1. Personal Data

Andrea Gaetano Chiariello born in Sorrento on 27th Feb. 1981 (E-mail: andreagaetano.chiariello@unicampania.it).

2. Educational qualifications

Univ. of Naples Federico II, Naples, Italy
PhD in Electrical Eng. (ING-IND/31) in 2007. Thesis title: New models for high-speed interconnections. Supervisors: Profs. G. Miano and A. Maffucci

Graduated in Electronic Eng. (five-year cycle), Summa cum Laude in 2004; Thesis title: Numerical study of an "enhanced" transmission line model; Supervisors: Profs. Antonio Maffucci, Giovanni Miano, Claudio Serpico

3. Academic positions

Permanent researcher at the Department of Eng. of the Univ. of Campania, from 27th Dec. 2011 (current position).

Temporary researcher at the Department DAEIMI of the Univ. of Cassino and Southern Lazio, from 1st Sept.2010 to 27th Dec.2011

Research grant holder at the Department of Electrical Eng. of the Univ. of Naples Federico II, from 01st Aug.2008 to 01st Aug.2010

Head of the Laboratory of Circuits and Electromagnetic Computing (CIRCE) of the Univ. of Campania from Dec.2014 (current position).

4. Teaching activity

Courses in the Degree and Master Degree Courses

Univ. of Campania, Aversa (CE), Italy

From the a.y. 2011-2012 to date, he teaches at the Univ. of Campania, with particular reference to the following courses:
- Electrical Circuit Lab course (Degree in Electronic Eng. and Computer Science, 6 CFU), starting from the a.y. 2011-2012 (current position);
- High Performance and Cloud Computing course together with Prof. B. Di Martino (M.Sc. in Computer Eng., 3 of 9 CFU), starting from the a.y. 2016-2017 (current position).

From the a.y. 2011-2012 to date, he has been collaborating in the courses of
- Optimization Methods (M.Sc. in Computer Eng., responsible Prof. R. Martone);
- Circuit Theory (M.Sc. in Electronic Eng., responsible Prof. R. Martone).

Univ. of Cassino, Cassino (FR), Italy
In the a.y. 2010-2011 he was in charge of the course of "Electrotechnics and Industrial Plants" in Civil Eng. together with Prof. Pietro Varilone, Faculty of Eng.

In the a.y. 2010-2011 he collaborated with all the courses taught by the Ing-Ind/31 Electrical Eng. sector (Prof. F. Villone, A. Tamburrino, A. Maffucci, S. Ventre), in the Bachelor's and M.Sc. in Electrical Engi. and Eng. of the Environment and Territory.

Univ. of Molise, Campobasso, Italy
In the a.y. 2008-2009 he was lecturer of Elettrotecnica at the Univ. of Molise, Faculty of Agriculture, degree course in Eng. of the Agri-food Industry.

Univ. of Naples "Parthenope", Naples, Italy
In the a.y. 2007-2008 he held, as a lecturer, the integrative courses for the courses in Electrical Eng. for the degree courses in Telecommunications Eng.

Didactics in PhD courses

Univ. of Padua, Padua, Italy
In the a.y. 2016-2017 he holds the short course of "High Performance Computing Tools", as part of the International PhD course in Fusion Science and Eng., coordinator Prof. Paolo Bettini; coordinated by the following Universities: Univ. of Padua, Italy, Univ. of Naples Federico II, Italy; Instituto Superior Tecnico (IST), Lisbon, Portugal; Ludwig Maximilians Universitaet (LMU), Munich, Germany; Tampere Univ. of Technology (TUT), Tampere, Finland.

Univ. of Campania, Aversa (CE), Italy
In the a.y. 2016-2017 he holds the course of "Numerical Models and Methods" (25 hours, 5 CFU), and in the a.y. 2017-2018 he holds the course of "Numerical Methods for Nonlinear and / or Differential Models" (25 hours, 5CFU), within the Ph.D. in Industrial Engineering and Information coordinator Prof. Oronzio Manca.

Participation in doctoral colleges

Univ. of Campania, Aversa (CE), Italy
In the a.y. 2017/2018 and 2015/2016 he is part of the doctoral board of the PhD course in Industrial and Information Eng., 33rd and 31st Cycle, Department of Industrial Eng. and Information.

5. Managements activities

Member of the board of the Eng. Department of the Univ. of Campania since March 2018.

Doctoral school organization

Head of the Secretariat office of the "IEEE - Scuola Internazionale Gasparini" PhD School, Naples, Oct 23-30, 2016, organized by the National School "F.Gasparini" in collaboration with IEEE Italia Section and IEEE Section 8.

Member of the Local Organizing Committee
“XXX Riunione Annuale dei Ricercatori di Elettrotecnica”, ET2014, Sorrento, 19-20 June 2014;
“16th IEEE Workshop on Signal Propagation on Interconnects”, Sorrento, 13-16 May 2012;
“15th IEEE Workshop on Signal Propagation on Interconnects”, Naples, 08-11 May 2011;
“XXVI Riunione Annuale dei Ricercatori di Elettrotecnica”, ET2010, Naples, 9-11 June 2010.

6. Scientific activity

The scientific activity of Andrea Gaetano Chiariello involved a wide range of topics related to the disciplinary sector ING-IND/31 developed in collaborations with national and international groups, also characterized by different stays in international research laboratories.

Periods of Stay Abroad and Research Stages.

As part of the research activities on thermonuclear fusion, he was Visiting Scientist at the JET international research laboratory, Culham Science Center, Abingdon, Culham (Oxford, UK), in various periods of 2017 and 2018 (06 - 11 Nov.2017; 11 - 14 July 2017, 05 - 07 Apr.2017 and 19 - 23 Mar.2018).

The activity is focused on the analysis of faults in the diagnostic system of the JET Tokamak, the development and parallelization on hpc of codes for the magnetic analysis of the device.

In the field of high performance computing research, he was Visiting Scientist at the Barcelona Supercomputing Center, Barcelona, Spain (Sept.24 – Oct.27, 2012).

The activity carried out within the project HPC-EUROPA2 project (project number: 228398) was funded by the European Commission - Capacities Area - Research Infrastructures. The activity was aimed at acceleration and profiling of an electromagnetic code in a hpc cluster using the OmpSs tool.

In the field of research on numerical models for transmission lines, he was Visiting Ph.D student at the Univ. of Illinois, Urbana-Champain, Illinois, USA (25 Aug.2006 - 27 Nov.2006) under the guidance of Prof. Jose Schutt Ainè, Full Professor in the Department of Electrical and Computer Engineering.

The activity carried out, as part of the scientific activities of the doctoral course,

concerned the development of new electromagnetic transmission line models, their experimental verification and the study of the functions of Green by stratified means, useful for lowering the computational cost of these models.

International collaborations.

Chiariello has scientific collaborations with qualified international research institutions. In particular, it should be noted:

Fusion for Energy Association (F4E), Barcelona, Spain.
The collaboration is focused on the topics of the electromagnetic modeling of Controlled Thermonuclear Fusion reactors and have produced numerous works in joint name with its researchers (in particular with B.Bellesia, A. B. Oliva, E. Boter, A. Portone and P. Testoni), published in international journals and conferences, indexed by the Scopus database.

EUROFusion Consortium, EURATOM-CCFE Fusion Association, JET, Culham Science Center (Osxfordshire, UK)
The collaboration is focused on the topics of electromagnetic modeling of Controlled Thermonuclear Fusion reactors and have produced numerous works in a joint name with researchers of this laboratory (in particular with Y. Liu, F. Rimini, L Appel, A.Murari), published in international journals and conferences, indexed by the Scopus database.

RFX Consortium, EURATOM-ENEA Association on Fusion, (Padua, Italy)
The collaboration is focused on the topics of electromagnetic modeling of Controlled Thermonuclear Fusion reactors and has produced numerous works in joint name with researchers of this laboratory (in particular with Abate, D., Marchiori, G., Marconato, N., Bettini, P., Terranova, D.), published in international journals and conferences, indexed by the Scopus database.

ITER Organization, Diagnostics Division, (St Paul Lez Durance Cedex, France)
The collaboration is focused on the themes of electromagnetic modeling of Controlled Thermonuclear Fusion reactors and has produced numerous works in joint name with its researchers (in particular Vayakis, G.) published in the proceedings of an international congress, indexed by the Scopus database.

Research group of the Institute for Nuclear Problems, Belarus State Univ., (Minsk, Belarus)
The collaboration is focused on the topics of electromagnetic modeling of nanoscale transmission lines and has produced numerous works in joint name with researchers of this laboratory (in particular with S. A. Maksimenko and G. Ya. Slepyan)

Funding

In the year 2017 it received the Annual Individual Funding of the Base Research Activities (Law 11 December 2016 N.232) by the MIUR.

In the years 2013 - 2016 he participated in the PRIN 2010 2011 entitled “Effetti tridimensionali, non lineari e multiphysics nella modellistica e nel controllo dei dispositivi per la fusione termonucleare controllata”, scientific director: R. Martone, Second Univ. of Naples, (current Univ. of Campania, Aversa, Italy

In 2012 he received a grant from the "European Commission - Capacities Area - Research Infrastructures" as part of the project HPC-EUROPA2 project (project number: 228398) as support for Visiting Scientist activities at the Barcelona Supercomputing Center, Barcelona, Spain (24th Sept – 27th Oct 2012).

In the year 2010 the research activity of Chiariello is partially financed through EU-PON 2007-2013 funds as part of a project of industrial interest (27th Sept 2011, 27th December 2011), this activity of strong industrial interest was carried out in collaboration with the Numonix company (now part of the Micron group, Arzano, NA, Italy) ).

Publications

Chiariello has published 69 scientific papers, 32 papers of which in international journals, 33 papers in Proceeding of International Conferences, a monograph, 3 book chapters.

Scientific Research Topics

The scientific research activity of Chiariello has been articulated in various strongly coordinated lines, all of which are of interest for the SSD ING-IND 31. The main lines of this activity are described below:

Numerical modeling of magnets for controlled thermonuclear fusion
The activity was developed in the context of the working group at the Univ. of Campania (Profs. R Martone, A. Formisano, M. Mattei) and in collaboration with: the RFX laboratory, Padova, Italy (Profs. P. Bettini, D. Terranova); JET Laboratory, Culham Science Center, EURATOM-CCFE Fusion Association, Osxfordshire, UK, (A. Murari, F. Rimini); Fusion For Energy Association (A. Portone, P. Testoni, AB Oliva, E. Boter)

High Performance Computing with graphics-based architectures
The activity was developed in collaboration with various national and international research centers including the RFX laboratory (Profs. P.Bettini, D. Terranova), Jet laboratory (A .Murari, F.Rimini) and the Fusion For Energy Association (E.Boter, ABOliva, A.Portone, P.Testoni).

Numerical modeling of high frequency interconnects

The activity was developed in collaboration with the Univ. of Naples Federico II and the Univ. of Cassino and Southern Lazio (Profs. A. Maffucci, G. Miano and F. Villone).

Numerical modeling of stratified media
The activity was developed in collaboration with the Univ. of Naples Federico II and the Univ. of Cassino and Southern Lazio (Profs. A. Maffucci, G. Miano and F. Villone).

Electromagnetic models for Carbon nanotubes
The activity was developed in collaboration with the Univ. of Naples Federico II and the Univ. of Cassino and Southern Lazio (Profs. A. Maffucci and G. Miano).

Signal integrity analysis and electromagnetic compatibility
The activity was developed in collaboration with Italian companies such as A.S.D. of Carriero D. & C., and multinationals, such as STMicroelectronics, Numonyx (now part of the Micron group), and in collaboration with the Univ. of Naples Federico II and the Univ. of Cassino and Lazio Meridionale (Profs. D. Capriglione, A. Maffucci, G. Miano, F. Villone).