Università di Genova

Mario Nervi

Associate Professor

EDUCATION AND TRAINING

1994
Ph.D. in Electrical Engineering
Theoretical Formulation and development of a three-dimensional software for the electromagnetic analysis of eddy-current problems
Università di Genova - Genova – IT

1989
Degree (Old System) in Power Electrical Engineering
Development and optimization of finite element software for the thermo-magnetic analysis of toroidal coils for resistive Tokamak machines – 110/110 cum laude
Università di Genova - Genova – IT

1983
High School Diploma
60/60 cum laude
I.T.I.S. G. Ferraris - Savona - IT

PROFESSIONAL HISTORY

2004 – ONGOING
Associate Professor
Teaching Electric Circuits, low frequency Electric and Magnetic Fields and Numerical Methods, together with related research and technology transfer
Università di Genova - Genova – IT

1994 – 2003
Assistant Professor
Teaching Electric Circuits, low frequency Electric and Magnetic Fields and Numerical Methods, together with related research and technology transfer
Università di Genova - Genova – IT

1994
Contract Professor
Teaching Foundations of Electrical Engineering within the University Diploma in Infrastructure Engineering, Academic 1993/94
Università di Parma - Parma – IT

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ACADEMIC APPOINTMENTS

2009 - ONGOING

Head of EMCAD lab

The research group has historically dealt with electromagnetic CAD, mainly in low frequency, and related technological applications (optimized design of magnets, insulators, motors, actuators, etc.). It also deals with the simulation of environmental emissions of electric and magnetic fields by some of these devices (power lines, return electrodes for high voltage and direct current connections) and the related compatibility assessments. In more recent times, the problems of induction of overvoltages due to direct and indirect lightning strikes have been added. The topics studied by the laboratory are also the subject of technology transfer activities and are carried out by providing qualified consultancy to companies, organizing courses and seminars, and collaborating with national and international standards organizations.

Università di Genova - Genova – IT

2004 - ONGOING

Member of many Commissions of Degree and Master Courses in Power Electrical Engineering

Member, over the years, of several organizational commissions of Degree and Master Courses in Power Electrical Engineering (Quality Assurance, Teaching, Admission to the Master Course, et cetera).

Università di Genova - Genova – IT

EXPERIENCE

OTHER EXPERIENCES – PREVIOUS JOBS

JAN-JUN 1990 Auxiliary Agent of the Commission of the European Communities, cat. A/III/1

Agent in charge of studies about the electromechanical behavior of components (“first wall components”) for the experimental controlled nuclear fusion reactor ITER.

Joint Research Centre, Ispra Site, Commission of the European Communities – Ispra – IT

OTHER EXPERIENCES – TECHNOLOGY TRANSFER

2020 – ONGOING Member of MT8 of TC 115 IEC

Participation in the maintenance activities of the IEC TS 62344 technical standard, about sea/land return electrodes used in HVDC (High Voltage Direct Current) power electrical links.

IEC – International Electrical Commission – Genève – CH

2015 – ONGOING Member of CT 115/122 CEI

Participation in technical standardization activities related to the HVDC and HVAC sectors (High Voltage Direct and Alternating Current equipment and systems).

CEI – Comitato Elettrotecnico Italiano – Milano - IT

2024 Technical course

Design and Teaching of a technical course, held in presence, describing the main aspects related to the location, design and installation of sea return electrodes used in HVDC power electrical links.

Prysmian Power Link S.r.l. – Milano – IT

Università di Genova

2022 Technical course
Teaching of a technical course, held online, describing the main aspects related to the location, design and installation of sea return electrodes used in HVDC power electrical links.
Prysmian Power Link S.r.l. – Milano – IT

2022-2023 Consultancy
Consultancy about the technical feasibility of a pair of sea return electrodes to be used in a HVDC power electrical link mostly located in Asia.
Prysmian Power Link S.r.l. – Milano – IT

2020 – 2024 Consultancy
Series of consultancy about several technical-constructive aspects of sea return electrodes used in some national HVDC power electrical links, about the preparation of technical specifications on the subject, and assistance in the development of materials and configurations of innovative marine return electrodes.
TERNA S.p.A. – Roma – IT

2019-2020 Verification consultancy
Consultancy about the verification of the preliminary design of a pair of sea return electrodes used in a HVDC power electrical link located in the Mediterranean Sea.
Prysmian Power Link S.r.l. – Milano – IT

2011 – ONGOING Various consultancies
Seamless series of consultancies about various technical-constructive aspects of sea/land return electrodes used in numerous HVDC power electrical links in Italy and abroad (in particular about the selection of electrode sites, the study of electrode interactions with other infrastructures, their technical feasibility, preparation of technical specifications, monitoring of design and construction documentation, and field acceptance measurements downstream of construction).
CESI – Centro Elettrotecnico Sperimentale Italiano “Giacinto Motta” S.p.A. – Milano – IT

2010-2011 Design consultancy
Consultancy about the preliminary design and drafting of the technical specifications of a pair of sea return electrodes used in a HVDC power electrical link of international importance, located in the Adriatic Sea.
CESI – Centro Elettrotecnico Sperimentale Italiano “Giacinto Motta” S.p.A. – Milano – IT

2006-2007 Design verification consultancy
Consultancy about the verification through simulations of a sea return electrode used in a HVDC power electrical link of national importance.
Prysmian S.p.A. – Milano – IT

2004-2005 Design verification consultancy
Design verification, through three-dimensional finite element simulations, of various very high uniformity resistive magnets with ferromagnetic core, for use in cancer therapy.
ASG Superconductors S.p.A. – Genova – IT

2003-2006 Participation in the FIRB 2001 project
Participation in a national research project funded by MIUR, aimed at the development of numerical techniques for the optimization of the distribution of the electromagnetic field in mobile phone networks; the activity consisted mainly in the development of stochastic optimizers for the hard combinatorial Channel Allocation Problem (CAP).

MIUR – Roma – IT

2002-2004 Design consultancy
Consultancy about the preliminary design, through design optimization techniques and two-dimensional finite element simulations, and to the subsequent refinement, through three-dimensional finite element simulations, of the design of a very high uniformity magnet with ferromagnetic core for use in medical diagnostics.
ASG Superconductors S.p.A. – Genova – IT

1994 Consultancy
Consultancy within the preliminary design of electrode return system used in the HVDC power electrical link Italy-Greece.
CESI – Centro Elettrotecnico Sperimentale Italiano “Giacinto Motta” S.p.A. – Milano – IT