IEEE 24th International Symposium for Design and Technology in Electronic Packaging

Conference and Exhibition

25th – 28th October 2018, Iași, România

The Autumn Convention of the Electronic Packaging Community

Symposium Programme

SIITME 2018

SIITME 2018 - Conference program

SIITME 2018

The autumn convention of electronic packaging community

International Symposium for Design and Technology in Electronic Packaging

Conference & Exhibition
www.siitme.ro

24th Edition, 25-28 October 2018

Organized by:

Gheorghe Asachi Technical University of Iasi
Faculty of Electronics, Telecommunications and Information Technology
http://www.etti.tuiasi.ro/

Continental Automotive Romania

University Politehnica of Bucharest
http://www.upb.ro
Faculty of Electronics, Telecommunications and Information Technology
http://www. electronica.pub.ro
Center for Technological Electronics and Interconnection Techniques
http://www.cetti.ro

Association for Promoting Electronics Technology, APTE
http://www.apte.org.ro

and supported by:

EPETRUN (Electronic Packaging Education Training and Research University Network)

SIITME 2018, the well-established Forum for Electronics Packaging Discussions

Dear participants, dear friends and members of the Electronics Packaging community,

It is a pleasure for me to have the possibility to welcome you at SIITME 2018. The beautiful City of Iasi, historical capital of Moldavia, one of the most important cultural cities of Romania, is for four days our host. During these four days, a large number of participants from the electronics industry and academia come together to present and to discuss, in a very friendly environment, topics related to the electronic products, from design to fabrication and assembling. Starting with circuit design, continuing with modeling and simulation and all the next steps up to manufacturing and testing stages, the accepted papers highlight the results of many researchers from the academia and industry.

A significant accent, this year, is put on a very important issue related to the product development chain. I mean the reliability. The topics become more and more important for the product competitiveness. A product can be reliable only if reliability is taking into consideration in each step of the product creation. The technological workshop and some of the keynote speeches will highlight several important aspects related to product reliability.

As usual for SIITME series of conferences, the event will represent a fruitful environment for young researchers, helping them to present and discuss their achievements. During the poster sessions, based on oral presentations in front of all attendees and on direct discussions next to their posters, the presenters have the possibility to wake up the interest of the audience for their scientific work. And the audience, a professional one, is a good blend between specialists from industry and professors/researchers from academia. For many young researchers such a format of the presentation approach represents a true training activity aimed to develop their future professional life.

The excellent collaboration between academia and industry is obvious and to identify this we have only to look to the organizing structure of our conference. Without a strong commitment coming from the both sides it is difficult to be imagined a high-quality event like this one. As SIITME General Chair I want to thank to all organizing committees for their tremendous work focused to highlight the importance of the electronics industry for our region.

The high quality of our event we have to thank to the Conference Chair and to the Conference Co-Chair. They succeeded, and sometimes was not easy, to ensure the proper way to bring academia and industry together, in both benefits.

Special thanks to both General Co-Chairs, the academic and the industrial one, for working and supporting, with many dedications, this edition.

Thank all of you for coming to SIITME. I hope to see you again next year, 2019, in Cluj-Napoca, where we will attend and celebrate the 25th SIITME edition.

Prof. D.H.C. mult. Paul SVASTA, Ph.D.
University Politehnica of Bucharest, Romania,
Association for Promoting Electronics Technology
SIITME General Chair

Foreword

23 years have already passed from the first edition of the International Symposium for Design and Technology in Electronics Packaging initiated in 1995 by University Politehnica of Bucharest. The interest in the Symposium grew edition by edition and nowadays a true convention of the electronic packaging community and, generally speaking, of the electronics field, being a well-established and internationally recognized scientific and technical event in the Central and Eastern Europe area.

We are proud to host the 24th edition of this prestigious event in Iași, one of the most beautiful cities of Romania and a citadel of Romanian culture, education and science. According to local traditions and historical sources, Iași was built on seven hills, the great hilly landscape making possible to compare the town with the city of Rome. Iași became in the last two decades a strong high-tech R&D&I environment, hosting numerous well known national and multi-national companies. One of them is Continental Automotive Romania, Iasi branch.

Continental develops pioneering technologies and services for sustainable and connected mobility of people and their goods. Founded in 1871, the technology company offers safe, efficient, intelligent and affordable solutions for vehicles, machines, traffic and transport. In 2016, Continental generated sales of €40.5 billion and currently employs more than 230,000 people in 56 countries.

Continental Iași has been established in 2016. In 11 years of activity, the Research & Development centre grew from a number of 30 people in 2006 to over 1500 employees, becoming the largest technical employer from Iași. During this period, the company invested over 40 million EUR locally.

The Faculty of Electronics, Telecommunications and Information Technology of Gheorghe Asachi Technical University of Iasi and the local branch of Continental Automotive Romania are the proud co-organizers of this SIITME edition.

We think it is very significant that the worlds of both academia and industry are brought together by this occasion. It emphasizes the interest and the link between the main actors: young researchers, academic staff and representatives of the electronics industry.

The success of a conference depends on many factors. Let us mention the involvement of Technical Committee members and other distinguished personalities and the efforts of the special session organizers. The contribution of the reviewers to ensure the quality of the accepted papers is highly appreciated.

We would like to congratulate and thank all those who invested a great deal of their time and tremendous efforts in organizing the Symposium – not an easy task, but an important one.

Our local organizing committee will make sure that this edition of SIITME will continue the already established tradition of encouraging dialogue between academia and industry.

We hope you will have a very enjoyable stay in Iasi!

Prof. Daniela Tărniceriu, Ph.D.
Dean of The Faculty of
Electronics,
Telecommunication and
Information Technology,
Gheorghe Asachi Technical
University of Iasi
SIITME 2018 Conference
Chair

Marian Petrescu, Ph.D.
Continental Automotive Romania Iasi
Location Manager
SIITME
Conference and
Exhibition General
Industrial Chair

Thursday, October 25

12:30 – 18:00	**Registration** (Registration desk, Hotel Lobby)
13:30 – 17:00	**Human Resources Workshop** (Mezanin Room)
17:00 – 19:30	**Industry-Academia Panel Discussion: "Reliability: from Requirements through Design & Testing of Components, Packages, Boards and Final Level Assemblies"** (Cuza Room)
19:30 – 21:00	**Welcome reception** (Hotel Unirea restaurant)
21:00 – 22:00	**Steering Committee Meeting** (Cocktail Room)
22:00 – 23:00	**IEEE – EPS Hu & Ro Joint Chapter Meeting** (Cocktail Room)

Friday, October 26

07:00 – 08:00	**Breakfast** (Hotel Unirea restaurant)
08:00 – 12:00	**Registration** (Registration desk, Hotel Lobby)
08:30 – 08:45	**Opening ceremony, Welcome words** (Cuza Room)
08:50 – 10:30	**Plenary Oral Session 1** (Cuza Room)
10:30 – 11:00	**Coffee Break**
11:00 – 12:00	**Technical Exhibition Opening - Industrial Session** (Cuza Room & Expo space)
12:00 – 13:40	**Plenary Oral Session 2** (Cuza Room)
13:40 – 14:30	**Lunch**
14:30 – 16:30	**Poster Session 1** (Cuza & Cocktail Room)
16:30 – 19:00	**Cultural Program - Visit at Gheorghe Asachi Technical University of Iasi**
19:00 – 22:00	**Romanian Dinner** (Ristreto Restaurant)

Saturday: October 27

08:00 – 09:00	**Breakfast** (Hotel Unirea restaurant)
09:00 – 11:00	**Registration** (Registration desk, Hotel Lobby)
09:00 – 11:00	**Plenary Oral Session 3** (Cuza Room)
11: 00 – 11:10	**Coffee Break**
11:10 – 13:10	**Poster Session 2** (Cuza & Cocktail Room)
13:10 – 14:10	**Industrial Session** (Cuza Room & Expo space)
14:10 – 15:00	**Lunch**
15:00 – 17:00	**Poster Session 3** (Cuza & Cocktail Room)
17:00 – 18:00	**Plenary Oral Session 4** (Cuza Room)
18:00 – 18:15	**Coffee Break**
18:15 – 19:15	**Plenary Oral Session 5** (Cuza Room)
19:15 – 20:00	**Steering Committee Meeting** (Cocktail Room)
20:00 – 23:00	**Conference Dinner and Awarding session** (Hotel Unirea restaurant)

Sunday: October 28

07:30 – 09:00	**Breakfast** (Hotel Unirea restaurant)
09:00 – 10:00	**Closing ceremony, looking forward to SIITME 2019** (Cuza Room)
10:00– 11:00	**Farewell coffee, End of Symposium**

Industry-Academia Panel Discussion
"Reliability: from Requirements through Design & Testing of Components, Packages, Boards and Final Level Assemblies"
25 October 2018, Cuza Room

16:30 – 17:00	**Registration**
17:00 – 17:10	**Welcome, panel subjects reasoning and stakeholder introduction** Paul SVASTA, University Politehnica of Bucharest, Romania Cosmin MOISA, Continental Automotive Romania

Session I – Moderators:
Dr. Bálint MEDGYES, Budapest University of Technology and Economics
Dr. Bogdan MIHĂILESCU, Association for Promoting Electronic Technology – APTE

17:10 – 17:30	**Introduction in actual requirements, qualification infrastructure and lessons learned for automotive products** Radu SIMON, Adrian CRETU - Quality Laboratories, Continental Automotive
17:30 – 17:50	**Importance of humidity in reliability tests** Dr. Balázs ILLÉS - Budapest University of Technology and Economics
17:50 – 18:10	**Examples of reliability failure analysis** Dr. Petru NEGREA, ICER - Research Institute for Renewable Energy, Politehnica University of Timisoara
18:10 – 18:15	Open discussion session 1
18:15 – 18:20	**Coffee break**

Session II – Moderators:
Dr. Olivér KRAMMER, Budapest University of Technology and Economics
Dr. Traian Cornel CUCU, Global Applications and Technologies Expert Group Director, Alpha Assembly Solutions, USA

18:20 – 18:40	**Making an Electronics Device into a Product: Probabilistic Design for Reliability (PDfR) Concept and the Role of Failure-Oriented-Accelerated-Testing (FOAT)** Dr. Ephraim SUHIR - Portland State University, Portland, OR, USA, Bell Laboratories, Physical Sciences and Engineering Research Division, Murray Hill, NJ (ret), and Technical University, Vienna, Austria, and ERS Co, 727 Alvina Ct., Los Altos, CA
18:40 – 19:00	**System reliability in automotive** Dr. Daniel PETRISOR, Continental Automotive
19:00 – 19:20	**Material challenges posed by the increasing integration of electronics systems in vehicles** Steven BROWN - Global Automotive Electronics Director at MacDermid Performance Solutions
19:20 – 19:30	Open discussion session 2. Conclusions and Take-aways

General Chair:
Paul SVASTA, University Politehnica of Bucharest, Romania
Association for Promoting Electronics Technology
General Academic Co-Chair:
Dan PITICĂ, Technical University of Cluj-Napoca, Romania
General Industrial Co-Chair:
Marian PETRESCU, Continental Automotive, Iasi

Conference Chair:
Daniela TĂRNICERIU, Gheorghe Asachi Technical University of Iaşi, Romania
Conference Co-Chair:
Cosmin MOISA, Continental Automotive, Timisoara, Romania

Technical Program Chair:
Detlef BONFERT, Fraunhofer EMFT, Münich, Germany
Technical Program Co-Chair:
Norocel CODREANU, University Politehnica of Bucharest, Romania

Awards Committee Chair:
Heinz WOHLRABE, Dresden University of Technology, Dresden, Germany

Scientific Committee Chair:
Balázs ILLÉS, Budapest University of Technology and Economics, Hungary
Scientific Co-Chairs:
Heinz WOHLRABE, Dresden University of Technology, Germany
Ciprian IONESCU, Politehnica University of Bucharest, Romania

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Ioan PLOTOG, University Politehnica of Bucharest, Romania
Promotion & Advertising Committee Co-Chair: Mihai BRÂNZEI, University Politehnica of Bucharest, Romania

Human Resource Education and Training Committee Chair:
Aurelia FLOREA, MIELE Tehnica, Braşov, Romania

Publication Chair:
Gabriel CHINDRIŞ, Technical University of Cluj- Napoca, Romania
Publication Co-Chair:
Bogdan MIHĂILESCU, University Politehnica of Bucharest, Romania
International Publication Advisor:
Zsolt ILLYEFALVI-VITÉZ, Budapest University of Technology and Economics, Hungary

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Florentina STĂLINESCU, Association for Promoting Electronics Technology, Romania

Many thanks to the reviewers for their outstanding effort to assure a high quality of abstracts of conference papers.

Reviewers:

Adrian Tăut, Technical University of Cluj-Napoca, Romania

Alexandra Fodor, Technical University of Cluj-Napoca, Romania

Alexandru Vasile, University Politehnica of Bucharest, Romania

Alin Grama, Technical University of Cluj-Napoca, Romania

Alin Gheorghiţă Mazăre, University of Piteşti, Romania

Aurel Gontean, Politehnica University of Timişoara, Romania

Balázs Illés, Budapest University of Technology and Economics, Hungary

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Dorel Aiordachioaie, Dunărea de Jos University of Galaţi, Romania

Gabriel Chindriş, Technical University of Cluj-Napoca, Romania

Ioan Liţă, University of Piteşti, Romania

Laurenţiu Frangu, Dunărea de Jos University of Galaţi, Romania

Mihaela Hnatiuc, Maritime University of Constanta, Romania

Mihai Dărăban, Technical University of Cluj-Napoca, Romania

Norocel Codreanu, University Politehnica of Bucharest, Romania

Oliver Krammer, Budapest University of Technology and Economics, Hungary

Ovidiu Aurel Pop, Technical University of Cluj-Napoca, Romania

Paul Svasta, University Politehnica of Bucharest, Romania

Pavel Mach, Technical University of Prague, Czech Republic

Petre Ogruţan, Transilvania University of Braşov, Romania

Radu Gabriel Bozomitu, Gheorghe AsachiTechnical University of Iaşi, Romania

Rajmond Jano, Technical University of Cluj-Napoca, Romania

Viman Liviu, Technical University of Cluj-Napoca, Romania

Viorel Nicolau, Dunărea de Jos University of Galaţi, Romania

Zsolt Illyefalvi-Vitez, Budapest University of Technology and Economics, Hungary

SIITME History

1995 - Utilizarea calculatoarelor în Tehnologia Subansamblelor electronice CAE-CAD-CAM, UPB, Bucureşti

SIITME'96, Al II-lea Seminar Internaţional de Informatică Tehnologică în domeniul Fabricaţiei Modulelor electronice, 23-24 Octombrie 1996, Bucureşti, România

SIITME'97, The 3rd International Seminar for Informatics and Technology in the domain of Electronic modules, 22-23 October 1997, Bucharest, Romania

SIITME'98, The 4th International Symposium for Informatics and Technology in Electronic Modules Domain, September 22-24 1998, Bucharest, Romania

SIITME'99, The 5th International Symposium for Design and Technology in Electronic Modules, September 23-26 1999, Bucharest, Romania

SIITME 2000, The 6th International Symposium for Design and Technology for Electronic Modules, September 21-24, 2000, Bucharest, Romania

SIITME 2001, The 7th International Symposium for Design and Technology of Electronic Modules, September 20-23, 2001, Bucharest, Romania

SIITME 2002, The 8th International Symposium for Design and Technology of Electronic Modules, September 19-22, 2002, Cluj-Napoca, Romania

SIITME 2003, The 6th International Symposium for Design and Technology of Electronic Packages, September 18-21, 2003, Timişoara, Romania

SIITME 2004, The 10th International Symposium for Design and Technology for Electronic Modules, September 23-26 2004, Bucharest, Romania

SIITME 2005, International Symposium for Design and Technology of Electronic Packaging, 11th Edition, September 22-25, 2005, Cluj-Napoca, Romania

SIITME 2006, International Symposium for Design and Technology of Electronic Packaging, 12th Edition, September 21-24, 2006, Iaşi, Romania

SIITME 2007, International Symposium for Design and Technology of Electronic Packaging, 13th Edition, September 20-23, 2007, Baia Mare, Romania

SIITME 2008, International Symposium for Design and Technology of Electronic Packaging, 14th Edition, September 18-21, 2008, Predeal, Romania

SIITME 2009, 15th International Symposium for Design and Technology of Electronic Packages, 17-20 September 2009, Gyula, Hungary

SIITME 2010, 16th International Symposium for Design and Technology in Electronic Packaging, September 23-26, 2010, Piteşti, Romania.

SIITME 2011, IEEE 17th International Symposium for Design and Technology in Electronic Packaging, October 20-23, 2011, Timişoara, Romania.

SIITME 2012, IEEE 18th International Symposium for Design and Technology in Electronic Packaging, Alba Iulia

SIITME 2013, IEEE 19th International Symposium for Design and Technology in Electronic Packaging, Galati

2014 IEEE 20th International Symposium for Design and Technology in Electronic Packaging, October 23–26, 2014, Bucharest, România

2015 IEEE 21st International Symposium for Design and Technology in Electronic Packaging, October 22-25, 2015, Brasov, România

2016 IEEE 22nd International Symposium for Design and Technology in Electronic Packaging, October 20-23, 2016, Oradea, România

2017 IEEE 23rd International Symposium for Design and Technology in Electronic Packaging - October 26-29, 2017, Constanta, Romania

Keynote speaker:

Soufiane Bendaoud, Business Development Manager
Texas Instruments

e-mail: Soufiane.Bendaoud@ti.com

Presentation:
"**High Performance Analog**"

Soufiane has held several roles in the semiconductor industry, ranging from senior applications engineers to product definition and business development.

He has worked closely with analog and digital designers to define world class products which have become industry standards.

Soufiane has published over 50 articles, white papers, and applications translated in more than 6 languages around the world. He holds a Bachelors Degree of Electrical Engineering and a Masters from the University of California at Berkeley and San Francisco.

Keynote speaker:

Traian Cornel Cucu, Global Applications and Technologies Expert Group Director

Alpha Assembly Solutions, USA

e-mail: Traian.Cucu@alphaassembly.com

Presentation:
"Low Temperature Solder Alloys's influence on Solder Joint Reliability"

Traian Cucu is presently leading the Global Applications and Technologies Expert Group at Alpha Assembly Solutions. He was assigned to oversee the new applications and technologies developments which are part of the full solutions offering for the SMT and die attach markets.

He received his B.Sc degree from Politehnica University of Timisoara, , Faculty of Electrical and Power Engineering, Specialization: Industrial Power Systems and his Ph.D. from Politechnica University of Bucharest, Faculty of Electronics, Telecommunications and Information Technologies, Specialization: Electronic Technology.

He was part of the technical team from Cookson Electronics that was implementing tin-lead SMT process in late 1990s during the transition from THT to SMT. Early 2000s he was involved in the development and implementation of the lead-free technology for both wave and SMT processes, working for Cookson Electronics and Brady. He was working with major mobile phone OEMs in order to implement new processes that will enable a quicker transition to finer pitch designs and 3D assembly systems for the next generation devices.

He was also actively involved, while working with Brady, in the process traceability in electronics with a big accent on the automotive industry. As part of the Alpha technical team he was continuing his work in the assembly process focusing on tin-lead and lead-free processes for automotive. From 2013, as Global Product Manager for Solder Paste he was in charge of solder paste product development, overseeing the product development programs and directing Alpha's global solder paste strategy, during a period of 4 years. During that period he was directly involved in new solder paste chemistry platforms developments, being part of the R&D team that have been granted a patent for a new approach in solder paste chemistry. Since 2017 he is part of the R&D department, leading the G.A.T.E. Group.

Keynote speaker:

MAREK LIS, Senior Analog Applications Engineer
Texas Instrument, Inc.

e-mail: Lis_marek@ti.com

Presentation:
"**A Long-term Stability of IC Parameters and the Temperature Acceleration Factor**"

Marek Lis is a Senior Analog Applications Engineer on Precision Analog (PA) High Performance Linear team at Texas Instruments - Tucson Design Center. Prior to its acquisition by Texas Instruments in 2001, he had worked for 10 years at Burr-Brown Corporation as an analog IC design engineer introducing over twenty new products including JFET and CMOS op amps and LDO's. Afterwards, he held for eight years a design manager position in charge of development of series/shunt voltage references as well as instrumentation amplifiers and op amps. In current position as an application engineer, co-invented Green-Lis op amp macro-model-state-of-the-art PSpice-based operational amplifier model architecture optimized for Tina-TI; it is a behavioral simulation tool that meticulously simulates the performance of over twenty ac and dc parameters - it is a highly innovative model architecture that is unparalleled in the industry. His current focus is to provide customer support covering topics of operational amplifiers, voltage references as well as answer questions across TI product lines regarding long-term shift of various IC's parameters and statistical guarantee of various specifications over temperature. He also spends a significant amount of time conducting technical seminars all over the globe covering in-depth topics related to analog design and circuit applications.

He studied Electrical Engineering at the University of Michigan and University of Arizona.

Keynote speaker:

Dr. Ephraim Suhir,

Portland State University, Portland, OR, USA ,

Bell Laboratories, Physical Sciences and Engineering Research Division, Murray Hill, NJ (ret),

Technical University, Vienna, Austria, and

ERS Co. , 727 Alvina Ct., Los Altos, CA

e-mail: suhire@aol.com

Presentation:
"Solder Joint Interconnections in Automotive Electronics: Design-for-Reliability and Accelerated Testing"

Dr. Suhir is Life Fellow of IEEE; Fellow of the American Society of Mechanical Engineers (ASME), American Physical Society (APS), Institute of Physics (UK), Society of Optical Engineers (SPIE), International Microelectronics and Packaging Society (IMAPS), the Society of Plastics Engineers (SPE); Associate Fellow of the American Institute of Aeronautic and Astronautic (AIAA); and Foreign Full Member (Academician) of the National Academy of Engineering, Ukraine, the country where he was born.

Dr. Suhir has authored about 300 publications (patents, books, book chapters, papers), presented many keynote and invited talks worldwide and received numerous professional awards, including 1996 Bell Labs Distinguished Member of Technical Staff Award for developing methods to predict the reliability of AT&T and Lucent Technologies products; 2000 IEEE-CPMT Outstanding Sustained Technical Contribution Award for outstanding and continuing contributions to the technologies in fields encompassed by the CPMT Society; and 2004 ASME Worcester Read Warner Medal for outstanding contributions to the permanent literature of engineering. He is the third Russian American, after Steven Timoshenko and Igor Sikorsky, who received this prestigious award.

Keynote speaker:

Dirk Zittlau, Director of Product Development Center
Continental AG.

e-mail: Dirk.Zittlau@continental-corporation.com

Presentation:
"**Updates in highly automated driving – key components for driver-vehicle interaction**"

Dirk Zittlau is globally managing the Product Development Center Interior Camera Products within the Business Unit Interior Instrumentation and Driver Human Machine.

He is active since more than 20 years in the Automotive Research and Development, for both advanced development and direct OEM serial project developments. The development activities had focus on active safety systems, included: vision processing applications, information and comfort instrumentation including graphical processing products.

As a response to EU's pursuit to reduce traffic accidents by half in 2010, he published in 2006 the article „Electronics for more safety - Assistance and safety systems preventing accidents". Dirk Zittlau has multiple granted patent applications as author and co-author related to automotive applications, especially for safety relevant systems.

The current development activities are related to the Driver and Cabin Monitoring,

focusing on both safety and comfort use, thus pushing the integration and industrialization within the automotive environment. This activity will also respond to the global goal and EU's initiative for „Vision Zero" to further decrease accidents by half in 2020 and up to none in 2050.

He has studied Electronics at Friedrich-Alexander-Universität Erlangen-Nürnberg.

Keynote speaker:

Heinz Wohlrabe, Ph.D.
TU Dresden ZmP (Centre of Microtechnical Production)

e-mail: heinz.wohlrabe@tu-dresden.de

Presentation:
"**Reliability of Solder Joints – Determination, Statistical Analysis and Dependencies to other Characteristics**"

Dr.-Ing. habil. Heinz Wohlrabe (born 1955) studied 1974-1978 elektrotechniques at Technische Universität Dresden (Dresden University of Technology). He've got the PHD 1984 at the same university. The main important topic were the usage of statistical quality control in electrtonics technology. The main focus of his scientific work over alll this time was the usage of mathematical-statistical methodes (namely statistical process control, machine and process capability analysis, Design of Experiments) for the quality assurance in electronic production processes. The creation and execution of lectures in this fields belongs also to his working field. Special measurement procedures for the quality assurance (placing and printing accuracy), the measurement of the warpage behavior during soldering and the numerical calculation of reliability data complete his reasearch field.

He habilitated in Dec. 2008. The main focus is once more the quality assurance in the SMD-production.

Friday, October 26

08:30 – 08:45 **Opening ceremony, Welcome words**
       (CUZA Room)

Daniela TĂRNICERIU, Gheorghe Asachi Technical University of Iaşi, Romania
Marian PETRESCU, Continental Automotive SRL, Romania

Friday, October 26

08:50 – 10:30 **Plenary Oral Session 1**
       (CUZA Room)

Session Chair: Zsolt ILLYEFALVI-VITÉZ, Budapest University of Technology and Economics, Hungary
Session Co-Chair: Dan PITICĂ, Technical University of Cluj- Napoca, Romania

08:50 - KN1 - Updates in highly automated driving – key components for driver-vehicle interaction
Dirk ZITTLAU, Director of Product Development Center, Continental AG, Germany

09:30 - KN2 - High Performance Analog
Soufiane BENDAOUD, Business Development Manager, Texas Instrument, Inc.

10:10 - O1 - Far field versus Near field measurement in Automotive environment
Andrei Marius SILAGHI (Politehnica University of Timisoara); Alexandru Motateanu (Politehnica University of Timisoara); Relu AIPU (University of Craiova); Aldo DE SABATA (Politehnica University of Timisoara)

Friday, October 26

11:00 – 12:00 **Technical Exhibition Opening – Industrial Session**
       (CUZA Room & Expo space)

Session Chair: Mihai BRÂNZEI, University Politehnica of Bucharest, Romania
Session Co-Chair: Traian Cornel CUCU, Global Applications and Technologies Expert Group Director, Alpha Assembly Solutions, USA

ARC Braşov, Romania	**Caelynx Europe, Romania**
PFARR STANZTECHNIK GmbH, Germany	**TENSOR SRL, Romania**

Friday, October 26

12:00 – 13:40 **Plenary Oral Session 2**
           (CUZA Room)

Session Chair: Heinz WOHLRABE, Dresden University of Technology, Dresden, Germany
Session Co-Chair: Gabriel CHINDRIŞ, Technical University of Cluj-Napoca, Romania

12:00 – KN3 - Solder Joint Interconnections in Automotive Electronics: Design-for-Reliability and Accelerated Testing
Pr Dr. Ephraim SUHIR, Portland State University, Portland, OR, USA , Bell Laboratories, Physical Sciences and Engineering Research Division, Murray HILL, NJ (ret), Technical University, Vienna, Austria, and ERS Co., Los Altos, CA

12:40 – KN4 - A Long-term Stability of IC Parameters and the Temperature Acceleration Factor
Marek LIS, Senior Analog Applications Engineer, The University of Michigan, The University of Arizona, Texas Instrument, Inc.

13:20 – O3 - The Complexities Caused for Tier 1's by Multiple Reliability Standards
Steve BROWN, Integrated Solutions Director, MacDermid Performance Solutions, England

Saturday, October 27

09:00 – 11:00 **Plenary Oral Session 3**
           (CUZA Room)

Session Chair: Florin-Constantin BERINDE, Continental Automotive Romania SRL, Romania
Session Co-Chair: Attila BONYÁR, Budapest University of Technology and Economics, Hungary

09:00 – KN5 - Reliability of Solder Joints – Determination, Statistical Analysis and Dependencies to other Characteristics
Heinz WOHLRABE, Dresden University of Technology, Dresden, Germany

09:40 – KN6 - Low Temperature Solder Alloys's influence on Solder Joint Reliability
Traian Cornel CUCU, Global Applications and Technologies Expert Group Director, Alpha Assembly Solutions, USA

10:20 – O3 - Change Detection in Time-Frequency Images by Feature Processing in Compressed Spaces

Dorel AIORDACHIOAIE, Dunarea de Jos University of Galaţi, Romania

10:40 – O4 - Design and Implementation of an LED-based Solar Simulator for Photovoltaic Cells Characterization

Ana BĂRAR (University Politehnica of Bucharest); Marian VLĂDESCU (UPB-CCO); Paul ŞCHIOPU (University Politehnica of Bucharest)

Saturday, October 27

13:10 – 14:10 **Industrial Session**
             (CUZA Room & Expo space)

Session Chair: Cosmin MOISA, Continental Automotive Timisoara srl, Romania
Session Co-Chair: Bogdan MIHĂILESCU, University Politehnica of Bucharest, Romania

Deery Brook, Romania   **Continental Automotive Romania**

NTT Data

Saturday, October 27

17:00 – 18:00 **Plenary Oral Session 4**
             (CUZA Room)

Session Chair: Tecla-Castelia GORAŞ, Gheorghe Asachi Technical University of Iaşi, Romania
Session Co-Chair: David BUSEK, Technical University of Prague, Czech Republic

17:00 – O5 - Weather Monitoring for Predicting Thermal Comfort and Energy Efficiency
George SUCIU (BEIA Consult & UPB); Cristian BECEANU (BEIA Consult & UPB); Marius DOBREA (BEIA Consult & UPB); Cristina BALACEANU (BEIA Consult & UPB)

17:20 – O6 - Intelligent command of an underground irrigation and fertilization system
Laurenţiu Mihai IONESCU (University of Piteşti); Alin MAZĂRE (University of Piteşti); Nadia BELU (University of Piteşti); Ioan LIŢĂ (University of Piteşti); Gheorghe ŞERBAN (University of Piteşti)

17:40 – O7 - Smart city emergency situations management system based on sensors network

Claudiu LUNG (Technical University of Cluj Napoca North University Center of Baia Mare); Buchman ATTILA (Technical University of Cluj Napoca North University Center of Baia Mare); Sabou SEBASTIAN (Technical University of Cluj Napoca North University Center of Baia Mare)

Saturday, October 27

18:15 – 19:15 - **Plenary Oral Session 5**
                    (CUZA Room)

Session Chair: Mihaela HNATIUC, Maritime University of Constanța, Romania
Session Co-Chair: Constantin PALEOLOGU, University Politehnica of Bucharest, Romania

18:15 – O8 - Education 4.0 - Artificial Intelligence assisted Higher Education: Early recognition System with Machine Learning to support Students' Success
Monica CIOLACU (TH Deggendorf & UPB CETTI)

18:35 – O9 - Publication Techniques for Young Scientists in the Field of Microelectronics Engineering
Balázs ILLÉS (BME-ETT); Agata SKWAREK (Institute of Electron Technology); David BUSEK (TU Prague); Oliver KRAMMER (BME-ETT); Attila GÉCZY (BME-ETT); Alexandra FODOR (Technical University of Cluj-Napoca); Karel DUSEK (TU Prague)

18:55 – O10 - A study on the Gm based current mode capacitance multipliers implementation
Gabriel I BONTEANU (Gheorghe Asachi Technical University of Iaşi); Arcadie CRACAN (Gheorghe Asachi Technical University of Iaşi); Radu G BOZOMITU (Gheorghe Asachi Technical University of Iaşi)

Posters Assessor Committee:

General Poster Session Chair: Heinz Wohlrabe, Technical University of Dresden, Germany
Co-Chair: Cristina Marghescu, University Politehnica of Bucharest, Romania

Nicolae BĂDULESCU, Tensor srl, Romania

Florin BERINDE – Continental Automotive Romania, Timisoara, Romania

Sabin BINDIU – Continental Automotive Romania, Timisoara, Romania,

Florin BURZA – Continental Automotive Romania, Timisoara, Romania

Atilla BONYÁR, Budapest University of Technology and Economics, Hungary

Radu BOZOMITU, Gheorghe Asachi Technical University of Iaşi, Romania

Mihai BRÂNZEI, University Politehnica of Bucharest, Romania

Mihai BURGHEAUA, Continental Automotive Romania, Iasi

Alin BURLACIUC, Continental Automotive Romania

Iulian BUŞU, Lumped Elements srl, Romania

Stefan CASTRAVETE, Caelynx Europe, Craiova

Vlad CEHAN, Gheorghe Asachi Technical University of Iaşi, Romania

Gabriel CHINDRIŞ, Technical University of Cluj-Napoca, Romania

Norocel CODREANU, University Politehnica of Bucharest, Romania

Gelu COMAN, Dunărea de Jos University of Galaţi, Romania

Mihai CENUSA, Continental Automotive Romania, Iaşi

Andrei DRUMEA, University Politehnica of Bucharest, Romania

Octavian ENACHI, Continental Automotive Romania, Iaşi

Tecla GORAS, Gheorghe Asachi Technical University of Iaşi, Romania

Fabian HENZE, Miele Tehnica srl Brasov, Romania

Mihaela HNATIUC, Maritime University of Constanţa, Romania

Balázs ILLÉS, Budapest University of Technology and Economics, Hungary

Ciprian IONESCU, University Politehnica of Bucharest, Romania

Laurenţiu IONESCU, University of Piteşti, Romania

Zsolt ILLYEFALVI-VITÉZ, Budapest University of Technology and Economics, Hungary

Olivér KRAMMER, Budapest University of Technology and Economics, Hungary

Emil LAZARCIUC, Continental Automotive Romania, Timisoara

Ioan LIŢĂ, University of Piteşti, Romania

Alin MAZĂRE, University of Piteşti, Romania

Bogdan MIHĂILESCU, University Politehnica of Bucharest, Romania

Cosmin MOISA, Continental Automotive Romania, Timisoara

Viorel NICOLAU, Dunarea de Jos University of Galati, Romania

Cosmin OBREJA Continental Automotive Romania, Timisoara

Marian ONICA, Continental Automotive Romania, Iaşi

Mihaela PANTAZICĂ, University Politehnica of Bucharest, Romania

Lucian Andrei PERIŞOARĂ, University Politehnica of Bucharest, Romania

Marian PETRESCU, Continental Automotive Romania, Iaşi

Agata SKWAREK, Institute of Electron Technology, Krakow, Poland

George SUCIU, BEIA Consult International srl, Romania

Roland SZABO, Continental Automotive Romania, Timişoara

Csaba TĂRCEAN, Continental Automotive Romania, Timisoara

Petru TOFANESCU, Continental Automotive Romania, Iaşi

Adrian TULBURE, University 1Decembrie 1918 Alba Iulia, Romania

Friday, October 26   Presenter: Stick-up poster after registration!

14:30 – 16:30   Poster Session 1

NOTE: Each author must deliver a maximum 3 minutes slide show presentation of her/his work.

Poster Session 1 (Cuza Center)

Dissemination session of MECA (M i c r o E l e c t r o n i c s C l o u d A l l i a n c e) project, www.meca-project.eu, Knowledge Alliance 562206-EPP-1-2015-1-BG-EPPKA2-KA; session supported by MECA

Session Chair: *Norocel CODREANU, University Politehnica of Bucharest, Romania*
Session Co-Chair: *Viorel NICOLAU, Dunarea de Jos University of Galaţi, Romania*

P1.1 Analysis of Criteria for and Benefits of Massive Open Online Courses (MOOCs)
Zsolt ILLYEFALVI-VITEZ (BME-ETT)

P1.2 Emotion Identification Using Writing System
Mihaela E. HNATIUC (Constanţa Maritime University); Cătălin IOV (Electronics, TRIAS Microelectronics); Bogdan SAVIN (Constanţa Maritime University)

P1.3 Development of a Personal Life Guard for Swimmers
Iulian LAZĂR (Constanţa Maritime University); Mihaela HNATIUC (Maritime University of Constanţa)

P1.4 Acquisition and Calibration Interface for Gas Sensors
Iulian LAZĂR (Constanţa Maritime University)

P1.5 Low-Complexity Variable-Regularized RLS Algorithms for Bilinear Forms
Camelia ELISEI-ILIESCU (University Politehnica of Bucharest); Cristian STANCIU (University Politehnica of Bucharest); Constantin PALEOLOGU (University Politehnica of Bucharest); Jacob BENESTY (University of Quebec); Cristian ANGHEL (University Politehnica of Bucharest); Silviu CIOCHINA (University Politehnica of Bucharest)

P1.6 Software System for Simulation Research of Reed-Solomon Decoders in Presence of Noise Applied in Digital Communication Systems
Yuksel ALIEV (University of Ruse); Adriana N. BORODZHIEVA (University of Ruse); Galina IVANOVA (University of Ruse)

P1.7 Comparison of Methods for Reducing the Complexity of HOG Algorithm - For Car Detection Applications
Mariana-Eugenia ILAS (University Politehnica of Bucharest)

P1.8 Efficient navigation of a robot based on an improved contrast of colours algorithm
Alexandru I. RUSU (University Politehnica of Bucharest)

P1.9 Monitoring Walnut Orchards with LoRa Technology
Dragoş SĂCĂLEANU (University Politehnica of Bucharest); Iosif-Karoly KISS (University of Agronomic Sciences and Veterinary Medicine of Bucharest)

P1.10 Comparison between deploying an IoT system designed to be used online and one designed to be used offline
M Mădălin MOISE (Continental Automotive)

P1.11 Optical Distance Measurement System Analysis at Different Color Temperatures of the Light Source Used by Sun Trackers
Roland SZABO (Applied Electronics Department, Faculty of Electronics, Telecommunications and Information Technologies, Politehnica University of Timisoara); Aurel GONTEAN (Politehnica University of Timişoara)

P1.12 QPSK Transmission System for Machine to Machine Communication
Ioan LIŢĂ (University of Piteşti)

P1.13 Intelligent monitoring and planning system for herbicidal processes in agricultural crops
Alin Gheorghiţă MAZĂRE (University of Piteşti); Laurenţiu Mihai IONESCU (University of Pitesti); Nadia BELU (University of Pitesti); Ioan Lita (University of Pitesti); Daniel Visan (University of Pitesti)

P1.14 The Performance of Supercapacitors' Main Parameters according to Topology of the Electrical Circuits in which They are used
Rodica C NEGROIU (UPB-CETTI); Paul SVASTA (UPB-CETTI); Alexandru VASILE (UPB-CETTI); Ciprian IONESCU (UPB-CETTI)

P1.15 Identification of Traditional Motifs using Convolutional Neural Networks
Sorin Liviu JURJ (Politehnica University of Timisoara); Flavius OPRITOIU (Politehnica University of Timisoara); Mircea VLADUTIU (Politehnica University of Timisoara)

P1.16 Study of the Waterproof Shelter Colour Influence on the Atmospheric Temperature and Humidity Measurements for an Internet of Things Application
Adrian ZARNESCU (SYSWIN Solutions); Razvan UNGURELU (SYSWIN Solutions); Marius MACOVEI (Syswin Solutions); Ciprian COMAN (Syswin Solutions); Gaudentiu VARZARU (Syswin Solutions);

P1.17 Considerations regarding Computer Aided Design of a structure to be manufactured in Occam technology
Victoria SOARE (Syswin Solutions); Gaudentiu VARZARU (Syswin Solutions); Adrian ZARNESCU (SYSWIN Solutions); Razvan UNGURELU (SYSWIN Solutions); Ciprian Ionescu (UPB-CETTI)

P1.18 Antitamper Conductive Mesh Used for Securing Cryptographic Modules
Daniel-Ciprian VASILE (UPB-CETTI); Paul SVASTA (UPB-CETTI)

P1.19 Low-Power IoT Devices for Measuring Environmental Values
George SUCIU (BEIA Consult & UPB); Ana PETRACHE (BEIA Consult International); Cristina BADEA (BEIA Consult International); Ijaz HUSSAIN (BEIA Consult International); Tony BUTEAU (BEIA Consult International); David SCHLACHET (BEIA Consult & IMT Atlantique Brest); Loic DURAND (BEIA Consult & INP Bordeaux Aquitaine); Matthieu LANDEZ (BEIA Consult & INP Bordeaux Aquitaine)

P1.20 Practical Method for Emergency Intervention in Smart Cities
Robert A DOBRE (University Politehnica of Bucharest); Alina E MARCU (University Politehnica of Bucharest)

P1.21 Improved Active Method for Image Forgery Detection and Localization on Mobile Devices
Robert A DOBRE (University Politehnica of Bucharest); Alina E MARCU (University Politehnica of Bucharest); Radu Ovidiu PREDA (University Politehnica of Bucharest)

P1.22 Chaos Statistical Independence for Blockchain

Madalin FRUNZETE (University Politehnica of Bucharest)

P1.23 Study of Alternative Solution for Aerial Photogrammetry
Ilona COSTEA (University Politehnica of Bucharest)

P1.24 Relation Between the Best Subject's Set of Tasks and the Classifier With the Best Performances on This Set
Dan DOBREA (Gheorghe Asachi Technical University of Iaşi); Monica DOBREA (Gheorghe Asachi Technical University of Iaşi)

P1.25 Low-computational method for noise estimation of MIMO wireless channels in IoT infrastructure
Viorel NICOLAU (Dunarea de Jos University of Galati); Mihaela ANDREI (Dunarea de Jos University of Galati)

P1.26 Sensor Module for Monitoring Atmospheric Pressure, Temperature and Humidity with Autonomous Power Supply System
Alin ŞERBAN (University Politehnica of Bucharest), Cristina MARGHESCU (UPB-CETTI); Andrei DRUMEA (University Politehnica of Bucharest)

P1.27 Investigations Related to Electrically Conductive Adhesives Pastes Usage on SMT Lines
Mihai BRANZEI (University POLITEHNICA of Bucharest); Marian VLADESCU (UPB-CCO); Bogdan MIHĂILESCU (UPB-CETTI); Ioan PLOTOG (UPB-CETTI); Gaudentiu VARZARU (Syswin Solutions)

P1. 28 AF relaying in a Massive MU-MIMO OFDM system
Madalina BERCEANU (University Politehnica of Bucharest); Carmen VOICU (University Politehnica of Bucharest); Simona HALUNGA (University Politehnica of Bucharest)

Saturday, October 27

11:10 – 13:10 **Poster Session 2** *(Cuza Center)*
NOTE: Each author must deliver a maximum 3 minutes slide show presentation of her/his work.

Session Chair: Olivér KRAMMER, Budapest University of Technology and Economics, Hungary
Session Co-Chair: Radu BOZOMITU, Gheorghe Asachi Technical University of Iaşi, Romania

P2.1 Hardware difficulties and its improvements for High Pressure Fuel Pump solenoid valve noise cancellation
Laszlo MOLNAR (Continental Atomotive/ Politehnica University of Timisoara); Aurel GONTEAN (Politehnica University of Timisoara)

P2.2 Arduino Based DC Motor Controller for Power Wheelchair
Seher KADIROVA (University of Ruse)

P2.3 Resistive Sensors Network Analog Multiplexing
Septimiu POP (Technical University Cluj Napoca)

P2.4 White-Box Testing Strategy for a Solar Tracking Device using NodeMcu Lua ESP8266 WiFi Network Development Board Module
Sorin Liviu JURJ (Politehnica University of Timisoara); Raul ROTAR (Politehnica University of Timisoara); Flavius OPRITOIU (Politehnica University of Timisoara); Mircea VLADUTIU (Politehnica University of Timisoara)

P2.5 Electrochemical Migration of SAC305 Solders and Tin Surface Finish in NaCl Environment
Sándor ÁDÁM (BME-ETT, Budapest, Hungary); Bálint MEDGYES (BME-ETT, Budapest, Hungary); Dániel RIGLER (BME-ETT, Budapest, Hungary); Bence SZABÓ (BME-ETT, Budapest, Hungary); László GÁL (BME-ETT, Budapest, Hungary)

P2.6 Electrochemical migration investigations on SAC-Bi-xMn solder alloys
Bálint MEDGYES (BME-ETT, Budapest, Hungary); Emil ROMAN (BME-ETT, Budapest, Hungary); Ádám BOHNERT (BME-ETT, Budapest, Hungary); Szablocs SZURDÁN (1Metalloglobus Fémöntő és Kereskedelmi Kft.); Xiankang ZHONG (State Key Laboratory of Oil and Gas Reservoir Geology and Exploitation, Southwest Petroleum University, Chengdu); Gábor HARSÁNYI (BME-ETT, Budapest, Hungary)

P2.7 A simple Procedure to detect Failed Capacitor within a Parallel Bank of MLCCs
Dan BUTNICU (Gheorghe Asachi Technical University of Iaşi)

P2.8 I2C Demonstrator
Carmen GERIGAN (Transilvania University of Brasov); Hunor-Levente GOCZ (Transilvania University of Brasov); Radu-Viorel MIHAI (Transilvania University of Brasov)

P2.9 LIN Demonstrator
Carmen GERIGAN (Transilvania University of Brasov); Dragos O Oana (Transilvania University of Brasov); Florin LUNGU (Transilvania University of Brasov); Mihaela PASCU (Transilvania University of Brasov)

P2.10 Configurable Online Test Creation in PHP with Auto Evaluation of Students Running on the Server of the Sun Trackers
Roland SZABO (Applied Electronics Department, Faculty of Electronics, Telecommunications and Information Technologies, Politehnica University of Timisoara); Aurel GONTEAN (Politehnica University of Timisoara)

P2.11 FFT Radix2 Core implemented on FPGA with DSP48 slices
Ilie Mihai ALEXANDRU; A. Grama; L. Viman; D. Pitica (Applied Electronics Department, Faculty of Electronics, Telecomunications and Information Tehnology, Technical University of Cluj Napoca)

P2.12 Design and Simulation of a Sixth Order Band-Pass Gm-C Filter
Elena STETCO (Technical University of Cluj-Napoca)

P2.13 Electrolytic Capacitor Polarity Determination based on Electrical Measurements
Albert FAZAKAS (Technical University of Cluj-Napoca); Vonsza Anda (UTCN); Marius PURCAR (Technical University of Cluj-Napoca)

P2.14 Medical Device for Communication with Neuromotor Disabled Patients

Cristian ROTARIU (UMF Gr. T Popa Iasi); Constantin BARABASA (Gheorghe Asachi Technical University of Iasi); Radu BOZOMITU (Gheorghe Asachi Technical University of Iasi); Hariton COSTIN (UMF Gr. T. Popa Iasi); Andrei DAVID (UMF Gr. T. Popa Iasi)

P2.15 A tunable transconductor with temperature and process immunity

Gabriel I BONTEANU (Gheorghe Asachi Technical University of Iaşi); Arcadie CRACAN (Gheorghe Asachi Technical University of Iasi); Radu Gabriel BOZOMITU (Gheorghe Asachi Technical University of Iasi)

P2.16 A weak-inversion CMOS analog multiplier/divider circuit

Arcadie CRACAN (Gheorghe Asachi Technical University of Iasi); Gabriel I BONTEANU (Gheorghe Asachi Technical University of Iasi); Radu Gabriel BOZOMITU (Gheorghe Asachi Technical University of Iasi)

P2.17 Automated Testing System for Cable Assemblies Used in Automotive Industry

Ioan LITA (University of Pitesti)

P2.18 Cost Effective Remote Control System for Analog Audio Mixers

Alina E MARCU (University Politehnica of Bucharest); Robert A DOBRE (University Politehnica of Bucharest); Marian Vladescu (UPB-CCO)

P2.19 PI timing measurements in high speed flash memory embedded systems

Raul FIZESAN (Applied Electronic Department , Technical University of Cluj Napoca)

P2.20 The impact of technological limitations on the performances of metamaterial transmission lines

Iulia MOCANU (University Politehnica of Bucharest); Mihaela PANTAZICĂ (UPB-CETTI)

P2.21 Single-Phase Boost A.C.-A.C. Converter

Cristian AGHION (Electronics Faculty - Gheorghe Asachi Technical University of Iasi); Mihai LUCANU (Electronics Faculty - Gheorghe Asachi Technical University of Iasi); Ovidiu URSARU (Electronics Faculty - Gheorghe Asachi Technical University of Iasi); Marius HAGAN (Electronics Faculty - Gheorghe Asachi Technical University of Iasi)

P2.22 Servo Control Based on Pupil Detection Eye Tracking

Radu Gabriel BOZOMITU (Gheorghe Asachi Technical University of Iasi); Constantin BARABASA (Gheorghe Asachi Technical University of Iasi); Cristian ROTARIU (UMF Gr. T Popa Iasi)

P2.23 Broadband RF Adaptive Antenna with Automatic SWR Control by using MEMS-RF Technology and Microcontroller Process.

Nistor Nicusor (Dunarea de Jos University of Galati); Bogdan Dumitrascu (Dunarea de Jos University of Galati); Baicu Laurentiu (Dunarea de Jos University of Galati)

P2.24 Fine Tuning of a VCVS Band Pass Filter

Mihaela Andrei (Dunarea de Jos University of Galati); Radu C. V. Belea (University of Galati)

P2.25 Planar Core Transformers Analysis for a Power Distribution Network Concept

Constantin Ropoteanu (UPB-CETTI)

P2.26 State of charge and state of health estimation of Lithium-Ion batteries
Attila Buchman (Technical University Cluj-Napoca); Claudiu Lung (Technical University of Cluj Napoca North University Center of Baia Mare)

P2.27 Improved Design Architecture for LLC Resonant DC/DC Converters
Alexandru I. Rusu (University Politehnica of Bucharest)

P2.28 Secure Transmission System for Personal Data Acquired Through Optical Character Recognition
Dumitru Iulian Nastac (University Politehnica of Bucharest); Paul-Vasile Vezeteu (University Politehnica of Bucharest); Tudor-Alex Capraru (University Politehnica of Bucharest); Stefan Niculae (University Politehnica of Bucharest)

Saturday, October 27

15:00 – 17:00 **Poster Session 3** *(Cuza Center)*

NOTE: Each author must deliver a maximum 3 minutes slide show presentation of her/his work.

Session Chair: *Balázs ILLÉS, Budapest University of Technology and Economics, Hungary*
Session Co-Chair: *Ioan LITA, University of Piteşti, Romania*

P3.1 A Method for Improving an Active Cooling Solution for LEDs
Niculina I Badalan (UPB-CETTI); Paul Svasta (UPB-CETTI); Cristina Marghescu (UPB-CETTI)

P3.2 Improving Practical Experience of Students in Pre-production and Production Stages of New Products
Seher Kadirova (University of Ruse)

P3.3 Description of Virtual Equipment in the EVEEE Environment
Boris I Evstatiev (University of Ruse Angel Kanchev); Katerina Gabrovska-Evstatieva (University of Ruse Angel Kanchev); Valentina Voynohovska (University of Ruse Angel Kanchev); Ivaylo Stoyanov (University of Ruse); Teodor B. Iliev (University of Ruse)

P3.4 Method for Creating Virtual Copies of Real Labs in a 2D Environment, Representing a 3D Virtual Reality
Boris I Evstatiev (University of Ruse Angel Kanchev); Yordan Doychinov (University of Ruse Angel Kanchev); Katerina Gabrovska-Evstatieva (University of Ruse Angel Kanchev)

P3.5 Analysis of the Cybersecurity Threats in Smart Grid System
Ivaylo Stoyanov (University of Ruse); Teodor B. Iliev (University of Ruse); Grigor Mihaylov (University of Ruse Angel Kanchev); Boris I Evstatiev (University of Ruse Angel Kanchev)

P3.6 FPGA-Modelling and Simulation of Simple Encoders for Training Purposes in the University of Ruse
Iordan Stoev (University of Ruse); Adriana N. Borodzhieva (University of Ruse); Valentin Mutkov (University of Ruse)

P3.7 FPGA Implementation of Johnson Counters Applied in the Educational Process
Iordan Stoev (University of Ruse); Adriana N. Borodzhieva (University of Ruse); Valentin Mutkov (University of Ruse)

P3.8 Performance Estimation of Scalable e-Learning Systems in the Cloud

Teodor B. Iliev (University of Ruse); Strahil Sokolov (University of Telecommunications and Post, Sofia, Bulgaria); Stefan Vlaev (University of Telecommunications and Post, Sofia, Bulgaria); Asen Zahariev (University of Telecommunications and Post, Sofia); Mihail Vukadinov (University of Telecommunications and Post, Sofia); Ivaylo Stoyanov (University of Ruse)

P3.9 Code Converter Synthesis in a Teamwork Using Logisim

Adriana N. Borodzhieva (University of Ruse); Plamen Manoilov (University of Ruse Angel Kanchev)

P3.10 Virtual Investigations for Improvement of Coplanar Waveguide Structures

Peter Balan (UPB-CETTI)

P3.11 High Power Switch using IGBT and GaN MOSFET

Laszlo Molnar (Politehnica University of Timisoara); Aurelian Kotlar (Continental Automotive); Septimiu Lica (Politehnica University of Timisoara)

P3.12 Position Optimization Method for a Solar Tracking Device using the Cast-Shadow Principle

Raul Rotar (Politehnica University of Timisoara); Sorin Liviu Jurj (Politehnica University of Timisoara); Flavius Opritoiu (Politehnica University of Timisoara); Mircea Vladutiu (Politehnica University of Timisoara)

P3.13 SPICE model of a piezoelectric transducer

Corina N Covaci (Politehnica University of Timisoara); Aurel Gontean (Politehnica University of Timisoara)

P3.14 Design Rule Checking. Current Challenges Approached with HyperLynx DRC

Mihaela Hnatiuc (Constanta Maritime University); Iov Catalin (Electronics, TRIAS Microelectronics)

P3.15 Energy Management for an Islanded Microgrid Based on Particle Swarm Optimization

Andreea Ignat (Technical University of Cluj-Napoca); Eniko Lazar (Technical University of Cluj-Napoca); Dorin M Petreus (Technical University of Cluj-Napoca)

P3.16 Thermal Characterization of Passive Cooling Techniques for High-Power Component Clusters

Alexandra Fodor (Technical University of Cluj-Napoca)

P3.17 Passenger detection and counting inside vehicles for eCall – a review on current possibilities

Attila Bonyár (BME-ETT, Budapest, Hungary); Attila Géczy (BME-ETT, Budapest, Hungary); Péter Hanák (BME-AUT, Budapest, Hungary); Gábor Harsányi (BME-ETT, Budapest, Hungary)

P3.18 Studies of Large Area LED Structures on Flexible Substrates

Ciprian Ionescu (UPB-CETTI); Norocel Codreanu (UPB-CETTI)

P3.19 Sensor Monitoring System for Formula Student Car

Victor Iriciuc (University Politehnica of Bucharest); Aurelian Kotlar (Continental Automotive)

P3.20 Nonlinear Transformations Applied to Image Processing on the RGB LED Display

Nistor Nicusor (Dunarea de Jos University of Galati); Mihaela Andrei (Dunarea de Jos University of Galati); Simona Moldovanu (Dunarea de Jos University of Galati)

P3.21 PID Algorithm used for DC Motor Control

Marius-Alexandru Taut (Technical University of Cluj-Napoca)

P3.22 Considerations about Overvoltages During and After the Disconnection of a Photovoltaic Park
Liviu Neamt (Technical University of Cluj-Napoca, North University Centre of Baia Mare)

P3.23 Solar Emulator for a Photovoltaic Module
Cristian Farcas (Technical University of Cluj-Napoca); Ionut Catalin Ciocan (Technical University of Cluj-Napoca); Adrian Tulbure (1 Decembrie 1918 University of Alba Iulia)

P3.24 Test Bench Concept for Clutch Drive of Automatic DCT Gearboxes
Adrian Tulbure (1 Decembrie 1918 University of Alba Iulia)

P3.25 Automatic battery charging system for electric powered drones
Ilona Costea (University Politehnica of Bucharest)

P3.26 OCR-based solution for the integration of legacy and-or non-electric counters in cloud smart grids
Vlad Fernoaga (Transilvania University of Brașov); George Alex Stelea (Transilvania University of Brașov); Alexandra Stanciu (Transilvania University of Brasov); Florin Sandu (Transilvania University, Brașov, Romania)

P3.27 A Passive Battery Management System for Fast Balancing of Four LiFePO4 Cells
Lucian Perisoara (University Politehnica of Bucharest); Ionut Guran (University Politehnica of Bucharest); Catalin Costache (University Politehnica of Bucharest)

P3.28 Pilot Platform for Remote Monitoring of an Electric Vehicle
Lucian Perisoara (University Politehnica of Bucharest); Madalina Stamati (University Politehnica of Bucharest); Luciana Chitu (University Politehnica of Bucharest); Dragos Sacaleanu (University Politehnica of Bucharest)

P3.29 Tracking Device for Solar Panels
Dumitru Iulian Nastac (University Politehnica of Bucharest); Andrei-Raoul Morariu (University Politehnica of Bucharest); Paul-Vasile Vezeteu (University Politehnica of Bucharest)

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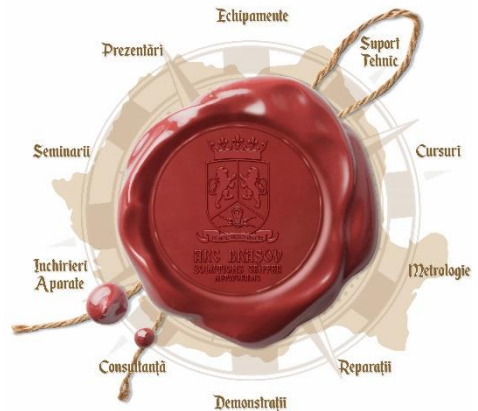
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- **CST -** simulare Electromagnetica
- **ABAQUS -** unul din produsele de baza din portofoliul SIMULIA, este recunoscut ca fiind unul dintre cele mai avansate softuri de analiza cu elemente finite.
- **Isight** - solutie de automatizare si optimizare a simularii de produs
- **Tosca** -solutie de optimizare a produsului
- **FE Safe-** solutie calcul de oboseala si durabilitate
- **3D Experience**
- **Centru autorizat de formare**.

Servicii FEA:
- **FEA (Analiza de element finit):** analize termice si structurale, vibratii si acustica (NVH), multi-body dynamics, impact, oboseala, etc.
- **CFD (Dinamica fluidelor):** capacitate completa (curgeri in regim stationar si nestationar, modele turbulente, aerodinamica), inclusiv interactiunea structurii cu fluidul.
- **Simulare injectie mase plastice**
- **Design:** piese turnate, materiale plastice, mecanisme, asamblari
- **Aerodinamica:** calculul aripii de avion, predictie coeficient portanta si drag, flutter, stabilitate
- **Analiza la grup motopropulsor:** motoare cu ardere interna, transmisii, generatoare.
- **Optimizare:** optimizare neliniara avand variabile cu forme complexe.
- **Analiza la impact:** analiza de impact conform regulamentelor si directivelor europene, cinematica ocupantilor, impactul cu pasarea.
- **Caracterizarea materialelor:** compozite, hiperelastice, fracturarea metalelor

Continental. The Future in Motion.

As one of the leading global automotive manufacturer we have hundreds of projects going on simultaneously, these are just a few of them:

› **AllCharge** is a superfast wireless and cable charger that can charge your car as fast as vehicles with internal combustion engines. In addition, AllCharge enables you to connect any electronic device to your car to charge it, even an entire house in a power outage situation.

› **Speakerless Audio System** replaces conventional speakers with actuators, which create a high-quality 3D audio experience by vibrating certain surfaces inside the vehicle.

› **Wireless Key PASE system**, which allows drivers to open the doors without the need for keys. All they need to do is to approach the vehicle with a smartphone or a wearable device, such as a smart watch or ring, and the car will be opened by a virtual key.

› **Artificial intelligence** used by Continental turns the entire vehicle into a digital companion that remembers and interprets the user's behavior, adapts navigation or infotainment offers and even anticipates the wishes of the driver. To enable a natural conversation between the driver and the vehicle, Amazon's cloud-based voice service, Alexa, has been linked to several vehicles.

For more details and how to join our team,
visit www.romania.careers-continental.com
or give us a follow on www.facebook.com/RomaniaContinental.

Deery Brook SRL was established in 2015 by individuals coming from decade-long experience in the electronics assembly market.

With the long history of the owners in multinational environment and its toolset we aim to be not only a materials provider for PWB, soldering, potting, encapsulation and many more, but a value oriented partner.

Our toolset includes total cost of ownership focus and methodologies from six-sigma. Major represented brands are Alpha, Tecnometal and Momentive.

Since 1989, TECNOMETAL has been working as Italian electronics manufacturer, producing circuits (PCBs) and prototypes services for electronics industry. Our products are complying with RoHS & REACH EU directives and are check according to the IPC-A600 Class 2 standard.

UL Certification File nr. E155803

Quality System ISO 9001:2008 IQNet

ISO 9001:2008 RINA 2639/99/S Certificate

TECNOMETAL SRL - Via Ancona, 3 -20061 – Trezzano Rosa (MI), www.tecnometal.net
Tel. +39 02 90969935, Fax +39 02 90968707

Miele Tehnica Brașov is a subsidiary of Miele & Cie. KG, Germany. It was established in 2009 as a second electronics factory in the group, after the plant in Gütersloh.

The Miele plant in Brașov currently has 300 employees and produces electronic components for a wide range of Miele appliances, such as washing machines, tumble dryers, vacuum cleaners, ovens and others. The products Miele offers to its customers set the standards for durability, performance, ease of use, energy efficiency, design and service products.

In august 2015, in Brașov, a software development division was created. Within this new division the software for a wide variety of Miele appliances is developed.

The facility in Brașov is equipped with state-of-the-art technology and all quality requirements are respected according to the Miele Group's standards. This fact is acknowledged by all the certifications currently in place: ISO 9001, ISO 14001, ISO 50001, OHSAS 18001 and SA 8000.
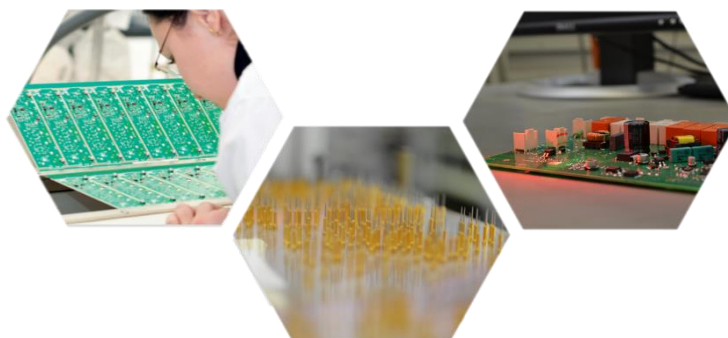
Address: No.1 Carl Miele Street, 507065 Feldioara, Brașov, Romania

Phone: 0040-372-217800, Fax: 0040-372-217810

Email: office@miele.ro, recrutare@miele.ro

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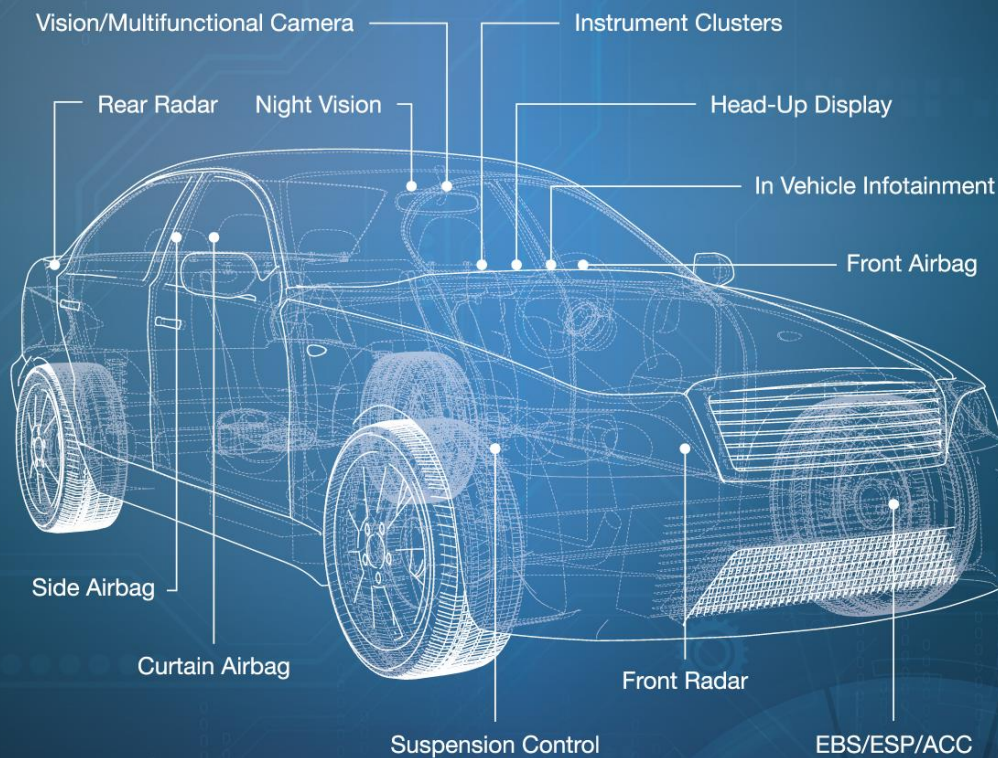
www.nttdata.ro

PFARR is a manufacturer of precision stampings, particularly from ultra-high pure metals as targets, lead-free solders, vacuumgrad fillermaterials and custom materials. Alloys are produced in house to exacting customer specifications in any desired composition. PFARR also offers pure metal components, again to specific customer requirements. All shapes and dimensions are governed by customer orders and include ingot, strips, foils, stamped and formed components and spheres. Using the PFARR in-house tool room provides absolutely precise dimensioning and rapid lead times.

Lead free solders

Pfarr soft solders are produced from specially alloyed elements of extremly high-purity (min. 99,99%). They bare prepared in a deoxidising melt or under vacuum, respectively. The materials are oxide-free with excellent flow and wetting characteristics. Typical applications: • assembly of semiconductor packages such as IGBT modules • soldering the semiconductor crystals in discrete components • microelectronic component assembly

Vacuum grade brazing alloys

To achieve 100 % performance, the specifications for materials used in joining parts have to be considered from the very beginning of the production process. Semi-fabricated materials, ribbons, preforms and wires manufactured by PFARR as vacuum grade brazing materials provide function and performance. Typical applications: • vacuum interrupters and capacitors • surge arresters and transient voltage suppressors • magnetrons • medical X-Ray tubes • thyratrons • high voltage rectifiers • hybrid modules.
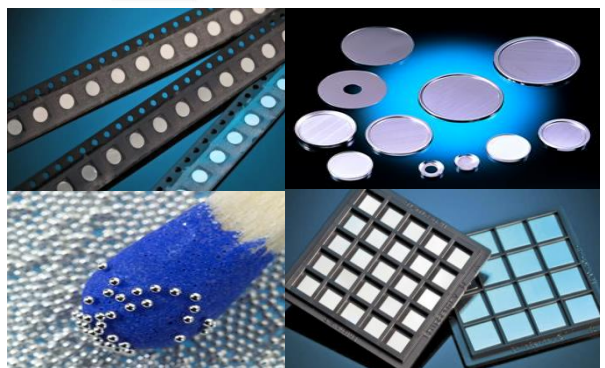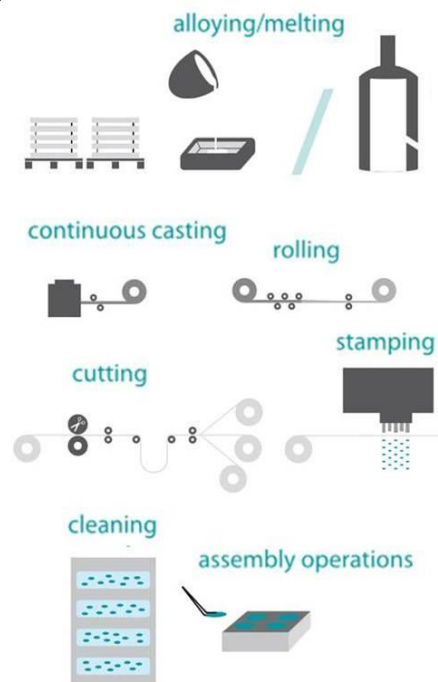
TENSOR is a Romanian company which pioneered introducing more than 20 years ago, software tools for numerical simulation.

TENSOR helped creating a community of simulation engineers in Romania, bringing the Romanian industry close to Academia.

Numerical simulation has proven countless times its usefulness by contributing to new product launch time shortening, identification of failure causes and consequences, checking the behavior under thermal or structural stress, electromagnetic interference and electromagnetic compatibility. **TENSOR** expertise spans from structural and CFD analysis to electronic devices virtual verification and testing.
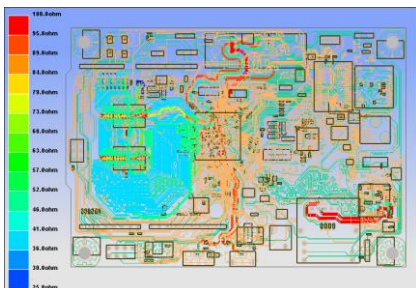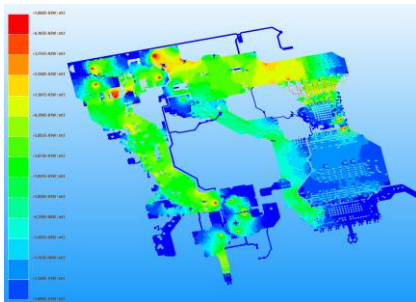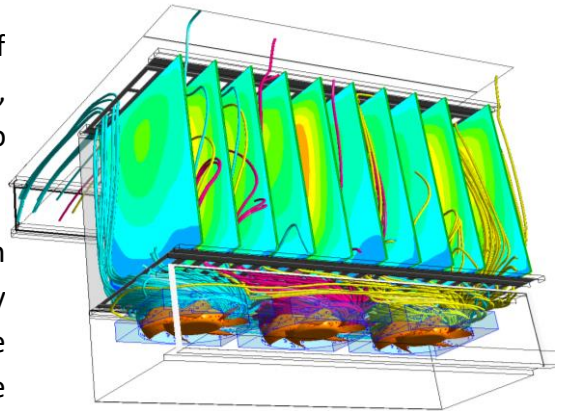
www.tensor.ro

office@tensor.ro

021-444.23.78; 0744.310.929
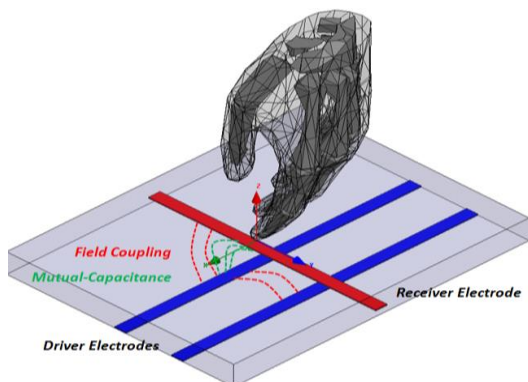
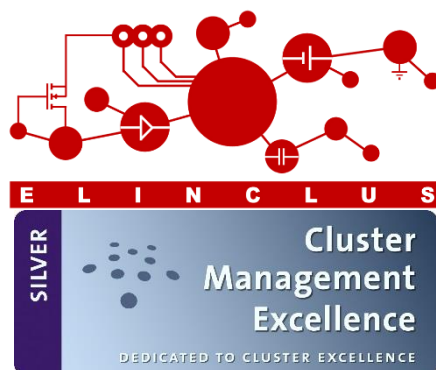**ELINCLUS** ELectronic INnovation CLUSter

EMC: Association for Promoting Electronics Technology – APTE (www.apte.org.ro)

Founded 2011; 70 registered members

President: Prof.DHC. mult. Paul SVASTA,Ph.D.

Executive Manager: Lect. Eng. Bogdan Mihăilescu, Ph.D.

Founding member of the Clusters Association from Romania, CLUSTERO - www.clustero.eu

- Member of Adriatic Danube Mechatronics Cluster Network

- International collaboration with Mecatech Cluster Wallonie and Wallonie Export Agency

- International collaboration with Omnipack Cluster Hungary (http://omnipack.hu/)
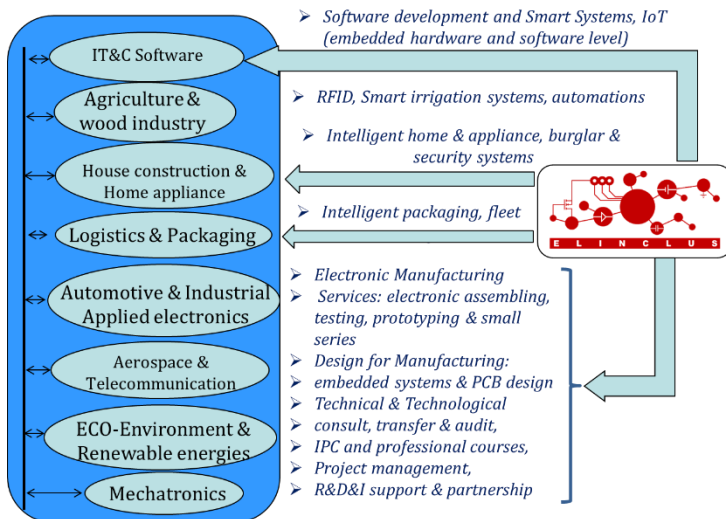
- European Cluster Excellence Initiative Bronze Label Certificate from ESCA in 2013

Sector of activity:

- Mechatronics, Automotive electronics, Aerospace electronics, Renewable energies, Communications, Agriculture and wood industry, Home appliance and consumer goods, ECO – environment

Cluster strengths:

- Research & Development of innovative new electronics products in area of mechatronics, aerospace, automotive and s.o.; Technical and technological support for prototyping and small series; IP technology transfer;

ELINCLUS Headquarters: Bucharest, Bd. Iuliu Maniu nr.1- 3

E-mail: elinclus@elinclus.ro   **Web page**: www.elinclus.ro

ASOCIAȚIA PENTRU PROMOVAREA TEHNOLOGIEI ELECTRONICE

The Association for Promoting Electronics Technology is the entity of management of the ELINCLUS Cluster, who has currently 88 members. APTE was founded in 2002, by the Center for Technological Electronics and Interconnection Techniques, UPB-CETTI, and highly respected members of electronics industry, to sustain the electronics packaging education, in a climate of trust, ethics and social responsibility.

APTE is the Managing Entity of the ELINCLUS Cluster. For its activity APTE has received the Silver Label from The European Secretariat for Cluster Analysis in 2016.

In addition to the areas of science, engineering, microelectronics and packaging, the training encompass the broader areas of business, economics.

APTE offers annually a comprehensive set of short courses on electronic packaging technologies, standards training and certification, management, industrial organization, designed to serve the needs of electronic industry. Apte is organizing and sponsoring annually International Symposium for Design and Technology of Electronic Packages and TIE Students Professional Contest.

Learn more about APTE at apte.org.ro.

APTE- Association for Promoting Electronic Tehnology

27-29 Callimachi Street
023496 Bucharest, Romania
Phone: +40 21 316 9633
E-mail: apte@apte.org.ro

DA-SPACE

The Danube region is still very fragmented and presents great disparities in prosperity, jobs opportunities and innovation capacities. DA-SPACE addresses these challenges by piloting a model of open innovation lab in which companies, public authorities, universities and the civil society can create fundaments for innovation together with young talents. The DA-SPACE labs promote a cross-disciplinary and transnational cooperation among different stakeholders able to generate new solutions and nurture the entrepreneurial skills of all the actors involved. The exchange among these actors in the DA-SPACE labs will profit both sides:

• young talents will work on real business cases and will be able to test and prototype their ideas in a safe environment, acquiring entrepreneurial skills;

• seekers (e.g. small and medium-sized enterprises, public authorities etc.) will test co-creation and open innovation methods and will benefit from the exchange with young innovators. Besides, their employees – involved as mentors in the lab - will improve their business competences responding to market requirements and developing skills for future job needs.

Learn more about DA-SPACE Project at www.interreg-danube.eu.

Visit the DA-SPACE booths of Romanian partners APTE/ELINCLUS (Cristina Lepădatu and Bogdan Mihăilescu) and „Dunarea de Jos" University of Galati (Gelu Coman) in the exhibition area.
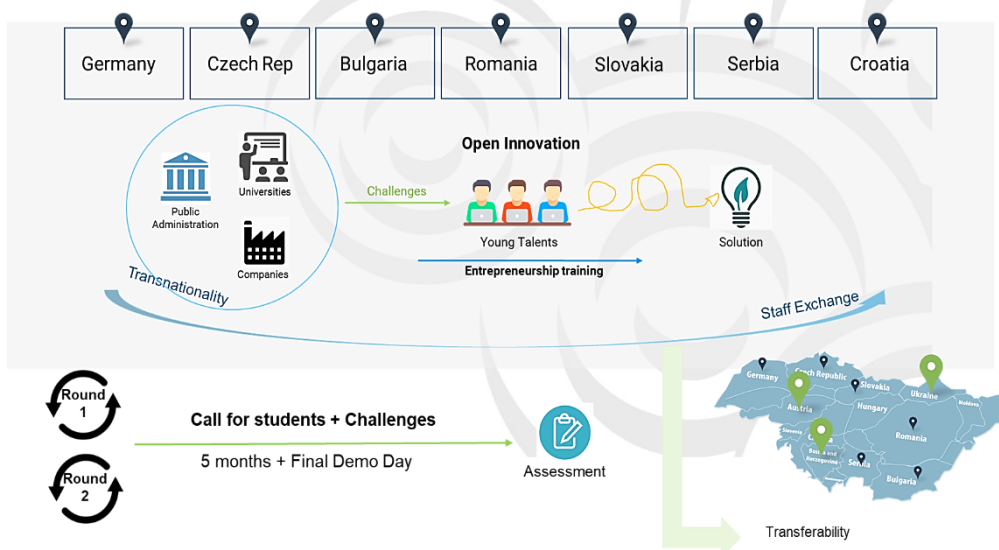
Project co-funded by European Union funds (ERDF, IPA)

Location:

The conference and exhibition takes place at:

UNIREA Hotel, Piata Unirii no. 5, Iasi, Romania

(see the map below).

GPS coordinates:

N 47° 10' 0.9"

E 27° 34' 51.6"

The Registration is at:

UNIREA Hotel, Piata Unirii no. 5, Iasi, Romania

For more information and access: http://www.hotelunirea.ro

CONTACT INFORMATION

Registration Officer:	Delia Lepădatu
	0040.769.247.904
Travel Advisor:	Radu Bozomitu
	0040.740.319.451
Multimedia:	Bogdan Mihăilescu
	0040.723.077.221

Cultural program of SIITME 2018

The cultural program of the SIITME 2018 conference consists of visiting the University Palace of Iaşi with the following objectives: **Library of the "Gheorghe Asachi" Technical University**, **"Carmen Sylva" Festivity Hall of the "Gheorghe Asachi" Technical University**, **Hall of Lost Footsteps** and **"Mihai Eminescu" Aula Magna of the "Alexandru Ioan Cuza" University of Iaşi**. Below some short information.

University Palace

Iaşi, The University – View from North - East (1897)

The University of Iaşi was the first modern university in Romania, founded in 1860 at the initiative of politician Mihail Kogălnicranu and Prince Alexandru Ioan Cuza, and was named after the latter in 1942. Among those 350 rooms of the Palace, the most beautifully and richer decorated are the Library (first floor) and the "Carmen Sylva" Festivity Hall (ground floor).
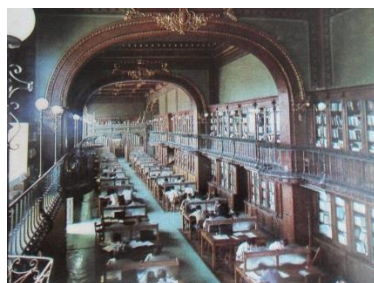
Library of the "Gheorghe Asachi" Technical University of Iaşi

The Library of the "Gheorghe Asachi" Technical University of Iaşi has been selected among the most beautiful 25 libraries in the world, according to an online survey initiated by the Boredpanda.com portal. Today the library is on the first place in the site visitor's preference top. In "competition" there are architectural masterpieces such as the Trinity College Library in Dublin, the Royal Portuguese Library in Rio de Janeiro, the National Library in Prague or the National Library of France.

The present holding of the library counts about one million volumes and data bases, covering all the scientific and engineering fields, as well as the economics and legislation.

The main Reading Room (1922)

The main Reading Room (to day)

"Carmen Sylva" Festivity Hall of the "Gheorghe Asachi" Technical University of Iaşi

The **"Carmen Sylva" Festivity Hall of the University** is an exquisite room, it is a magnificent rotunda with a great stand above which the portraits of King Charles Ist of Romania and Queen Elisabeth oversee the whole space. The Queen was fond of poetry, she herself was a poetess and her literary pseudonym has given the name of this Hall.

At the entrance, on the vault, one can see the Science sitting on a big throne with stairs. On the top stair, close to Science, King Charles I of Romania is standing holding his scepter, to the right the Prime Minister is sitting on a chair and in front of him some peasants are kneeling in a position of respect and gratitude.

Hall of Lost Footsteps

On May 23, 1893, starts the construction of the University Palace in the presence of Prince Ferdinand of Hohenzollern-Sigmaringen. Designed by the architect Louis Blanc (for which he won a gold medal at an exhibition in Paris), the Palace of University was inaugurated on October 21, 1897.

In this room, you can find the 19 murals of Sabin Balasa. A true blue bliss covering approximately 300 sq m. The paintings made by the master of unicorns and cosmic silhouettes were made between 1968-1978. They were designed as a representation of the Romanian soul, and can be grouped into three categories: universal myths, legends Romanian, university.
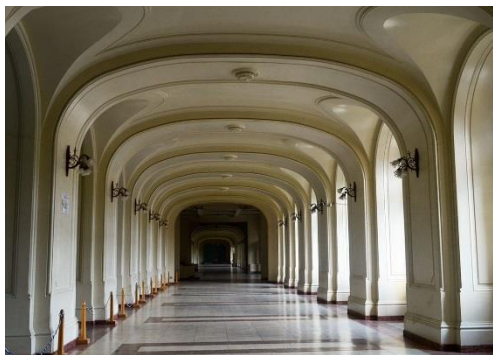
"Mihai Eminescu" Aula Magna of the "Alexandru Ioan Cuza" University of Iaşi

In 2002, Sabin Bălașa paints "Galaxia Iubirii" (*"Love galaxy"*), in the "Mihai Eminescu" Aula of the "Alexandru Ioan Cuza" University in Iasi. The painting symbolizes love - an universal felling and love – knowledge.

At a height of 10.8 meters it represents an impressive work of art, with impressive spatiality although it is plane, each angle of observation offering different meteor pulsations.

Cluj-Napoca welcomes SIITME Conference 2019!

We are honoured and pleased to organize the next edition of the SIITME conference, an anniversary one, in Cluj-Napoca. The twenty-five years that our conference celebrates next year go well with the young and academic spirit of our city.

The excellence that is usually promoted by SIITME will fit well with the scientific and cultural life of Cluj-Napoca. During 2019, our city will continue to see, each week, new national and international events.

We are convinced that the next edition of our conference will attract a large number of participants from academia and the industry. The innovative spirit of the conference certifies that we will have, among us, representatives of top areas of cutting-edge technologies promoted in our city and region.

Autumn is the most beautiful season in Cluj-Napoca and we invite you to see it for yourselves in October 2019!

See you in Cluj!

SIITME 2019

25 years Anniversary

IEEE 25th International Symposium for Design and Technology in Electronics Packaging

| Cluj-Napoca | Romania | October 23rd – 26th 2019 |

Call for Papers

siitme.ro

The organising committee of SIITME 2019 kindly invites you to submit an abstract/paper to the 2019 IEEE 25th International Symposium for Design and Technology in Electronics Packaging (SIITME).

Topics

- Emerging technologies in advanced packaging;
- Components, assembling and manufacturing technology;
- Embedded systems, aerospace, robotics and artificial intelligence;
- Power electronics, thermal management,
- Smart grid, renewable energy;
- Virtual prototyping and System validation;
- Applied reliability, characterization and testing, failure diagnostic;
- Challenges in global education;

Calendar

Submission of abstracts: **20.05.2019**
Abstract acceptance: **30.06.2019**
Submission of papers: **01.09.2019**
Authors registration deadline: **20.09.2019**
Participants registration deadline: **10.10.2019**

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