

# FLASH!

Newsletter of the IEEE AP/ED/MTT  
North Italy Chapter

Issue 1, March 2015

antennas analysis design me-  
based communication v  
technologies nanostru  
analysis antennas m  
design satellite elect  
amplification appl  
radiation transmi  
generation contr  
materials transm  
applied optics n  
analysis plasmas  
amplification m  
materials transr  
sub-millimeter v  
testing radiation  
satellite telecom  
circuits multi-cir  
wireless electrom  
transport radio as  
quantum-effect m  
based communicati  
waves microwaves sig  
metals control electro  
frequency design measur  
devices emerging materials u.

reception  
-frequency na  
tum-effect mate  
ab-millimeter wav  
ostructures amplifi  
ommunications sei  
y mobile guided-w  
tion generation tes  
mas radio astronon  
s signal processing  
ctromagnetic wave  
tron devices ion c  
omponents packa  
emodulation mo  
c materials pacel  
tices millim  
-ials pl

propagation electromagnetic waves discre  
ications electron devices ion devices  
ssemblies components packages  
etic waves demodula  
lulation electromag  
action terrestrial c  
unsport radio astr  
al processing testing ion devic  
s demodulation transmission  
s detection space-based comu  
reception terahertz electron  
dio-frequency electromagnet  
nodulation wireless telecomm  
l communications guided-wa  
ontinuous media sensing app  
s metals organic materials pla  
lines generation amplification  
integrated circuits reception  
s guided-wave technologies ra  
ie generation control propagati  
ging materials transmission lines  
ss applied optics mo  
as analysis plasmas rad  
control amplification mol  
a-effect materials transmissio

ous media sensing applied optics millimeter waves sub-millimeter waves signal processing radio astronomy terrestrial communications space-  
als organic materials plasmas semiconductors quantum-effect materials emerging materials radio-frequency microwaves terahertz guided-wave  
generation amplification modulation control transmission reception detection demodulation electromagnetic energy transport semiconductors  
grated circuits reception amplification applied optics radio-frequency nanostructures detection terrestrial communications telecommunications  
inductors analysis antennas measurement insulators wireless electromagnetic waves demodulation modulation metals integrated circuits reception  
ications design satellite electromagnetic energy transport radio astronomy organic materials packages microwaves guided-wave technologies  
ckages microwaves guided-wave technologies radiation transmission lines quantum-effect materials electron devices millimeter waves mobile  
multi-circuit assemblies components discrete and continuous media space-based communication emerging materials plasmas sensing emerging  
ing quantum-effect materials discrete and continuous media sub-millimeter waves microwaves signal processing insulators radiation wireless  
tromagnetic energy transport antennas satellite integrated circuits components metals control electromagnetic waves multi-circuit assemblies  
materials millimeter waves semiconductors terrestrial communications radio-frequency design measurement propagation transmission control  
based communication electromagnetic energy transport applied optics electron devices emerging materials millimeter waves quantum-effect  
nnas microwaves detection satellite metals nanostructures radiation reception integrated circuits packages insulators components measurement  
semiconductors sensing design organic materials discrete and continuous media multi-circuit assemblies antennas analysis design measurement  
imeter waves sub-millimeter waves signal processing radio astronomy terrestrial communications space-based communication wireless mobile  
uctors quantum-effect materials emerging materials radio-frequency microwaves terahertz guided-wave technologies nanostructures integrated  
ntrol transmission reception detection demodulation electromagnetic energy transport semiconductors analysis antennas measurement insulators  
plied optics radio-frequency nanostructures detection terrestrial communications telecommunications design satellite electromagnetic energy  
ssion lines quantum-effect materials electron devices millimeter waves mobile generation control propagation sub-millimeter waves terahertz  
er waves terahertz signal processing testing ion devices transmission multi-circuit assemblies components discrete and continuous media space-  
-amplification packages demodulation transmission generation testing quantum-effect materials discrete and continuous media sub-millimeter  
devices detection space-based communication electromagnetic energy transport antennas satellite integrated circuits components  
ologies reception terahertz electron devices organic materials millimeter waves semiconductors terrestrial communications radio-  
hertz radio-frequency electromagnetic waves space-based communication electromagnetic energy transport applied optics electron  
tion modulation wireless telecommunications antennas microwaves detection satellite metals nanostructures radiation reception



**FLASH!** is the quarterly Newsletter of the IEEE AP/ED/MTT North Italy Chapter.

It is aimed at promoting and sharing the various initiatives (including academic and industrial events, seminars, courses, and workshops) organized by the Chapter Members, as well as to encourage participation to the IEEE activities, conferences, and symposia.

#### Chapter Officers

Giacomo Oliveri, Chair

*Università degli Studi di Trento*

Fabrizio Bonani, Vice-chair and Treasurer

*Politecnico di Torino*

#### FLASH! Board

Maurizio Bozzi

*Università degli Studi di Pavia*

Sandra Costanzo

*Università della Calabria*

Francesco D'Agostino

*Università degli Studi di Salerno*

Vincenzo D'Alessandro

*Università degli Studi di Napoli "Federico II"*

Alessandro Galli

*Università di Roma "La Sapienza"*

Elena Gnani

*Università di Bologna*

Marco Donald Migliore

*Università degli Studi di Cassino  
e del Lazio Meridionale*

Andrea Francesco Morabito

*Università degli Studi Mediterranea  
di Reggio Calabria*

Paola Pirinoli

*Politecnico di Torino*

Davide Ramaccia

*Università degli Studi "Roma Tre"*

Andrea Randazzo

*Università degli Studi di Genova*

#### Mailing address

ELEDIA Research Center, University of Trento

Via Sommarive 9, 38123 Trento, Italy

Tel.: +39 0461 28 5227

Fax: +39 0461 28 3166

email: [apedmtt-northitaly@ieee.org](mailto:apedmtt-northitaly@ieee.org)

URL: [www.ieee-apedmtt.it](http://www.ieee-apedmtt.it)

The IEEE AP/ED/MTT North Italy Chapter is part of the Italy Section (<http://sites.ieee.org/italy/>)

© 2015, IEEE AP/ED/MTT North Italy Chapter  
All rights reserved.

## OUTLINE

Scanning the issue .....	2	Funding opportunities.....	5
At a glance.....	2	Research news.....	5
Meet the Chapter.....	3	Save the date.....	6
Grants and awards.....	4	Conferences and workshops.....	7

## SCANNING THE ISSUE

Welcome to the first issue of FLASH!, the newsletter of the IEEE AP/ED/MTT North Italy Chapter, which collects the recent activities and accomplishments of our Members, as well as the ongoing initiatives within the Chapter scope.

First of all, the Chapter is honored to announce two outstanding achievements. More in detail, Prof. Roberto Sorrentino (Università di Perugia) has been awarded the 2015 Microwave Career Award from the Microwave Theory and Techniques Society. Moreover, Prof. Roberto Graglia (Politecnico di Torino) has been elected the new President of the IEEE Antennas and Propagation Society.

There are good news concerning our dissemination activities. The Chapter has recently published its new website ([www.ieee-apedmtt.it](http://www.ieee-apedmtt.it)), as well as its Twitter account ([https://twitter.com/ieee\\_apedmtt\\_ni](https://twitter.com/ieee_apedmtt_ni)). Please visit them and do not hesitate to suggest modifications, or to propose news and events to be posted.

Finally, I would like to bring your attention to the open grants and awards targeted to students: please spread the word on these important opportunities.

You will find much more news and information in the Newsletter, the preparation of which would not have been possible without the help and support of the Members of the FLASH! Board, as well as of all the Chapter Members.

I hope you'll enjoy it!

Giacomo Oliveri  
CHAPTER CHAIR  
ELEDIA Research Center  
Università di Trento

## AT A GLANCE

The IEEE Antennas & Propagation/Electron Devices/Microwave Theory & Techniques North Italy Chapter is currently one of the largest chapters of the IEEE Italy Section. Its members belong to several different Universities, Research Centers, and Industries located in more than 150 cities in Italy.

The total number of active members is reported below.

Role	Members
Student Members	42
Regular Members	288
Senior Members	69
Fellows	27
<b>Total Members</b>	<b>426</b>

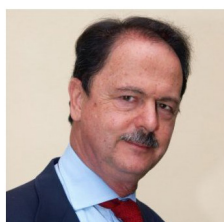
[Source: SAMIEEE - January 2015]

## MEET THE CHAPTER

### Recent initiatives, awards, and events

#### AWARD

The IEEE MTT Society has awarded the **2015 Microwave Career Award** to Prof. Roberto Sorrentino (*Università di Perugia*).



Prof. Sorrentino is the first Italian to receive this award since its inception in 1973. The Microwave Career Award recognizes an individual (IEEE member) for career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques, and has been awarded to several prominent scientists, including Mumford, Wheeler, Whinnery, Weber, Cohn,

Tomiyasu, Oliner, Marcuvitz, Matthaei, Young, Cullen, Pucel, Saad, Kurokawa, Rosen, and Itoh.

Info: [www.mtt.org/past-awardees-microwave-career-award.html](http://www.mtt.org/past-awardees-microwave-career-award.html)

#### PROJECT INITIATIVE

The project HySolarKit, proposed and patented by researchers from the Department of Industrial Engineering at the University of Salerno, aims to develop an after-market kit to convert a car into a Hybrid Solar Vehicle, so reducing fuel consumption and emissions.

The kit, already tested on a FIAT Punto, can be applied to every front drive car, at a fraction of the investment cost with respect to buying a new hybrid car. Due to partial recovery of the braking energy, to the optimization



of two propulsion systems and to the free solar recharge, fuel savings up to 20% in typical urban driving can be achieved, starting from tests and studies recently published by the Italian researchers. Moreover, car emission standards can be upgraded (i.e from Euro 3 to Euro 4 and so on), so allowing accessing to Limited Traffic Zones. Vehicle control is achieved via OBD port, without accessing or modifying the original ECU. The prototype, which has been also selected as a symbol of future green cars in the movie "Asphyxia", has recently attracted attention from Chinese investors.

Further details at [www.hysolarkit.com](http://www.hysolarkit.com)

#### DOCTORAL COURSES

The Members of the chapters have been recently involved in several ESoA Doctoral Courses ([www.esoa-web.org](http://www.esoa-web.org)), including the following

- "Microwave Imaging and Diagnostics", Madonna di Campiglio, Trento, March 24-28 2014;
- "Arrays and Reflectarrays", Louvain-La-Neuve (Belgium), September 29-October 3 2014;
- "Antenna Synthesis", Napoli, October 13-17 2014
- "Transformation Electromagnetics for Antenna Design", London (UK), January 28-30 2015.

Please check the Chapter website for updates on the location and availability of future courses offered by the Chapter members.

#### ELECTION

Prof. Roberto Graglia (*Politecnico di Torino*) has been elected as the new **President of the IEEE Antennas and Propagation Society**.



The Society includes more than 8500 members all over the world, and its field of interest include antennas, radiation, propagation, and applications and systems pertinent to antennas, propagation, and sensing, such as applied optics, millimeter- and sub-millimeter-wave techniques, antenna signal processing and control, radio astronomy, and propagation and radiation aspects of terrestrial and space-based communication, including wireless, mobile, satellite, and telecommunications.

Info: [www.ieeeaps.org](http://www.ieeeaps.org)

#### AWARD

The organizing committee of the International Conference on Numerical Electromagnetic Modeling and Optimization for RF, Microwave and Terahertz applications (NEMO 2014),



held in Pavia, Italy, 14-16 May 2014, has awarded the **Student Paper Competition Award** to Alberto Tibaldi, Ph.D student at the Department of Electronics and Telecommunications (DET) of the Politecnico di Torino, for the paper: "Analysis of diffraction gratings by the Mortar-Element Method," co-authored by A. Tibaldi, R. Orta, O. A. Peverini, R. Tascone, and G. Virone.



#### AWARD

The IEEE Antennas and Propagation Society has awarded the **IEEE Antennas and Propagation Society Pre-Doctoral Research Award** to Christian Zambiasi, Ph.D student at the ELEDIA Research Center of the University of Trento. Ing. Zambiasi



has been awarded for the project "Tolerance Evaluation of Multi-layered Antenna Array Architectures through Interval Analysis", which has been evaluated by the IEEE AP-S Award committee in terms of creativity, quality, and technical interest. The project will be developed at the ELEDIA Research Center of the University of Trento.

Additional info at [www.ieeeaps.org](http://www.ieeeaps.org)



## MEET THE CHAPTER (CONT.)

### WORKSHOP

The first joint International EUROSIOI Workshop and International Conference on Ultimate Integration on Silicon (EUROSIOI-ULIS 2015) took place in Bologna, Italy, from Monday through Wednesday January 26-28, 2015. The aim of the first joint EUROSIOI-ULIS Conference was to provide an open forum for the presentation



and discussion of recent research in technology, physics, modeling, simulation and characterization of advanced nano-scale and micro-scale semiconductor-on-insulator and silicon-compatible devices. Papers in the More Moore, More than Moore and Beyond CMOS domains (in-

cluding the use of alternative semiconductor and dielectric materials, innovative devices architectures, device-circuit co-design, etc.) were presented during the Conference. This year, the conference program featured 5 invited papers and 45 oral presentations, which were ca-

refully selected by the TPC. Moreover, one workshops was organized with the aim of presenting the state of the art of III-V compound semiconductors characterization, modeling and integration into mainstream CMOS technologies and to present recent advancements in industry-oriented TCAD software for III-V based devices. About 130 participants including graduate students, researchers and Ph. D scholars from various institutions attended the event.

### MINI-COLLOQUIUM

The ED Italy Chapter organized a one day Mini-Colloquium activity on Nov. 4 2014 at the University of Bologna. Seven distinguished lectures were delivered by Profs. E. Sangiorgi, M. Rudan, A. Lacaita, M. Ostling, S. Cristoloveanu, F. Maloberti and P. Tenti. More than sixty people attended the Colloquium. This activity provided a good opportunity for Master student, Ph.D scholars, and young researchers to interact with some of the Europe's top researchers.



Additional details: <http://eds.ieee.org/dl.html?eid=79>

## GRANTS AND AWARDS

### Open applications for members and students



Two (2) travel grants (amount: 300 Euro) are made available to students interested to attend the 27th EUPROMETA Doctoral School on Metamaterials entitled "Electromagnetic, acoustic, and thermal invisibility" organized at the University of Roma Tre, Rome. To participate, send your request to the school coordinator Prof. F. Bilotti ([bilotti@uniroma3.it](mailto:bilotti@uniroma3.it))

Additional info: [school.metamorphose-vi.org](http://school.metamorphose-vi.org)

Two 2015 Raj Mittra Travel Grants are made available to partially support travel by one young and one established doctoral scientist to attend the 2015 IEEE Int. Symposium on Antennas and Propagation in Vancouver, Canada, July 19-25, 2015.

Deadline: February 2015.

Additional info: [www.ieeeaps.org/pdfs/2015\\_Raj\\_Mittra\\_Travel\\_Grant.pdf](http://www.ieeeaps.org/pdfs/2015_Raj_Mittra_Travel_Grant.pdf)

The 2015 PhD and Masters Student Fellowships of the IEEE Electron Devices Society are now open. These awards are presented annually to promote, recognize, and support graduate and masters level study and research within the EDS field of interest. For both Masters and PhD, it is expected that at least one fellowship will be awarded to a student in each of the following geographical regions: Americas, Europe/Middle East/Africa, and Asia/Pacific.

Deadline: May 15, 2015

Additional info: [eds.ieee.org](http://eds.ieee.org)



The ICEAA-IEEE APWC 2015 award is established to recognize the author(s) who present at the ICEAA - IEEE APWC conferences an exceptional paper in terms of content and impact on Electromagnetics. Candidates must submit electronically their contribution to according to the Conference standards.

Submission of abstracts deadline: March 13, 2015

Additional info: [www.iceaa.net](http://www.iceaa.net)



The 2015 MTT Project Connect initiative is established to bring an exceptional group of undergraduate students to the IEEE IMS conference. Approximately thirty students from underrepresented groups will be carefully selected through a competitive application process.

Deadline: February 2015.

Additional info: [www.ims2015.org/project-connect-m](http://www.ims2015.org/project-connect-m)

The application for the 2015-2016 Pre-Doctoral/PhD Fellowship Research Awards are now open. The IEEE Antennas and Propagation Society (AP-S) awards up to six \$1000 pre-doctoral scholarships and up to ten \$2500 PhD fellowships each year to encourage students to pursue a career in the area of Electromagnetics.

Deadlines: April 1, 2015 (first competition) and November 1, 2015 (second competition)

Info: [www.ieeeaps.org/pdfs/APResearchAwardAnnouncement\\_2015-16.pdf](http://www.ieeeaps.org/pdfs/APResearchAwardAnnouncement_2015-16.pdf)





## FUNDING OPPORTUNITIES

## Next calls at the national and international level

Program	Title	Deadline	Link
EMBO: European Molecular Biology Organization	EMBO - Workshops	March 1, 2015	<a href="http://www.embo.org/funding-awards/courses-workshops">www.embo.org/funding-awards/courses-workshops</a>
NATO Program	Nato Science for Peace and Security (SPS) - Advanced Study Institutes (ASI)	March 1, 2015	<a href="http://www.nato.int/cps/en/natolive/85291.htm">www.nato.int/cps/en/natolive/85291.htm</a>
	Nato Science for Peace and Security Programme (SPS) - Multi-years projects	March 1, 2015	<a href="http://www.nato.int/cps/en/natolive/85291.htm">www.nato.int/cps/en/natolive/85291.htm</a>
	Nato Science for Peace and Security (SPS) - Advanced Research Workshops (ARW)	March 1, 2015	<a href="http://www.nato.int/cps/en/natolive/85291.htm">www.nato.int/cps/en/natolive/85291.htm</a>
	Nato Science for Peace and Security (SPS) - Advanced Training Course (ATC)	March 1, 2015	<a href="http://www.nato.int/cps/en/natolive/85291.htm">www.nato.int/cps/en/natolive/85291.htm</a>
Horizon 2020	Excellent Science - ERC - Consolidator Grant 2015	March 12, 2015	<a href="http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/erc-2015-cog.html">ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/erc-2015-cog.html</a>
	IMI 2 - Call 3: Stage 1	March 24, 2015	<a href="http://www.imi.europa.eu/content/stage-1-14">www.imi.europa.eu/content/stage-1-14</a>
Google awards	Google faculty research awards	April 15, 2015	<a href="http://research.google.com/university/relations/research_awards.html">research.google.com/university/relations/research_awards.html</a>
Horizon 2020	Excellent Science - Research infrastructures	April 21, 2015	<a href="http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-infrasupp-2015-2.html">ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-infrasupp-2015-2.html</a>
	Societal Challenges - Climate action, environment, resource efficiency and raw materials	April 21, 2015	<a href="http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-sc5-2015-two-stage.html">ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-sc5-2015-two-stage.html</a>
	Societal Challenges - Smart, green and integrated transport	April 23, 2015	<a href="http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-mg-2015-twostages.html">ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-mg-2015-twostages.html</a>
	Excellent Science - Marie Skłodowska-Curie Actions - Research and Innovation Staff Exchange Scheme (RISE)	April 28, 2015	<a href="http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-msca-rise-2015.html">ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-msca-rise-2015.html</a>

## RESEARCH NEWS

## Some recent contributions from our Members

- L. Codecasa, V. d'Alessandro, A. Magnani, and N. Rinaldi, "Compact dynamic modeling for fast simulation of nonlinear heat conduction in ultra-thin chip stacking technology," *IEEE Trans. Compon. Packag. Manuf. Technol.*, vol. 4, no. 11, pp. 1785-1795, Nov. 2014.
- L. Ding, E. Gnani, S. Gerardin, M. Bagatin, F. Driussi, P. Palestri, L. Selmi, C. Le Royer, and A. Paccagnella, "Total ionizing dose effects in Si-based tunnel FETs," *IEEE Trans. Nucl. Sci.*, vol. 61, n. 6, pp. 2874-2880, Dec. 2014.
- S. Costanzo and F. Venneri, "Miniaturized fractal reflectarray element using fixed-size patch," *IEEE Antennas Wireless Propag. Lett.*, vol. 13, pp. 1437-1440, 2014.
- G. B. Beneventi, E. Gnani, A. Gnudi, S. Reggiani, and G. Baccarani, "Optimization of a pocketed dual-metal-gate TFET by means of TCAD simulations accounting for quantization-induced bandgap widening," *IEEE Trans. Electron Devices*, vol. 62, n. 1, pp. 44-51, Jan. 2015.
- M. Carlin, G. Oliveri, and A. Massa, "Hybrid BCs-deterministic approach for sparse concentric ring isophoric arrays," *IEEE Trans. Antennas Propag.*, vol. 63, no. 1, pp. 378-83, Jan. 2015.
- M. T. Bevacqua, L. Crocco, L. Di Donato, and T. Isernia, "An algebraic solution method for nonlinear inverse scattering," *IEEE Trans. Antennas Propag.*, vol. 63, no. 2, pp. 601-610, Feb. 2015.
- S. Costanzo, G. Di Massa, M. Pastorino, A. Randazzo, "Hybrid microwave approach for phaseless imaging of dielectric targets," *IEEE Geosci. Remote Sens. Lett.*, vol. 12, n. 4, pp. 851-854, April 2015.
- M. Meneghini, I. Rossetto, D. Bisi, A. Stocco, A. Chini, A. Pantellini, C. Lanzieri, A. Nanni, G. Meneghesso, and E. Zanoni, "Buffer Traps in Fe-Doped AlGaIn/GaN HEMTs: Investigation of the Physical Properties Based on Pulsed and Transient Measurements," *IEEE Trans. Electron Devices*, vol. 61, no. 12, pp. 4070-4077, Dec. 2014.
- M. Ghittorelli, F. Torricelli, L. Colalongo, Z. M. Kovacs-Vajna, "Accurate Analytical Physical Modeling of Amorphous InGaZnO Thin-Film Transistors Accounting for Trapped and Free Charges," *IEEE Trans. Electron Devices*, vol. 61, no. 12, pp. 4105-4112, Dec. 2014.
- L. M. Procel, F. Crupi, J. Franco, L. Trojman, B. Kacer, "Defect-Centric Distribution of Channel Hot Carrier Degradation in Nano-MOSFETs," *IEEE Electron Device Letters*, vol. 35, no. 12, pp. 1167-1169, Dec. 2014.
- P. Cosseddu, F. Viola, S. Lai, L. Raffo, A. Bonfiglio, "A temperature transducer based on a low-voltage organic thin-film transistor detecting pyroelectric effect," *IEEE Electron Device Letters*, vol. 35, no. 12, pp. 1296-1298, Dec. 2014.
- I. Cerutti, F. Martinelli, N. Sambo, F. Cugini, and P. Castoldi, "Trading regeneration and spectrum utilization in code-rate adaptive flexi-grid networks," *J. Lightw. Technol.*, vol. 32, no. 23, pp. 4496-4503, Dec. 2014.
- M. Visintin, G. Bosco, P. Poggolini, and F. Forghieri, "Adaptive Digital Equalization in Optical Coherent Receivers With Stokes-Space Update Algorithm," *J. Lightw. Technol.*, vol. 32, no. 24, pp. 4759-4767, Dec. 2014.
- N. Rossi, P. Serena, A. Bononi, "Stratified-Sampling Estimation of PDL-Induced Outage Probability in Nonlinear Coherent Systems," *J. Lightw. Technol.*, vol. 32, no. 24, pp. 4905-4911, Dec. 2014.
- S. Bellini, M. Ferrari, A. Tomasoni, C. Costantini, L. Razzetti, G. Gavioli, "LDPC design for block differential modulation in optical communications," *J. Lightw. Technol.*, vol. 33, no. 1, pp. 78-88, Jan. 2015.
- S. Pergoloni, M. Biagi, S. Rinauro, S. Colonnese, R. Cusani, G. Scarano, "Merging color shift keying and complementary pulse position modulation for visible light illumination and communication," *J. Lightw. Technol.*, vol. 33, no. 1, pp. 192-200, Jan. 2015.
- A. Santarelli, D. Niessen, R. Cignani, G. P. Gibiini, P. A. Traverso, C. Florian, D. Schreurs, and F. Filicori, "GaN FET nonlinear modeling based on double pulse I/V characteristics," *IEEE Trans. Microw. Theory Techn.*, vol. 62, no. 12, pp. 3262-3273, Dec. 2014.
- F. Gentili, L. Urbani, G. Bianchi, L. Pelliccia, and R. Sorrentino, "p-i-n-diode-based four-channel switched filter bank with low-power TTL-compatible driver," *IEEE Trans. Microw. Theory Techn.*, vol. 62, no. 12, pp. 3333-3340, Dec. 2014.
- R. Giofre, L. Piazzone, P. Colantonio, F. Giannini, "A closed-form design technique for ultra-wideband doherty power amplifiers," *IEEE Trans. Microw. Theory Techn.*, vol. 62, no. 12, pp. 3414-3424, Dec. 2014.
- A. Tibaldi, R. Orta, O. A. Peverini, G. Addamo, G. Virone, R. Tascone, "Skew incidence plane-wave scattering from 2-D dielectric periodic structures: analysis by the mortar-element method," *IEEE Trans. Microw. Theory Techn.*, vol. 63, no. 1, pp. 11-19, Jan. 2015.
- C. Ponti, S. Vellucci, "Scattering by Conducting Cylinders Below a Dielectric Layer With a Fast Noniterative Approach," *IEEE Trans. Microw. Theory Techn.*, vol. 63, no. 1, pp. 30-39, Jan. 2015.
- L. Accatino, G. Bertin, M. Mongiardo, "Modal Loss Analysis of E- and H-Plane Filtering Structures," *IEEE Trans. Microw. Theory Techn.*, vol. 63, no. 1, pp. 40-47, Jan. 2015.
- L. Zappelli, "Simple, Fast, and Effective Identification of an Equivalent Circuit of a Waveguide Junction With N Ports," *IEEE Trans. Microw. Theory Techn.*, vol. 63, no. 1, pp. 48-55, Jan. 2015.
- M. Dionigi, M. Mongiardo, R. Perfetti, "Rigorous Network and Full-Wave Electromagnetic Modeling of Wireless Power Transfer Links," *IEEE Trans. Microw. Theory Techn.*, vol. 63, no. 1, pp. 65-75, Jan. 2015.
- A. Tibaldi, G. Addamo, O. A. Peverini, R. Orta, G. Virone, R. Tascone, "Analysis of Axisymmetric Waveguide Components by a Multi-Domain Spectral Method," *IEEE Trans. Microw. Theory Techn.*, vol. 63, no. 1, pp. 115-124, Jan. 2015.
- P. A. Traverso, C. Florian, F. Filicori, "A Fully Nonlinear Compact Modeling Approach for High-Frequency Noise in Large-Signal Operated Microwave Electron Devices," *IEEE Trans. Microw. Theory Techn.*, vol. 63, no. 2, pp. 352-366, Feb. 2015.
- S. Maddio, A. Cidronali, G. Manes, "Real-Time Adaptive Transmitter Leakage Cancelling in 5.8-GHz Full-Duplex Transceivers," *IEEE Trans. Microw. Theory Techn.*, vol. 63, no. 2, pp. 509-519, Feb. 2015.
- F. Scotti, F. Laghezza, P. Ghelfi, A. Bogoni, "Multi-Band Software-Defined Coherent Radar Based on a Single Photonic Transceiver," *IEEE Trans. Microw. Theory Techn.*, vol. 63, no. 2, pp. 546-552, Feb. 2015.
- V. Palazzi, F. Alimenti, P. Mezzanotte, M. Virili, C. Mariotti, G. Orecchini, L. Roselli, "Low-Power Frequency Doubler in Cellulose-Based Materials for Harmonic RFID Applications," *IEEE Microw. Compon. Lett.*, vol. 24, no. 12, pp. 896-898, Dec. 2014.

## SAVE THE DATE

### Future doctoral schools, special issues, and special sessions

#### DOCTORAL SCHOOL

The University of RomaTre, in collaboration with the METAMORPHOSE VI AISBL - Virtual Institute for Artificial Electromagnetic Materials and Metamaterials, organizes the 27th EUPROMETA Doctoral School on Metamaterials entitled “Electromagnetic, acoustic, and thermal invisibility” in the period 4-8 May 2015 at the Department of Engineering, University of Roma Tre, Via Vito Volterra 62, 00146, Rome.



The courses are designed for students of the school PhD in Physics, Materials Science and Engineering, industry experts, and anyone else interested in the world of metamaterials.

The courses cover theory and the fundamental limits of a metamaterial cloaking, the theoretical aspects and applications of invisibility cloaking and electromagnetic, theoretical aspects, experiments and applications of cloaking sound and heat.

Additional information (school program, venue, travel grants, registration fees) can be found by visiting the site (<http://school.metamorphose-vi.org>) or by mail ([secretary@metamorphose-vi.org](mailto:secretary@metamorphose-vi.org))

#### Lecturers

Prof. Andrea Alù, USA  
Prof. Filiberto Bilotti, Italy  
Prof. Steven Cummer, USA  
Prof. Sebastien Guenneau, France  
Prof. Àlvar Sanchez, Spain  
Prof. Alessandro Toscano, Italy  
Prof. Sergei Tretyakov, Finland  
Prof. Martin Wegener, Germany

#### Schedule

16 hours of teaching  
8 hours of guided study and exercises

**Registration deadline: 17 April 2015**

Address: “Roma Tre” University  
Department of Engineering  
Via Vito Volterra 62-00144 Rome - Italy

#### SPECIAL ISSUES

- IEEE-Access Special Section on “Bio-compatible materials and bio-electromagnetics for bio-medical applications”, organized by L. Matekovits, T. Kikkawa, I. Peter, K.P. Esselle. Publication date: Summer 2015
- IEEE Antennas and Wireless Propagation Letters Special Cluster on “Compressive Sensing as applied to Electromagnetics”, organized by A. Massa and F. L. Teixeira. Publication date: Spring 2015
- The Scientific World Journal’ Special Issue on “Compressed Sensing: Applications in Radar and Communications”, organized by S. Costanzo, A. Rocha, M. D. Migliore, I. Kyriakides. Publication date: Autumn 2015

#### SPECIAL SESSIONS

- “*Information Technologies in Radiocommunications*”, organized by S. Costanzo, 3rd World Conference on Information Systems and Technologies (WorldCIST’15), 1-3 April 2015, Azores, Portugal.
- “*Non-Uniform and Sparse Antenna Arrays - Innovative Concepts and Technological Solutions*”, organized by I. Lager and G. Oliveri, European Conference on Antennas and Propagation (EU-CAP), 12-17 April 2015, Lisbon, Portugal.
- “*Electromagnetic Inverse Scattering*”, organized by M. Pastorino and E. Heyman, 1st URSI Atlantic Radio Science Conference (URSI AT-RASC), 18 - 22 May 2015, Gran Canaria.
- “*Electromagnetics in Marine Applications*”, organized by M. Pastorino and A. Randazzo, Oceans’15 MTS/IEEE, 18-21 May 2015, Genova.
- “*Metatronics: Theory, Methods, and Applications*”, organized by N. Engheta, S. Maci, and G. Oliveri, IEEE Int. Symposium on Antennas and Propagation (IEEE AP-S), 19-25 July 2015, Vancouver, Canada.
- “*4D Antenna Arrays: Theory, Techniques and Applications*”, organized by A. Tennant, S. Yang, and P. Rocca, IEEE Int. Symposium on Antennas and Propagation (IEEE AP-S), 19-25 July 2015, Vancouver, Canada.
- “*Functional Materials for Electromagnetic Applications*” organized by I. Peter and L. Matekovits, Int. Conference on Electromagnetics in Advanced Applications (ICEAA), Sept. 7-11 2015, Torino. **Submission open**
- “*Antennas and Electromagnetic Devices Inspired by Electromagnetic Band Gap*”, organized by K.P. Esselle and L. Matekovits, Int. Conference on Electromagnetics in Advanced Applications (ICEAA), Sept. 7-11 2015, Torino. **Submission open**



## SAVE THE DATE (CONT.)

- “*Array systems for Radio Astronomy and Space applications: design, measurement and calibration*”, organized by Eloy de Lera Acedo and G. Virone, Int. Conference on Electromagnetics in Advanced Applications (ICEAA), Sept. 7-11 2015, Torino. **Submission open**
- “*Antenna-Feed-Chains and Front-Ends for Space and Ground Applications*”, organized by G. Addamo and O.A. Peverini, Int. Conference on Electromagnetics in Advanced Applications (ICEAA), Sept. 7-11 2015, Torino. **Submission open**
- “*Inverse Scattering Methods in Electromagnetic Imaging*” organized by M. Pastorino, Int. Conference on Electromagnetics in Advanced Applications (ICEAA), Sept. 7-11 2015, Torino. **Submission open**
- “*Area NanoNETworks: Electromagnetic, Materials and Communications*”, organized by V. Loscri, A. M. Vegni, I. Peter, L. Matkovits, Int. Conference on Body Area Networks (BodyNets), Sept. 28–30 2015 Sydney, Australia. **Submission open**

## CONFERENCES AND WORKSHOPS

### What's Next?

#### ICEAA 2015

The seventeenth edition of the International Conference on Electromagnetics in Advanced Applications (ICEAA 2015) will be held on Sept. 7-11 2015 in Torino, Italy, and is supported by the Politecnico di Torino, by the Istituto Superiore Mario Boella and by the Torino Wireless Foundation, with the principal technical cosponsorship of the IEEE Antennas and Propagation Society and the technical cosponsorship of the International Union of Radio Science (URSI) and the IEIIT – CNR. It is coupled to the fifth edition of the IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (APWC 2015).



di Torino, by the Istituto Superiore Mario Boella and by the Torino Wireless Foundation, with the principal technical cosponsorship of the IEEE Antennas and Propagation Society and the technical cosponsorship of the International Union of Radio Science (URSI) and the IEIIT – CNR. It is coupled to the fifth edition of the IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (APWC 2015).

#### Importante dates

Submission deadline: 13 March 2015

Additional information [www.iceaa.net](http://www.iceaa.net).

#### OTHER UPCOMING CONFERENCES

- European Conference on Antennas and Propagation (EUCAP), April 12-17 2015, Lisbon, Portugal. URL: [www.eucap2015.org](http://www.eucap2015.org)
- IEEE MTT-S International Conference on Microwaves for Intelligent Mobility (ICMIM), April 27-29 2015, Heidelberg, Germany. URL: [www.ihe.kit.edu/icmim2015](http://www.ihe.kit.edu/icmim2015)
- International Microwave Symposium (IMS), May 17-22, 2015, Phoenix, USA. URL: [www.ims2015.org](http://www.ims2015.org)
- 2015 IEEE AP-S Symposium on Antennas and Propagation and URSI CNC/USNC Joint Meeting (IEEE AP-S/URSI), July 19-25 2015, Vancouver, Canada. URL: [www.2015apsursi.org](http://www.2015apsursi.org)
- International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC), October 1-2 2015, Taormina, Italy. URL: [www.inmmic.org](http://www.inmmic.org). Deadline for abstracts: May 1, 2015. **Submission open**

#### METAMATERIALS 2015

The 9th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics - Metamaterials 2015 (Oxford, 7-12 Sept. 2015), is organized by the METAMORPHOSE VI AISBL ([www.metamorphose-vi.org](http://www.metamorphose-vi.org)) and hosted by the University of Oxford. This Congress will provide a unique forum to share the latest results of the metamaterials research in Europe and worldwide and bring together the engineering, physics, and material science communities working on artificial electromagnetic materials and their applications at microwaves, millimeter waves, terahertz, and optical frequencies.



to share the latest results of the metamaterials research in Europe and worldwide and bring together the engineering, physics, and material science communities working on artificial electromagnetic materials and their applications at microwaves, millimeter waves, terahertz, and optical frequencies.

#### Plenary Speakers



Sergei Tretyakov  
“Electromagnetic metamaterials: Past, present, and future”



Steve Cummer  
“Acoustic metamaterials”



Mark Brongersma  
“Device applications of semiconductor and metafilms metasurfaces”

#### Importante dates

Submission deadline: 6 March 2015

Additional information: [congress2015.metamorphose-vi.org/](http://congress2015.metamorphose-vi.org/)

antennas analysis design measurement testing radiation propagation electromagnetic waves discrete and continuous media sensing applied optics millimeter waves sub-millimeter waves signal processing radio astronomy terrestrial communications space-based communication wireless mobile satellite telecommunications electron devices ion devices insulators metals organic materials plasmas semiconductors quantum-effect materials emerging materials radio-frequency microwaves terahertz guided-wave technologies nanostructures integrated circuits multi-circuit assemblies components packages transmission lines generation amplification modulation control transmission reception detection demodulation electromagnetic energy transport semiconductors analysis antennas measurement insulators wireless electromagnetic waves demodulation modulation metals integrated circuits reception amplification applied optics radio-frequency nanostructures detection terrestrial communications telecommunications design satellite electromagnetic energy reception detection demodulation electromagnetic energy transport semiconductors analysis antennas measurement insulators wireless electromagnetic waves demodulation modulation metals integrated circuits reception amplification applied optics radio-frequency nanostructures detection terrestrial communications telecommunications design satellite electromagnetic energy transport radio astronomy organic materials packages microwaves guided-wave technologies radiation transmission lines quantum-effect materials electron devices millimeter waves mobile generation control propagation sub-millimeter waves terahertz signal processing testing ion devices transmission multi-circuit assemblies components discrete and continuous media space-based communication emerging materials plasmas sensing emerging materials transmission lines nanostructures amplification packages demodulation transmission generation testing quantum-effect materials discrete and continuous media sub-millimeter waves microwaves signal processing insulators radiation wireless applied optics modulation telecommunications sensing ion devices detection space-based communication electromagnetic energy transport antennas satellite integrated circuits components metals control electromagnetic waves multi-circuit assemblies analysis plasmas radio astronomy mobile guided-wave technologies reception terahertz electron devices organic materials millimeter waves semiconductors terrestrial communications radio-frequency design measurement propagation transmission control amplification mobile demodulation generation testing terahertz radio-frequency electromagnetic waves space-based communication electromagnetic energy transport applied optics electron devices emerging materials millimeter waves quantum-effect materials transmission lines plasmas radio astronomy propagation modulation wireless telecommunications antennas microwaves detection satellite metals nanostructures radiation reception integrated circuits packages insulators components measurement sub-millimeter waves ion devices signal processing analysis terrestrial communications guided-wave technologies semiconductors sensing design organic materials discrete and continuous media multi-circuit assemblies antennas analysis design measurement testing radiation propagation electromagnetic waves discrete and continuous media sensing applied optics millimeter waves sub-millimeter waves signal processing radio astronomy terrestrial communications space-based communication wireless mobile satellite telecommunications electron devices ion devices insulators metals organic materials plasmas semiconductors quantum-effect materials emerging materials radio-frequency microwaves terahertz guided-wave technologies nanostructures integrated circuits multi-circuit assemblies components packages transmission lines generation amplification modulation control transmission reception detection demodulation electromagnetic energy transport semiconductors analysis antennas measurement insulators wireless electromagnetic waves demodulation modulation metals integrated circuits reception amplification applied optics radio-frequency nanostructures detection terrestrial communications telecommunications design satellite electromagnetic energy transport radio astronomy organic materials packages microwaves guided-wave technologies radiation transmission lines quantum-effect materials electron devices millimeter waves mobile generation control propagation sub-millimeter waves terahertz signal processing testing ion devices transmission multi-circuit assemblies components discrete and continuous media space-based communication emerging materials plasmas sensing emerging materials transmission lines nanostructures amplification packages demodulation transmission generation testing quantum-effect materials discrete and continuous media sub-millimeter waves microwaves signal processing insulators radiation wireless applied optics modulation telecommunications sensing ion devices detection space-based communication electromagnetic energy transport antennas satellite integrated circuits components metals control electromagnetic waves multi-circuit assemblies analysis plasmas radio astronomy mobile guided-wave technologies reception terahertz electron devices organic materials millimeter waves semiconductors terrestrial communications radio-frequency design measurement propagation transmission control amplification mobile demodulation generation testing terahertz radio-frequency electromagnetic waves space-based communication electromagnetic energy transport applied optics electron devices emerging materials millimeter waves quantum-effect materials transmission lines plasmas radio astronomy propagation modulation wireless telecommunications antennas microwaves detection satellite metals nanostructures radiation reception