

PROCEEDINGS

OF 12TH INTERNATIONAL CONFERENCE ON
COMMUNICATIONS, ELECTROMAGNETICS AND MEDICAL
APPLICATIONS (CEMA'17)

Organized by:



FACULTY OF TELECOMMUNICATIONS
TECHNICAL UNIVERSITY OF SOFIA, BULGARIA



NATIONAL TECHNICAL UNIVERSITY OF ATHENS, GREECE,
SCHOOL OF ELECTRICAL AND COMPUTER ENGINEERING

NATIONAL TECHNICAL
UNIVERSITY OF ATHENS,
GREECE



SCHOOL OF ELECTRICAL
AND COMPUTER
ENGINEERING

Sofia, Bulgaria
12th - 14th October, 2017

KING 2001, Sofia

Edited by Prof. Dr. Eng. **Dimiter Tz. Dimitrov**

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P. Frangos



D. Dimitrov



K. Dimitrov

Dear Colleagues,

It is our privilege to thank all of you for your contributions submitted at 12th regular International Conference on 'Communication, Electromagnetic and Medical Applications' CEMA'17. This is a conference which should help future collaboration in the area of engineering, especially in the area of communication technologies and medical applications. This is an important scientific event not only in Balkan region, but in Europe, also. The International Conference on Communication, Electromagnetism and Medical Applications CEMA'17 is dedicated to all essential aspects of the development of global information and communication technologies, and their impact in medicine, as well. The objective of Conference is to bring together lecturers, researchers and practitioners from different countries, working on the field of communication, electromagnetism, medical applications and computer simulation of electromagnetic field, in order to exchange information and bring new contribution to this important field of engineering design and application in medicine. The Conference will bring you the latest ideas and development of the tools for the above mentioned scientific areas directly from their inventors. The objective of the Conference is also to bring together the academic community, researchers and practitioners working in the field of Communication, Electromagnetic and Medical Applications, not only from all over Europe, but also from America and Asia, in order to exchange information and present new scientific and technical contributions.

Many well known scientists took part in conference preparation as members of International Scientific Committee or/and as reviewers of submitted papers. We would like to thank all of them for their efforts, for their suggestions and advices.

We are extremely grateful to the company INTRACOM Bulgaria for its regular support of our conference.

On behalf of the International Scientific Committee, we would like to wish you successful presentations of your papers, successful discussions and new collaborations for your future scientific investigations.

Engineering and medicine should provide high level of living for all people.

D. Dimitrov
Conference Chairman

P. Frangos
Conference Vice Chairman

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Conference Vice Chairman

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REGISTRATION

October, 12th, 09h - 16h
Building of Library, fourth floor
Technical University of Sofia, Bulgaria

CONFERENCE PROGRAM

12th October

OPENING CEREMONY

9h 30min - 10h

Building of Library, fourth floor
Technical University of Sofia, Bulgaria

Coffe Break

10h - 10h 30min

SCIENTIFIC PROGRAM

12th October

FIRST SESSION

10h 30min - 12h

Building of Library, fourth floor
Technical University of Sofia, Bulgaria

Chairman: Prof. Rasa Bruzgiene, Kaunas University of Technology, Lithuania

- 1. AN APPROACH FOR COLORECTAL POLYP SEGMENTATTION,**
Veska Georgieva, Plamen Petrov, Technical University of Sofia, Bulgaria
- 2. 3D VISUALISATION OF THE SPLEEN FROM MRI SEQUENCES,**
Antonia Mihaylova, Technical University of Sofia, Bulgaria
- 3. FRACTAL ANALYSIS METHODS IN INVESTIGATION OF ULTRALIW DOS-ES EFFECTS,**
Nataly Ampilova, Igor Soloviev, St. Petersburg State University, St. Petersburg, Russia
- 4. USER ACTIVITY RECOGNITION IN AUTOMATED CONTROL OF SMART ENVIRONMENT,**
Artem Kirienko, St. Petersburg State University, St. Petersburg, Russia
- 5. PREPROCESSING AND CLUSTERING RAW ACCELEROMETER DATA FROM SMARTPHONES FOR HUMAN ACTIVITY RECOGNITION,**
Pavel Dinev, Ivo R. Draganov, Ognian L. Boumbarov, Technical University of Sofia, Bulgaria, Darko Brodić, University of Belgrade, Serbia

Lunch

12h - 13h 30min

SECOND SESSION

13h 30min - 15h

Building of Library, fourth floor
Technical University of Sofia, Bulgaria

Chairman: Prof. N. Ampilova, St. Petersburg State University, St. Petersburg, Russia

- 1. EM EXPOSURE STUDY OF A HUMAN INSIDE THE CAR,**
Veriko Jeladze, Tamar Nozadze, Vasil Tabatadze, Ivan Petoev, Revaz Zaridze, Tbilisi State University, Tbilisi, Georgia
- 2. THE EFFECT OF WEATHER ON QUALITY OF EXPERIENCE IN OPTICAL WIRELESS COMMUNICATION SYSTEM,**
Rasa Bruzgiene, Lina Narbutaite, Kaunas University of Technology, Lithuania, Erich Leitgeb, Pirmin Pezzei, Thomas Plank, Graz University of Technology, Graz, Austria
- 3. PHASE NOISE OF THE EFFECTIVE LOCAL OSCILLATOR WAVEFORM IN HARMONIC REJECTION MIXER,**
Ludwig Lubich, Technical University of Sofia, Bulgaria
- 4. FREQUENCY DOMAIN ANALYSIS OF BIOMEDICAL SIGNALS,**
Viktor A. Nediakov, Technical University of Sofia, Bulgaria
- 5. MULTIFUNCTIONAL SYSTEM FOR PHYSIOTHERAPY,**
Atanas Dimitrov, Sasho Guergov, Dimiter Tz. Dimitrov, Technical University of Sofia, Bulgaria
- 6. DEVICE FOR ACCUPRESURE WORKING IN MAGNETIC FIELD,**
Sasho Guergov, Dimiter Dimitrov, Atanas Dimitrov, Technical University of Sofia, Bulgaria

Coffe Break

15h - 15h 30min

CLOSING CONFERENCE SESSIONS

15h 30min- 16h

Building of Library, fourth floor
Technical University of Sofia, Bulgaria

SOCIAL PROGRAM

- **Conference Dinner**, 19h, October 12th
- **Trip**, October, 13th.

More information regarding Conference dinner and trip will be provided during the first day of the Conference (October 12th)

CONTACT US:

http://oldweb.tu-sofia.bg/eng_new/fktt/cema16

Submission of contributions

Prof. Dr. Dimiter Dimitrov

Faculty of Telecommunication
Technical University of Sofia
8, Kliment Ohridsky str.
1756 Sofia, Bulgaria
Phone: ++359 2 9652278
Fax: ++359 2 9652278
E-mail: dcd@tu-sofia.bg

Cultural programme and hotel reservation

Prof. P. Frangos

National Technical University of Athens
School of Electrical and Computer Engineering
9, Iroon Polytechniou Str. ,
157 73 Zografou, Athens, Greece
Phone : 00 30 210 772 3694
Fax : 00 30 210 772 2281
E-mail : pfrangos@central.ntua.gr

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