



POLCOM 2018 - International Conference on  
Technologies for Polymeric and Composite Products  
*November 1, 2018, Bucharest, Romania*

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# **POLCOM 2018**

**International Conference on Technologies  
for Polymeric and Composite Products**

## **Conference Programme**

**November 1, 2018  
Bucharest, Romania**



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## Organizers



### **Manufacturing Engineering (TCM) Department**

Faculty of Engineering and Management of  
Technological Systems (IMST),  
University POLITEHNICA of Bucharest



**Romanian Automobile Manufacturers Association (ACAROM)**  
**Romanian Plastic Processor Employers' Association (ASPAPLAST)**  
**Business Trade Fairs and Exhibitions Organizer (EUROEXPO)**

### Chairmen

**OPRAN Constantin**  
POLITEHNICA University of  
Bucharest

**LAMANNA Giuseppe**  
University of Campania "Luigi  
Vanvitelli"



## Conference Programme

Thursday, 1<sup>st</sup> of November 2018

**Time:** 9.00 – 11.00

**Location:** Room CD 008 - IMST Faculty (The presentations will be held in Romanian language)

**Activities:**

**Simpozionul Centenarul Marii Uniri - Oameni și fapte (*Great Unification Centenary Symposium – People and facts*)**

- **Conf. univ. dr. Florentina Nițu**, Decanul Facultății de Istorie, Universitatea din București: *Universitarii bucureșteni si Marele Război (1914-1918) (Bucharest Academics and the Great War (1914-1918)).*
- **Prof. univ. dr., Col. (r) Ion Giurcă**, Universitatea Națională de Apărare „Carol I”: *Mareșalul Constantin Prezan – Doctor Honoris Causa al Școlii Politehnice din București (Marshal Constantin Prezan – Doctor Honoris Causa of the Polytechnic School of Bucharest)*
- **Dr. Remus Nică**: *De la Unirea din 1918 la începutul celui de-Al Doilea Război Mondial. Premise și evoluții. (From 1918 Unification to the Beginning of the Second World War. Premises and evolution.)*
- **Liviu Țăranu**, Consilier CNSAS: *1918 - Lecții pentru prezent (1918 – Lessons for the present)*
- **Dr. Alin Spânu**: *1918 - Lumini și umbre (1918 - Lights and shadows)*

**Time:** 10.30 – 11.30

**Location:** IMST Faculty main hall, CD building

**Activities:** ICAMaT 2018 & POLCOM 2018 – participants’ registration

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**Time:** 11.30 – 13.00

**Location:** Room CD 008 - IMST Faculty

**Activities:**

**Opening ceremony of ICAMaT 2018 & POLCOM 2018 Conferences**

*Welcome speech:*

- **Prof. Cristian DOICIN**, Dean of the Faculty of Engineering and Management of Technological Systems, POLITEHNICA University of Bucharest, Romania

**Plenary sessions – Chairs: Prof. Tom SAVU, Prof. Constantin OPRAN**

- **Marcel DIACONU**, ASPAPLAST – Romanian Plastics Processor Employers' Association: *Romanian plastics industry - European level*
- **Silviu BADEA**, ACAROM – Romanian Automobile Manufacturers Association: *The automotive industry in Romania, integration component plastics in automotive*
- **Prof. Marian GHEORGHE**, POLITEHNICA University of Bucharest, Romania: *Scientific research, creativity and integrative technology*
- **Prof. Tom SAVU**, POLITEHNICA University of Bucharest, Romania: *University research for supporting Industry 4.0 adoption*
- **Prof. Giuseppe LAMANNA\***, **Prof. Francesco CAPUTO**, University of Campania Luigi Vanvitelli, Aversa Italy: *Numerical testing and validation of LVI on composite plates*
- **Prof. Dumitru NEDELCU\***, **Simona MAZURCHEVICI**, "Gheorghe Asachi" Technical University of Iasi, Iasi, Romania: *"Liquid Wood" - The biodegradable material*
- **Prof. Luigi GRASSIA\***, **Prof. America CALIFANO**, **Prof. Alberto D'AMORE**, University of Campania Luigi Vanvitelli, Aversa Italy: *Self Learning Health Monitoring Algorithm in Composite Structures*



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**Time:** 13.30 – 14.30  
**Location:** CO hall - IMST Faculty  
**Activities:** **Lunch**

**Time:** 14.30 – 18.45  
**Location:** according to the conference programme (see below)  
**Activities:** **Paper presentations on sections**

**Time:** 19.30 – 23.00  
**Location:** POTCOAVA restaurant  
**Activities:** **Gala Dinner**



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## Sections

Thursday, 1 <sup>st</sup> of November 2018, 14.30 -18.30	
Section 1	Technologies for Composite Products - Room <b>CD 008</b>
Section 2	Technologies for Polymeric Products - Room <b>CB 207</b>

Section 1 - Technologies for Composite Products <i>Room CD 008 / 14.30 – 18.30</i> <i>Section Chairs: Giuseppe LAMANNA, Alessandro De LUCA</i>	
1.	Luigi Grassia and Alberto D’amore <i>The Anomalies of Polymers at Nanoscale as a Tool to Enhance the Fatigue Life of Structural Composites</i>
2.	Catalin Jianu, Giuseppe Lamanna, Constantin Opran <i>Research Regarding Embedded Systems of Robotic Technology for Manufacturing of Hybrid Polymeric Composite Products</i>
3.	Dan Savastru, Sorin Miclos, Roxana Savastru and Ion Lancranjan <i>Automobile Structural Health Monitoring Performed Using Long Period Grating Fiber Sensors</i>
4.	Irina Nicola - Plastic Technology Service <i>Powder Injection Moulding &amp; Freeformer with Arburg</i>
5.	Sorin Miclos, Dan Savastru, Roxana Savastru and Ion Lancranjan <i>Torsion Sensor Made of A Super Structure Fiber Bragg Grating Embedded Into Polymer Matrix of an Automobile Composite Material Mechanical Part</i>
6.	Dan Savastru, Sorin Miclos, Roxana Savastru and Ion Lancranjan <i>Composite Material Damage Monitoring Using Embedded in Polymer Matrix Optical Fiber Bragg Grating or Long Period Grating Sensors</i>
7.	Sorin Miclos, Dan Savastru, Roxana Savastru and Ion Lancranjan



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	<i>Long Period Grating Fiber Temperature Sensor Embedded Into Polymer Matrix of an Automobile Composite Material Mechanical Part</i>
8.	Sorin Ion – Romturingia Romania <i>Romturingia – Automotive Composites Structures</i>
9.	Luigi Grassia, America Califano and Alberto D'Amore <i>Self Learning Health Monitoring Algorithm in Composite Structures</i>
10.	Diana Cotoros, Anca Stanciu and Angela Repanovici <i>Critical Analysis of Composite Materials for Manufacturing Upper Limbs Orthoses</i>
11.	Diana Cotoros and Anca Stanciu <i>Wear Analysis by Digital Microscopy of Composite Material Dental Prostheses</i>
12.	Catalin Grigorescu - Vector Quality Group <i>VectorQ- dedicated to material testing</i>
	<b>Coffee Break</b>
13.	Calin-Dumitru Coman and Dan Mihai Constantinescu <i>Effects of Bolt Preload on Failure Mechanisms for Hybrid Metal-Composite Bolted Joints</i>
14.	America Califano <i>Fatigue of Composite Materials Subjected To Variable Loadings</i>
15.	Raffaella Dell'Aversano <i>Polymer-Modified Calcium-Aluminate Macro Defect Free (MDF) Cements</i>
16.	Donato Perfetto, Alessandro De Luca and Giuseppe Lamanna <i>Investigation on Composite Energy Absorbers of a Composite Fuselage Section Subjected To Vertical Drop Test</i>
17.	Alessandro De Luca, Donato Perfetto and Francesco Caputo <i>A Numerical Approach for the Investigation of Guided-Waves Propagation Mechanisms in Reinforced Polymers through a DoE Analysis</i>
18.	Tünde Caba - Bosch Romania



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	<i>Industry 4.0 solution: Interactive communication platform for manufacturing industries</i>
19.	Aida Ghiulnare Pantazi, Geanina Mihai, Oana Lazar, Stefania Marin, Alexandru Pumnea, Alin Jderu and Marius Enachescu <i>Adhesion Studies for Nanocomposite Thin Films with Applications as Active Layers in Organic Photovoltaic Cells</i>
20.	Mario Caterino, Alessandro Greco and Elena Laudante <i>Robotic Simulation Technique for Validating a Working Process on Composite Components</i>
21.	Alexandru Pumnea, Calin Moise, Alin Jderu, Aida Pantazi, Oana Tutunaru, Marius Enachescu and Mihai Sorin Ion <i>Polymer – Carbon Nanotube Composites Based Organic Solar Cells</i>
22.	Gabriel Raicu and Alexandra Raicu <i>Composite Materials and Cyberspace Constraints</i>
23.	Sorin Ionel - Auto Cobalcescu Romania <i>Auto Cobalcescu automotive integrated complex</i>
24.	Giuseppe Lamanna and Francesco Caputo <i>Numerical Testing and Validation of LVI on Composite Plates</i>
25.	Ion Mihai Sorin and Opran Constantin Gheorghe <i>The Researches Regarding Manufacturing Process of Large Parts Made By Polymer Matrix Composites</i>
26.	Ion Mihai Sorin, Ghionea Ionut, Lazar Oana Andreea, Enachescu Marius and Opran Constantin Gheorghe <i>Manufacturing Technologies of Hydraulic Pumps Made By Polymeric Composites Materials</i>

<b>Section 2 - Technologies for Polymeric Products</b> <i>Room CB 207/ 14.30 – 18.30</i> <i>Section Chairs: Constantin OPRAN, Luigi GRASSIA</i>	
1.	Daniiel Serban, Laurentia Alexandrescu and Constantin Gheorghe Opran <i>Research Regarding Moulding of Fuel Cell Bipolar Plates Made By Polymeric-Carbon Composites</i>





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2.	Mirela Apostoaie and Mihaela Baritz <i>3D Printing Procedure Applied in the Design of Portable Devices for Visual Aid</i>
3.	Cristina Biris and Mihaela Oleksik <i>Study about Mechanical Properties of Materials Obtained By Thermoforming</i>
4.	Sergiu Sora - Engel Injectie Romania <i>Engel everywhere &amp; Engel Romania</i>
5.	Nedelcu Dumitru, Simona Plavanescu Mazurchevici, Munteanu Corneliu, Marguta Alina and Istrate Bogdan <i>Micro-structural and morphological analyses of coated "liquid wood" samples by ceramic particles</i>
6.	Adrian Sorin Rosca <i>Influence of Gates on Quality Parameters for a Joystick Handler</i>
7.	Elena Grosu and Constantin Opran <i>Polyvinyl Chloride Antibacterial Recipes for Medical Devices</i>
8.	Mircea Bocioaga - Magic Engineering <i>DIGIMAT and Finite Element Analysis MSC Software applications in the Study of Polymers and Composites</i>
9.	Corneliu Druga, Ileana Rosca and Radu Necula <i>Wear Failure Analysis of UHMWPE Acetabular Cup in THR</i>
10.	Corneliu Druga, Ileana Rosca and Radu Necula <i>Designing, Manufacturing and FEA Analyzing of an Intervertebral Disc Made From Uhmwpe</i>
11.	Adelina Hrițuc, Margareta Coteață, Oana Dodun, Gheorghe Nagîț and Laurențiu Slătineanu <i>The Analysis of an Equipment for Testing the Processability by Injection Molding of Plastics on The Basis of Axiomatic Design Principles</i>
12.	Razvan Nedelcu – Meusburger <i>Meusburger - general presentation</i>
	<b>Coffee Break</b>



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13.	Sonia Capece, Mario Buono, Francesca Cascone, Janitzio Egido Villarreal and Francesco Caputo <i>Biomimetic Design and Advanced Materials for Fixing Innovative Systems</i>
14.	Emil Oanta and Alexandra Raicu <i>Principles Regarding the Structuring of the Hybrid Models in Engineering</i>
15.	Calin Constantin Moise, Alexandru Pumnea, Krzysztof Winkler and Marius Enachescu <i>Coordination Fullerene Polymers as Acceptor Layer in Planar Perovskite Solar Cells</i>
16.	Daniiel Serban - D&D Plastic <i>D&amp;D Plastic - Innovation and Technology</i>
17.	Ion Riza and Constantin Opran <i>Modelling the Diffusion with Fick, Bessel and Kummer Functions</i>
18.	Ioana Maior, Ana-Maria Albu and Marius-Stelian Popa <i>Comparative Studies Regarding the Synthesis and Characterization of Cellulose Based-Polymer Assemblies for Fuel Cell Applications</i>
19.	Claudia Carotenuto, Luigi Grassia, Liana Pasqualina Paduano and Mario Minale <i>Synergic Use of Rheometry and Calorimetry to Investigate Ethylene-Vinyl-Acetate Copolymer Viscoelasticity</i>
20.	Aurelian Popescu, Mihai Stafe, Dan Savastru, Laurentiu Baschir, Constantin Negutu and Niculae Puscas <i>Study of Surface Plasmon Resonance Structure with As<sub>2</sub>S<sub>3</sub> Amorphous Chalcogenide Compound Waveguide</i>
21.	Paul Octavian Stanescu, Ionut Cristian Radu, Catalin Zaharia, Eugenia Vasile Tanasa and Horia Iovu <i>Synthesis and Characterization of Polymeric Microcapsules for Potential Soft Tissue Applications</i>
22.	Baciu Florin, Vlăsceanu Daniel, Hadăr Anton <i>The Influence of 3D Printing Parameters on Elastic and Mechanical Characteristics of Polylactide</i>



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23.	Nitoi Dan, Opran Constantin and Samer Florin <i>Finite Element Modeling of Thermal Behavior of Solar Cells</i>
24.	Nedelcu Dumitru and Mazurchevici Simona <i>"Liquid Wood" – The Biodegradable Material</i>
25.	Cristian Eugen Răducanu, Iuliana Jipa, Gabriela Isopencu, Anicuta Stoica-Guzun <i>Hybrid bacterial cellulose composites for environmental protection</i>