Tudor CHERECHES, Academia Technical Military Academy, Bucharest, ROMANIA*

**11.00: Coffee Break**

**Hall B**

11.30: Oral Presentations II (Section I)

*Chairpersons: Adel NOFAL, Central Metallurgical R&D Institute, Helwan-Cairo, EGYPT*

*Petrică VIZUREANU, Gheorghe Asachi Technical University of Iasi, ROMANIA*

**I.O.7. Self reducing briquettes used as alternate material to steel obtaining in EAF on the electro energetic regime**

*Mirela Gabriela SOHACIU, Politehnica University of Bucharest, ROMANIA*

**I.O.8. Press compaction behavior of Cu-Fe<sub>3</sub>O<sub>4</sub> nanopowder mixtures**

*Andrei PREDESCU, Liana Maria VLĂDUȚIU, Ecaterina MATEI, Andra Mihaela PREDESCU, Politehnica University of Bucharest, ROMANIA*

**I.O.9. Al-Al<sub>2</sub>O<sub>3</sub> composite materials obtained by reactive sintered**

Dăian LUNGU, Radu VASIU, Francisc GNANDT, Liviu DĂIANU, S.C. ICPT TEHNOMAG CUG S.A. Cluj Napoca, ROMANIA

**I.O.10. Research on the heat of combustion of the polymers coming from the plastic waste materials**

Liviu COSTIUC, Mircea Horia ȚIEREAN, Silvia PATACHIA, Liana Sanda BALTEȘ, Dan FRÂNCU, Transilvania University of Brasov, ROMANIA

**I.O.11. Research on the properties of the ash obtained by incineration and pyrolysis of the residues coming from polyolefins separation process from the plastics wastes**

Mircea Horia ȚIEREAN, Silvia PAȚACHIA, Liana Sanda BALTEȘ, Liviu COSTIUC, Transilvania University of Brasov, ROMANIA

Mihai BREBU, Petru Poni Institute of Macromolecular Chemistry, Iași, ROMANIA

**I.O.12. A correct approach to customer complains: method 8D-report**

Adrian NICULESCU, SC DRM Draexlmaier Electrical Systems SRL Satu Mare, ROMANIA

Radu IOVĂNAȘ, Transilvania University of Brasov, ROMANIA

**I.O.13. New approaches to the calculation methods of effectiveness and efficiency in the field of quality**

Adrian NICULESCU, SC DRM Draexlmaier Electrical Systems SRL Satu Mare, ROMANIA

Radu IOVĂNAȘ, Transilvania University of Brasov, ROMANIA

**I.O.14. Low-cycle-fatigue of an aluminum alloy plated with multi-layered deposits**

Yakov UNIGOVSKI, Ariel GRINBERG, Elior GERAFI, Emmanuel GUTMAN, Strul MOISA, Ben-Gurion University of the Negev, Beer-Sheva, ISRAEL

**Hall C**

11.30: Oral Presentations II (Section II)

*Chairpersons:* **Strul MOISA**, Ben-Gurion University of the Negev, Beer-Sheva, ISRAEL

**Bela VARGA**, Transilvania University of Brasov, ROMANIA

**II.O.7. Chemical and micro-structural characterization of a copper based shape memory alloy**

Nicanor CIMPOEȘU, Sergiu STANCIU, Ramona CIMPOEȘU, Corneliu MUNTEANU, Bogdan ISTRATE, Adela URSANU DRAGOȘ, Gheorghe Asachi Technical University of Iasi, ROMANIA

**II.O.8. Microstructural evolution and mechanical properties of AlMg/AlN composite materials obtained "in-situ"**

Raluca Maria FLOREA, Ioan CARCEA, Gheorghe Asachi Technical University of Iasi, ROMANIA

Mario ROSSO, Ildiko PETER, Politecnico di Torino, ITALY

Dumitru MITRICĂ, National Research & Development Institute for Nonferrous and Rare Metals, ROMANIA

**II.O.9. The influence of the magnesium powder used as reinforcement material on the properties of some collagen based composite biomaterials**

Iulian ANTONIAC, Diana VRÂNCEANU, Aurora ANTONIAC, Politehnica University of Bucharest, ROMANIA

**II.O.10. Hybrid composite materials with biofunctional properties**

Aurora Anca POINESCU, Valahia University of Targoviște, ROMANIA

Rodica Mariana ION, Valahia University of Targoviste, ROMANIA, National Research and Development Institute for Chemistry and Petrochemistry -ICECHIM, Bucharest, ROMANIA

Bogdan VASILE, Politehnica University of Bucharest, ROMANIA

**II.O.11. Nanomaterials for works of art surface restoration**

Rodica-Mariana ION, Sanda Maria DONCEA, Valahia University of Targoviste, ROMANIA, National Research and Development Institute for Chemistry and Petrochemistry -ICECHIM-Bucharest, ROMANIA



*Mihaela-Lucia ION*, Valahia University of Targoviste, ROMANIA

**II.O.12. Microstructural characterization of PM Ti with dextrin addition for endosseous applications**

*Teodora MARCU*, *Ana Maria SALANȚIU*, *Ionuț GLIGOR*, *Cătălin POPA*, Technical University of Cluj-Napoca, ROMANIA

**II.O.13. Mathematical relation ships between alloying elements and technological deformability indexes**

*Carmen Otilia RUSĂNESCU*, Politehnica University of Bucharest, ROMANIA

*Marin RUSĂNESCU*, Valplast Industrie Bucharest, ROMANIA

*Traian IORDĂNESCU*, Metallurgical Research Institute Bucharest, ROMANIA

*Florina Violeta ANGHELINA*, Valahia University of Targoviste, ROMANIA

**II.O.14. Characterization of pit coal fly ash as sorbent for Cd(II) ions from aqueous solutions**

*Lavinia TOFAN*, *Carmen PĂDURAR*, Gheorghe Asachi Technical University of Iasi, ROMANIA

*Rodica WENKERT*, Soroka University Medical Center, Beer-Sheva, ISRAEL

**Hall D**

11.30: Oral Presentations II (Section III)

Chairpersons: **Luis CUNHA**, University of Minho, Braga, PORTUGAL

**Leontin Nicolae DRUGĂ**, Romanian Academy of Technical Sciences, ROMANIA

**III.O.7. Silver-doped TiNx nanocomposite thin films for bio-signals (EEG and ECG) acquisition**

*Paulo PEDROSA*, Minho University, Braga, University of Coimbra, University of Porto, PORTUGAL

*Cláudia LOPES*, *Francisco MACEDO*, *Filipe VAZ*, University of Minho, Braga, PORTUGAL

*Carlos FONSECA*, University of Coimbra, Coimbra, University of Porto, Porto, PORTUGAL

**III.O.8. Study of the surface response at dry friction tests of nanostructured ceramic PM biocomposites**

*Bebe-Adrian OLEI*, *Oana GÎNGU*, *Gabriel BENGA*, University of Craiova, ROMANIA

**III.O.9. Preparation and characterization of (Ti,Al,Si)N coatings developed by dc reactive magnetron sputtering**

*Laszlo JAKAB-FARKAS*, *Dominic BIRO*, Sapiientia University of Tg. Mureș, ROMANIA

*Gabriela STRNAD*, Petru Maior University of Tg. Mureș, ROMANIA

*Ioan VIDA-SIMITI*, Technical University of Cluj Napoca, ROMANIA

**III.O.10. A comparison approach on predicted and retrieved mechanical properties of Ni foams**

*Dana Luca MOTOC*, *Monica CARANFIL*, *Virgil GEAMĂN*, Transilvania University of Brasov, ROMANIA

**III.O.11. Preparation and characterization of composite films based on silicone rubber**

*Elena Valentina STOIAN*, *Vasile BRATU*, *Ileana Nicoleta POPESCU*, Valahia University of Targoviste, ROMANIA

**III.O.12. Mathematical solution of modeling for solidification process of continuous casting of steel taking into account the convection of interface to liquid – solid**

*Vasile BRATU*, *Cristinel MORTICI*, Valahia University of Targoviste, ROMANIA

**Hall E**

Chairpersons: **Mihaela IORDĂCHESCU**, Universidad Politécnica de Madrid, SPAIN

**Teodor MACHEDON-PISU**, Transilvania University of Brasov, ROMANIA

**IV.O.9. Characterisation of weld deposits using as filler metal a high-entropy alloy**

*Ionelia VOICULESCU*, *Victor GEANTĂ*, *Ion-Mihai VASILE*, *Radu ȘTEFĂNOIU*, *Marius TONOIU*, University Politehnica of Bucharest, ROMANIA

**IV.O.10. Research regarding the mechanized hard facing with tubular wire of vertical surfaces**

*Mircea BURCĂ*, Politehnica University of Timișoara, ROMANIA  
*Ioan LUCACIU*, University of Oradea, ROMANIA

**IV.O.11. Influence of the metallizing distance variation and of the electric field voltage on the ohmic resistance of the layers deposited by thermal spraying**

*Ionuț-Claudiu ROATĂ*, *Radu IOVĂNAȘ*, *Alexandru PASCU*, Transilvania University of Brasov, ROMANIA

**IV.O.12. Mathematical determinations concerning the extension of the voltage influence range on the ohmic resistance of the layers deposited by metallization with flame and powder**

*Ionuț-Claudiu ROATĂ*, *Alexandru PASCU*, *Maria-Daniela IOVĂNAȘ*, Transilvania University of Brasov, ROMANIA

**IV.O.13. Influence of the contact sliding surface shape on wear development during reciprocating movement**

*Alina TODI-EFTIMIE*, *Lucian EFTIMIE*, Transilvania University of Brasov, ROMANIA

**IV.O.14. Microstructural characterization and friction coefficient after laser shock processing on stainless steel welds**

*Ionuț-Boțdan ROMAN*, *Mircea Horia ȚIEREAN*, Transilvania University of Brasov, ROMANIA  
*José Luis OCAÑA*, Centro LÁSER, Universidad Politécnica de Madrid, SPAIN  
*Corneliu MUNTEANU*, Gheorghe Asachi Technical University of Iasi, ROMANIA

**Hall F**

12.00: Workshop Cobotec

**13.30: Lunch**

**Hall G**

15.00: Posters presentations II

**Section I**

**I.P.11. Modelling of milling kinetics in a planetary ball mill**

*Corina Gabriela MORARU*, *Cornel Eugen ȘERBAN*, *Rodica Mariana POPESCU*, Transilvania University of Brasov, ROMANIA

**I.P.12. Research on the influence of insulating cores thermal conductivity on feeder operation. Part I: feeder insulated on top and side surfaces**

*Sorin Ion MUNTEANU*, *Ioan CIOBANU*, *Tibor BEDO*, *Aurel CRISAN*, *Ciprian SZABO*, Transilvania University of Brasov, ROMANIA

**I.P.13. Research on the influence of insulating cores thermal conductivity on feeder operation. Part II: feeder insulated on top surface**

*Tibor BEDÓ*, *Ioan CIOBANU*, *Sorin Ion MUNTEANU*, *Aurel CRIȘAN*, *Ciprian SZABO*, Transilvania University of Brasov, ROMANIA

**I.P.14. CTE assessment of various glass fibre reinforced polymer composite architectures**

*Mihai Alin POP*, *Dana LUCA MOTOC*, *Alexandru CONSTANTINESCU*, *Virgil GEAMĂN*, *Rudolf Alexandru DERCZENI*, Transilvania University of Brasov, ROMANIA

**I.P.15. Research on microwave calcination of sewage sludge**

*Emilian-Narcis RIȚI-MIHOC*, *Emil RIȚI-MIHOC*, *Dan PORCAR*, Technical University of Cluj-Napoca, ROMANIA

**I.P.16. About the mathematical modeling of the chemical intercrystalline microsegregation of a steel with 0.533% C**

*Maria STOICĂNESCU, Ioan CIOBANU, Aurel CRIȘAN, Transilvania University of Brasov, ROMANIA*

**I.P.17. Improving the quality of surfaces by electrolytic coating. Working parameters**

*Elena Lăcrămioara TIRON, Aurel CRIȘAN, Transilvania University of Brasov, ROMANIA*

**I.P.18. Characterization of electrolytically deposited layers. Methods and results**

*Elena Lăcrămioara TIRON, Aurel CRIȘAN, Transilvania University of Brasov, ROMANIA*

**I.P.19. Carbide sensitivity of rare earth inoculated ductile irons in thin wall castings**

*Valentin UTĂ, Iulian RIPOȘAN, Politehnica University of Bucharest, ROMANIA*

## **Section II**

**II.P.31. In situ variable temperature X-ray diffraction studies on size scale of CuCrO<sub>2</sub> polytypes with delafossite structure**

*Dan URSU, Ioan GROZESCU, Politehnica University of Timisoara, ROMANIA, National Institute for Research and Development in Electrochemistry and Condensed Matter, Timisoara, ROMANIA  
Marinela MICLAU, Politehnica University of Timisoara, ROMANIA*

**II.P.32. Studies regarding the structural characteristics of sintered alloyed steels with nanometric master alloys**

*Ionela Gabriela BUCȘE, Maria CIOBANU, Olimpia GHERMEC, University of Craiova, ROMANIA*

**II.P.33. Electrochemical behavior of some zinc galvanizing steels**

*Nicolae GHIBAN, Brândușa GHIBAN, Victor GEANTĂ, Radu ȘTEFĂNOIU, Politehnica University of Bucharest, ROMANIA*

*Maria HAIDUCU, National Research and Development Institute of Occupational Safety (INCDPM) - "Alexandru Darabont" Bucharest, ROMANIA*

**II.P.34. Atmospheric corrosion behavior of some zinc galvanizing steels**

*Brândușa GHIBAN, Nicolae GHIBAN, Politehnica University of Bucharest, ROMANIA*

*Maria HAIDUCU, National Research and Development Institute of Occupational Safety (INCDPM) - "Alexandru Darabont" Bucharest, ROMANIA*

*Radu BOICIUC, S.C. Uzinsider SA Galati, ROMANIA*

**II.P.35. Structural characterization of a new cobalt alloys for dental applications**

*Brândușa GHIBAN, Alexandru GHIBAN, Cristina Maria BORTUN, Nicolae GHIBAN, Politehnica University of Bucharest, ROMANIA*

*Mario ROSSO, Politecnico di Torino, ITALY*

**II.P.36. Processing and characterization of Al-Mg-Si based composites reinforced with steel**

*Vasile BRATU, Nicoleta POPESCU, Valahia University of Targoviste, ROMANIA*

**II.P.37. Magnetic cobalt ferrite nanoparticles: Synthesis and surface functionalization with peptide**

*Adina-Elena SEGNEANU, Paulina VLAZAN, Paula SVERA, Ioan GROZESCU, National Institute R&D for Electrochemistry and Condensed Matter, Bucharest, ROMANIA*

*Andrej PETRIC, Ljubljana University, SLOVENIA*

**II.P.38. Thermal processing temperature influence on hard tissue chemical composition**

*Florin MICULESCU, Marian MICULESCU, Mihai BRANZEI, Nicolae GHIBAN, Politehnica University of Bucharest, ROMANIA*

*Lucian Toma CIOCAN, University of Medicine and Pharmacy, Bucharest, ROMANIA*

**II. P.39. Consideration above the reinforcement elements of the resistance structures**

Constantinescu VASILE, Gheorghe Veniamin BOGUS, Iulia MUSCALU, Costel ROMAN, Ioan CARCEA, Gheorghe Asachi Technical University “ of Iasi, ROMANIA

**II.P.40. Thin solid films for transparent electronics**

Viorica MUȘAT, Petrică ALEXANDRU, Elena-Emanuela VÂLCU, Centre of Nanostructures and Functional Materials, University “Dunărea de Jos” of Galati, ROMANIA

Laurentiu FRANGU, Radu BELEA, University “Dunărea de Jos” of Galati, ROMANIA

Nicolae TIGĂU, Centre of Nanostructures and Functional Materials, University “Dunărea de Jos” of Galati, ROMANIA

**II.P.41. Crystallization kinetics of amorphous V47Ni32Ti21 alloy**

Gyorgy THALMAIER, Niculina SECHEL, Ioan VIDA-SIMITI, Technical University of Cluj-Napoca, ROMANIA

Cosmin CODREAN, Politehnica University of Timisoara, ROMANIA

**II.P.42. Study of the hot deformability of microalloyed steels using torsion tests**

Carmen Otilia RUSĂNESCU, Gigel PARASCHIV Politehnica University of Bucharest, ROMANIA

Marin RUSĂNESCU, Valplast Industry Bucharest, ROMANIA

Florina Violeta ANGHELINA, Valahia University of Targoviste, ROMANIA

**II.P.43. Morphology and magnetic properties of magnetoelectrodeposited cobalt-nickel-nitrogen thin films**

Iulian Sorin TĂNASE, Violeta VASILACHE, Ștefan cel Mare University of Suceava, ROMANIA

Dumitrita TĂNASE, Mihai Eminescu College of Suceava, ROMANIA

**II.P.44. Evaluation of developed surface texture for a 20% cold rolled Ti-Nb-Ta-Zr alloy**

Vasile Dănuț COJOCARU, Doina RĂDUCANU, Ion CINCĂ, Ioan DAN, Andreea CAPRARESCU, Politehnica University of Bucharest, ROMANIA

**II.P.45. Characterization of the mechanical alloyed precursors from BaCO<sub>3</sub> and Fe<sub>2</sub>O<sub>3</sub> used in the preparation of barium ferrite type W**

Sandu DUBOVAN, Mihai DEMIAN, Lidia DUBOVAN, Gabriela DEMIAN, University of Craiova, ROMANIA

**II.P.46. Self-assembled monolayer based impedimetric immunosensors for aflatoxin B1 detection**

Emilia OCNARU, Mihaela BADEA-DONI, Melania-Liliana ARSENE, National Research & Development Institute for Chemistry & Petrochemistry, ICECHIM Bucharest, ROMANIA

Andrei DANETJ, University of Bucharest, ROMANIA

**II.P.47. Effect of fire on the microstructure and mechanical response of structural steels for building construction**

Andrés VALIENTE, Mihaela IORDĂCHESCU, Miquel Àngel Martín RENGEL, Universidad Politécnica de Madrid, SPAIN

**II.P.48. Biodegradability of magnesium alloys in simulated mediums**

Iulian ANTONIAC, Mihaela DINU, Politehnica University of Bucharest, ROMANIA

**II.P.49. Testing methods for power cables insulating materials - A case study**

Larisa MĂRIUȚ, Elena HELEREA, Transilvania University of Brasov, ROMANIA

**II.P.50. Compost based ecological biofertilizer and adsorbent materials for toxic metals from polluted waters**

Claudia ZAHA, Lucia DUMITRESCU, Ileana MANCIULEA, Transilvania University of Brasov, ROMANIA

**II.P.51. Sol-gel synthesis and optical properties of ZnO powders**

Alina MATEI, Ileana CERNICA, Vasilica ȘCHIOPU, Adrian DINESCU, Mihai DANILĂ, National Institute for Research and Development in Microtechnologies IMT-Bucharest, ROMANIA

*Lucia DUMITRESCU, Ileana MANCIULEA, Transilvania University of Brasov, ROMANIA*

**II.P.52. Study of the microbial contamination of plastic materials obtained from polymer municipal solid wastes**

*Silvia PAȚACHIA, Nicoleta DAMIAN, Alina MOLDOVAN, Mircea Horia ȚIEREAN, Liana BALTEȘ, Transilvania University of Brasov, ROMANIA*

**II.P.53. Ecological materials for the dyes removal from waste water**

*Rodica DOBRITOIU, Silvia PAȚACHIA, Transilvania University of Brasov, ROMANIA*

**II.P.54. Fibre surface influence on composites mechanical properties**

*Ovidiu NEMES, Teodora MARCU, Amalia Mihaela IURIAN, Cătăin POPA, Technical University of Cluj-Napoca, ROMANIA*

**II.P.55. Industrial equipment modeling and value engineering**

*Florin CHICHERNEA, Ana VEȚLEANU, Transilvania University of Brasov, ROMANIA*

**II.P.56. Roll crushers design using value engineering**

*Ana VETELEANU, Florin CHICHERNEA, Transilvania University of Brasov, ROMANIA*

**II.P.57. Corrosion behavior in Ringer solution biocompatible alloys - 316L and Ti6Al4V**

*Lisette OANCEA, Ana VEȚLEANU, Victor NASCOV, Florin CHICHERNEA, Doru URȘUȚIU, Cornel SAMOILĂ, Transilvania University of Brasov, ROMANIA*

**II.P.58. Research concerning the corrosion behaviour of thermal treated hybrid composites with aluminium alloy matrix reinforced with SiC and graphite**

*Ana VETELEANU, Florin CHICHERNEA, Transilvania University of Brasov, ROMANIA*

**II.P.59. Structural transformations in Zn-Al<sub>22</sub> alloy solidified by ultra rapid cooling**

*Bela VARGA, Transilvania University of Brasov, ROMANIA*  
*Ildiko PETER, Politecnico di Torino, ITALY*

**II.P.60. Indirect measurement of transformation temperatures at shape memory alloys of CuZnAl category**

*Petru COTFAS, Daniel COTFAS, Cornel SAMOILĂ, Bela VARGA, Doru URȘUȚIU, Sorin ZAMFIRA, Transilvania University of Brasov, ROMANIA*  
*Petrică VIZUREANU, Gheorghe Asachi Technical University of Iasi, ROMANIA*

**II.P.61. Structure of Zn-Al- eutectoid alloys**

*Mirela AGAPIE, Bela VARGA, Universitatea Transilvania, ROMANIA*

**II.P.62. Top piston ring-cylinder liner interface solutions for maximised tribological performance and reduced particulate emissions in Diesel engines**

*Adina CUCU, Transilvania University of BRASOV, ROMANIA*

**II.P.63. Studies on the heat treatment of titanium alloys for prosthesis**

*Camelia PITULICE, Ioan GIACOMELLI, Transilvania University of BRASOV, ROMANIA*

### **Section III**

**III.P.18. General aspects on tribological coatings with piezoelectric sensing capability**

*Mirela PĂTRU, Daniel MUNTEANU, Transilvania University of Brasov, ROMANIA*

**III.P.19. Tantalum based thin films (oxides, nitrides and oxynitrides) preparation, structures and properties - a review**



*Daniel CRISTEA, Aurel CRIȘAN, Transilvania University of Brasov, ROMANIA*

**III.P.20. Electrical and photocatalytic behaviour of TaO<sub>x</sub>N<sub>y</sub> magnetron sputtered thin solid films**

*Daniel CRISTEA, Aurel CRIȘAN, Transilvania University of Brasov, ROMANIA*

*Nuno BARRADAS, Eduardo ALVES, Instituto Tecnológico Nuclear, Sacavém, PORTUGAL*

*Luis CUNHA, Pedro COSTA, Senentxu LANCEROS-MÉNDEZ, University of Minho, Braga, PORTUGAL*

**III.P.21. A comparative study of (TiZr)C and (CuSiTiYZr)C films microstructure deposited by magnetron sputtering**

*Gheorghe I. ȘTEFĂNESCU, Ion CIUCĂ, Ștefan Bogdan VASILE, Polytechnic University of Bucharest, ROMANIA*

*Mariana BRAIC, Viorel BRAIC, National Institute for Optoelectronics, ROMANIA*

**III.P.22. Design of new coatings using magnetron sputtering – numerical estimations**

*Gheorghe I. ȘTEFĂNESCU, Ion CIUCĂ, Polytechnic University of Bucharest, ROMANIA*

**III.P.23. Growth of TiO<sub>2</sub> nanostructures on copper sheets with M.O.C.V.D. technique**

*Radu-Francisc COTERLICI, Ana VEȚELEANU, Virgil GEAMĂN, Transilvania University of Brasov, ROMANIA*

*Denis CHAUMONT, Marco SACIOTTI, Université de Bourgogne, Dijon, FRANCE*

**III.P.24. Investigation on the friction coefficient of the composite materials obtained from plastics wastes and cellulosic fibres**

*Liana Sanda BALTES, Mircea Horia ȚIEREAN, Silvia PAȚACHIA, Transilvania University of Brasov, ROMANIA*

**III.P.25. Assessment of corrosion resistance of orthodontic brackets by electrochemical methods**

*Oscar MARTEL FUENTES, Agustín SANTANA LOPEZ, Las Palmas de Gran Canaria University, SPAIN*

*Liana Sanda BALTES, Transilvania University of Brasov, ROMANIA*

**III.P.26. Structural aspects of thermomechanical treatments of a low alloyed construction steel**

*Mihăiță CAZACU, Ioan GIACOMELLI, Maria STOICĂNESCU, George VASILE, Transilvania University of Brasov,*

*ROMANIA*

**III.P.27. Wear behavior of layers deposited by welding**

*Mihăiță CAZACU, Ioan GIACOMELLI, Maria STOICĂNESCU, George VASILE, Transilvania University of Brasov,*

*ROMANIA*

**III.P.28. Bioactive surfaces on titanium-tantalum alloys for orthopaedic implants**

*Julia MIRZA ROSCA, Alejandro LOMOSCHITZ, Las Palmas de Gran Canaria University, SPAIN*

*Ioan DAN, R&D Consultanta si servicii SRL, Bucharest, ROMANIA*

*Liana Sanda BALTES, Mircea Horia ȚIEREAN, Transilvania University of Brasov, ROMANIA*

**III.P.29. Electrochemical impedance spectroscopy characterization of passive film formed on Ti-Ta alloys**

*Oscar MARTEL FUENTES, Julia MIRZA ROSCA, E. RODRIGUEZ GALINDO, Las Palmas de Gran Canaria University, SPAIN*

*Liana Sanda BALTES, Mircea Horia ȚIEREAN, Transilvania University of Brasov, ROMANIA*

**III.P.30. Research on C35 steel aluminisation**

*Dragoș Cristian ACHITEI, Petrică VIZUREANU, Dan Gelu GĂLUȘCĂ, Dragoș DANA, Gheorghe Asachi Technical University, Iasi, ROMANIA*

**III.P.31. The surface modification of low alloy steel with Ni electrode by electrospark deposition method**

*Manuela-Cristina PERJU, Carmen NEJNERU, Petrică VIZUREANU, Mihai AXINTE, Gheorghe Asachi Technical University Iași, ROMANIA*

**III.P.32. Literature review on TaN thin films structure**

*Camelia GABOR, Daniel MUNTEANU*, Transilvania University of Brasov, ROMANIA

**III.P.33. Determining thin films adherence by scratch test**

*Camelia GABOR*, Transilvania University of Brasov, ROMANIA

**III.P.34. The influence of plasma composition on the mechanical characteristics of SiO<sub>x</sub>**

*Valentin-Cristian TOGAN, Gheorghe IONIȚĂ*, Valahia University of Târgoviște, ROMANIA

**Section V**

**V.P.1. Surface characterization natural materials by nanoindentation**

*Emilio RAYON, Santiago FERRANDIZ, Juan LOPEZ, Marina Patricia ARRIETA*, Universitat Politècnica de València, SPAIN

**V.P.2. Study regarding industrial noise reduction with sound absorbing screens**

*Dorin CATANA*, Transilvania University of Brasov, ROMANIA

**Main Hall A**

17.00: Concert, celebration of the Transilvania University Day

**Hall G**

9.00 – 17.00: Exhibitions (CSM Instruments, Standard Service, Melt, Nitech, Namicon, Olympus, Zeiss, Sartorom, Cobotech)

**Hall H**

19.00: Goodbye cocktail

**Saturday, 02.03.2013**

9.00: Meeting, Iuliu Maniu str. 41A, Brașov

9.30: Visit of R&D Institute of Transilvania University

11.00: Visit of Râșnov fortress and cave

12.00: Visit of Bran castle

13.00: Picnic in Bran