

# DDECS

DESIGN & DIAGNOSTICS of ELECTRONIC CIRCUITS & SYSTEMS

Informal Proceedings of the

## 2016 IEEE 19th International Symposium on Design and Diagnostics of Electronic Circuits & Systems (DDECS)

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## Foreword to the IEEE DDECS 2016 Symposium

Welcome to the 19<sup>th</sup> IEEE International Symposium on Design and Diagnostics of Electronic Circuits and Systems (DDECS), and welcome to Košice! DDECS has its roots in the central European countries like the Czech Republic (DDECS organized in 1995, 2002, 2006, 2009 and 2013), Hungary (2001, 2005), Poland (1997, 2003, 2007, 2014), and Slovakia (2000, 2004, 2008). Originally a workshop, it turned into a symposium in 2009 and has become very international since then, extending to Austria (2010), Germany (2011), Estonia (2012) and Serbia (2015). Thus, the DDECS symposium has become one of the major scientific events in the area of design and test in Central Europe.

In 2016, DDECS is returning to Slovakia, more specifically to the city of Košice, the metropolis of eastern Slovakia. It is situated on the river Hornád near the borders with Hungary, Poland and Ukraine. Being the economic and cultural centre, it is the seat of the Košice region parliament, the Slovak Constitutional Court, three universities, various dioceses, and many museums, galleries, and theatres. Košice has a well-preserved historical centre, which is the largest among Slovak towns. In 2013, it was the European Capital of Culture.

DDECS 2016 is sponsored and organized by two faculties of Slovak University of Technology in Bratislava (FIIT and FEI) and by the Institute of Informatics, Slovak Academy of Sciences. This year, the Symposium is financially co-sponsored by the IEEE Council of Electronic Design Automation and technically cosponsored by the IEEE Computer Society. Further sponsors are elfa, s.r.o., ON Semiconductor, IBM, Soitron, Q-products, and Hewlett Packard Enterprise.

We have received 93 submissions from 24 countries of the world. Based on 327 reviews provided by the 72 program committee members (plus numerous external reviewers) we finally selected 31 papers for regular presentation and 14 for poster presentation. In addition to that we have one embedded tutorial on the hot topic of "Approximate Computing" and 3 excellent keynote talks. Cecilia Metra (Univ. Bologna) offers a presentation on "Test and Reliability Challenges for High Performance, Nanotechnology Circuits and Systems", Dominique Borrione (Univ. Grenoble) will present her visions on "Automatic Synthesis of Verification IP's from Assertions: Beyond Observers", and Domenik Helms (OFFIS) will give his perspective on "The Long Way Towards Design for Reliability Support". For the first time this year DDECS also offers a "Work in progress" track to provide researchers a forum to get early feedback on ideas that may not have reached full maturity yet. We will have 8 such presentations.

Following the tradition of DDECS, the best papers, one in the area of design and one in the area of test, are awarded. These are selected by a committee consisting of five experts. The committee assesses the technical and scientific quality of papers together with the presentation at DDECS. For the assessment, only those papers which were seen as the best ones by the reviewers are selected. In 2015, the following papers were awarded:

- (1) Tetsuya Matsumura, Aoi Kurokawa, Kousuke Imamura, and Yoshio Matsuda:  
*"A Design for the 178-MHz WXGA 30-fps Optical Flow Processor Based on the HOE Algorithm"* (Best paper in the Design field)
- (2) Hans G. Kerkhoff and Hassan Ebrahimi: *"Intermittent Resistive Faults in Digital CMOS Circuits"* (Best paper in the Test field)

Much voluntary work has been done to prepare a very strong technical program this year and thanks to our team of local organizers and the support of elfa, s.r.o., the DDECS 2016 participants will find a stimulating and fruitful event in Košice. We also believe that DDECS participants will contribute to a high-level at IEEE DDECS 2016 with excellent presentations and informal discussions.

We wish you a pleasant stay in Košice.

Andreas Steininger  
The DDECS 2016 Program Chair

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