



## ● **ESPERIENZA LAVORATIVA**

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01/03/2021 – ATTUALE – Frascati (RM), Italia

**RESPONSIBLE OF DTT COIL POWER SUPPLIES – DTT S. C. A R. L.**

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- Coordinator of EUROfusion Task "In-vessel Coils Power Supply" (DIV-IDTT) supported by the European Agency EUROfusion in the framework of the Horizon Europe (2021-2027) Program.

26/05/2010 – ATTUALE – Frascati, Italia

**RESEARCHER – NATIONAL AGENCY FOR NEW TECHNOLOGIES, ENERGY AND SUSTAINABLE ECONOMIC DEVELOPMENT (ENEA)**

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- Responsible for the design of the Power Supply and Electrical Distribution System in the Divertor Tokamak Test (DTT) facility.
- Coordinator for EUROfusion Task "DEMO Steady State Electrical Network, HV Switchyard configuration and generator operation".
- Responsible of ENEA electrical engineering contribution to JT-60SA.
- Coordinator of the task "High-Voltage Power Supply and Modulator" of the Task Force "Cyclotron Auto-Resonance Maser (CARM)".
- Responsible for the SLD and CCL deliverables in the Grant Agreement for the Radial Neutron Camera and Radial Gamma-Ray Spectrometer for ITER, supported by F4E.
- Responsible of the ENEA Frascati laboratories to test transformer losses according to the European Union Regulation EU 548/2014.
- Director of the Contract with the Company Mont-Ele for the procurement of a high-efficiency 5-kA power supply for the ARDECO project in ENEA Casaccia, delivered in 2019.
- Director of the Contract with the Company OCEM Energy Technology for the procurement of an arbitrary current generator up to 2 kA with integrated energy storage, delivered in 2017.
- Director of the Contract with the Company OCEM Energy Technology for the procurement of the JT-60SA Switching Network Units, delivered in 2016.
- Director of the Contract with the Company EEI for the procurement of the power supply system (up to 10 kA) of the experimental plant PROTO-SPHERA, delivered in 2013.
- Assisting the Contract with the companies POSEICO and JEMA for the procurement of the JT-60SA Superconducting Magnet Power Supplies and transformers, delivered in 2017.
- ENEA Contact Person for the Goal Oriented Training in Power Supply Engineering (GOT-PSE), supported by the European Fusion Development Agreement (EFDA).
- ENEA Work Package Manager of the Grant Agreement for the "Design Verification of the Electron Cyclotron Power Supply System for ITER", supported by F4E.
- Supervisor of an Engineering Grant in support of the DEMO Plant Electrical System programmed by the European Agency EUROfusion.
- Member of the Task Force "Energy from metal-hydrogen systems" (ENERSISMI).
- Member of the Board of the PhD School in Science and Technology for Complex Systems at University of Rome Sapienza, Rome, Italy.
- Listed as expert for the evaluation of the electrical research projects of the Italian Ministry of Economic Development (MISE).
- Organizer of the "International Workshop on Supercapacitors and Energy Storage" in 2016, 2017, 2018, 2019, 2020.
- Guest Editor of the following journal special issues: "Nuclear Fusion Engineering" for the journal "Applied Sciences", "Advances in Supercapacitor Technology and Applications" and "Advances in Supercapacitor Technology and Applications II" for the journal "Energies", "SOFT 2018" for the journal "Fusion Engineering and Design".
- Organizer and chairman of the "Round Table on Nuclear Fusion" at the IEEE International Conference on Environment and Electrical Engineering (EEEIC 2015), Rome, 12 June 2015.

2008 – 2010 – Rome, Italia

**CONTRACT RESEARCHER** – RESEARCH CENTRE FOR NANOTECHNOLOGY APPLIED TO ENGINEERING (CNIS), UNIVERSITY OF ROME SAPIENZA

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- International project "Carbon Nanotube Technology for High-speed Next-generation Nano-interconnects" (CATHERINE), under the European Union Seventh Framework Programme (FP7).
- Webmaster of the Integrated Database for Nano-Interconnect Design, formerly known as [www.younanotube.eu](http://www.younanotube.eu), and of all the Internet services related to the EMC Laboratory of the University of Rome Sapienza.
- Sviluppo e caratterizzazione elettromagnetica di nanocompositi polimerici basati su strutture di carbonio", supported by the Italian University and Research Ministry (PRIN 2008).

2006 – 2008 – Rome, Italia

**CONTRACT RESEARCHER** – DEPARTMENT OF ELECTRICAL ENGINEERING, UNIVERSITY OF ROME SAPIENZA

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- International project "High Intensity Radiated Field - Synthetic Environment" (HIRF-SE) for the certification of aircrafts against electromagnetic interference, under the European Union Seventh Framework Programme (FP7).
- "Electromagnetic detection system of cellular phones and portable electronic devices aboard an aircraft" supported by the Italian University and Research Ministry (PRIN 2004).

2001 – Ariccia, Italia

**INTERNSHIP** – ABB ENERGY AUTOMATION

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- Railway power supplies.
- High voltage and high current measurements, data acquisition and LabVIEW.

## ● **ISTRUZIONE E FORMAZIONE**

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13/04/2006 – Rome, Italia

**PH.D. DEGREE IN ELECTRICAL ENGINEERING** – University of Rome Sapienza

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<http://www.uniroma1.it>

2003

**PROFESSIONAL ENGINEERING QUALIFICATION**

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<https://www.cni.it/en>

03/06/2002 – Rome, Italia

**M.SC. DEGREE IN ELECTRONIC ENGINEERING** – University of Rome Sapienza

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<http://www.uniroma1.it>

## COMPETENZE LINGUISTICHE

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Lingua madre: **ITALIANO**

Altre lingue:

	COMPRESIONE		ESPRESSIONE ORALE		SCRITTURA
	Ascolto	Lettura	Produzione orale	Interazione orale	
<b>INGLESE</b>	C1	C1	C1	C1	C1

*Livelli: A1 e A2: Livello elementare B1 e B2: Livello intermedio C1 e C2: Livello avanzato*

## PUBBLICAZIONI

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### Characterization and model parameters of large commercial supercapacitor cells

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IEEE Access, vol. 9, pp. 20376-20390, 2021

<https://doi.org/10.1109/ACCESS.2021.3053626> – 2021

A. Morandi, A. Lampasi, A. Cocchi, F. Gherdovich, U. Melaccio, P. L. Ribani, C. Rossi, F. Soavi

### Energy Analysis for the Connection of the Nuclear Reactor DEMO to the European Electrical Grid

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Energies 2020, 13, 2157

<https://doi.org/10.3390/en13092157> – 2020

S. Ciattaglia, M. C. Falvo, A. Lampasi, M. Proietti Cosimi

### Electrical Loads and Power Systems for the DEMO Nuclear Fusion Project

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Energies 2020, 13, 2269

<https://doi.org/10.3390/en13092269> – 2020

S. Minucci, S. Panella, S. Ciattaglia, M. C. Falvo, A. Lampasi

### A new generation of power supplies for pulsed loads

---

Fusion Engineering and Design, Volume 146, Part B, September 2019, pp. 1921-1925

<https://doi.org/10.1016/j.fusengdes.2019.03.066> – 2019

A. Lampasi, S. Tenconi, G. Taddia, F. Gherdovich, L. Rinaldi

### Conceptual design of the power supply systems for the Divertor Tokamak Test facility

---

Fusion Engineering and Design, Volume 146, Part A, September 2019, pp. 937-941

<https://doi.org/10.1016/j.fusengdes.2019.01.118> – 2019

A. Lampasi, A. De Santis, S. Minucci, F. Starace, P. Zito

### Development of Supervisory Control System for Magnet Power Supplies in JT-60SA

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Fusion Engineering and Design, Volume 146, Part B, September 2019, pp. 1652-1656

<https://doi.org/10.1016/j.fusengdes.2019.03.009> – 2019

S. Hatakeyama, K. Shimada, K. Yamauchi, M. Matsukawa, S. Moriyama, L. Novello, G. Frello, O. Baulaigue, E. Gaio, A. Maistrello, A. Ferro, A. Lampasi, P. Zito

## **Role of Italian DTT in the power exhaust implementation strategy**

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Fusion Engineering and Design, Volume 146, Part A, September 2019, Pages 932-936  
2019

G. Mazzitelli, R. Albanese, F. Crisanti, P. Martin, A. Pizzuto, A. Tuccillo, R. Ambrosino, A. Appi, G. Di Gironimo, A. Di Zenobio, A. Frattolillo, G. Granucci, P. Innocente, A. Lampasi, R. Martone, G. M. Polli, G. Ramogida, P. Rossi, S. Sandri, M. Valisa, R. Villari, V. Vitale

## **Design review for the Italian Divertor Tokamak Test facility**

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Fusion Engineering and Design, 2019  
2019

R. Albanese, F. Crisanti, P. Martin, A. Pizzuto, G. Mazzitelli, A.A. Tuccillo, R. Ambrosino, A. Appi, G. Di Gironimo, A. Di Zenobio, A. Frattolillo, G. Granucci, P. Innocente, A. Lampasi, R. Martone, G.M. Polli, G. Ramogida, P. Rossi, S. Sandri, M. Valisa, R. Villari, V. Vitale

## **Overview of the FTU results**

---

IOP Nuclear Fusion, Volume 59, Number 11, 2019  
2019

G. Pucella, et al.

## **Compact Power Supply with Integrated Energy Storage and Recovery Capabilities for Arbitrary Currents up to 2 kA**

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IEEE Transactions on Plasma Science, vol. 46, no. 10, pp. 3393-3400, Oct. 2018

<https://doi.org/10.1109/TPS.2018.2859178> - 2018

A. Lampasi, G. Taddia, S. Tenconi, F. Gherdovich

## **Type Tests of JT-60SA Central Solenoid/Equilibrium Field (CS/EF) Super-Conducting Magnet Power Supplies**

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IEEE Transactions on Plasma Science, vol. 46, no. 5, pp. 1489-1496, May 2018

<https://doi.org/10.1109/TPS.2018.2805104> - 2018

P. Zito, A. Lampasi, L. Novello, M. Matsukawa, K. Shimada, S. Hatakeyama, M. Portesine, A. Dorransoro, D. Vian, K. Celaya

## **High priority prototype testing in support of System Level Design development of the ITER Radial Neutron Camera**

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IEEE Transactions on Plasma Science, vol. 46, no. 5, pp. 1291-1297, May 2018

2018

M. Riva, B. Esposito, D. Marocco, M. Cecconello, J. Kotula, F. Moro, F. Belli, D. Bocian, P. Carvalho, C. Centioli, T. Cieslik, S. Conroy, N. Cruz, M. Curylo, A. Fernandes, L. Di Pace, A. Hjalmarsson, R. Kantor, A. Lampasi, G. Mazzone, F. Pompili, R. C. Pereira, S. Podda, F. Pollastrone, B. Santos, A. Zimbal, B. Brichard

## **Installation, Commissioning and Tests of Four Fast Switching Units of up to 20 kA for the JT-60SA Nuclear Fusion Experiment**

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Energies 2018, 11(4), 996

<https://doi.org/10.3390/en11040996> - 2018

A. Lampasi, F. Burini, G. Taddia, S. Tenconi, M. Matsukawa, K. Shimada, L. Novello, A. Jokinen, P. Zito

## **The DTT device: power supplies and electrical distribution system**

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Fusion Engineering and Design, Volume 122, November 2017, Pages 356-364

<https://doi.org/10.1016/j.fusengdes.2017.01.036> - 2017

A. Lampasi, P. Zito, F. Starace, P. Costa, G. Maffia, S. Minucci, E. Gaio, V. Toigo, L. Zanotto, S. Ciattaglia

## **Final tests of the four switching network units procured by the European Union for JT-60SA**

---

Elsevier Fusion Engineering and Design, Volume 124, November 2017, Pages 163-168

<https://doi.org/10.1016/j.fusengdes.2017.02.010> – 2017

A. Lampasi, P. Zito, L. Novello, M. Matsukawa, K. Shimada, F. Burini, G. Taddia, S. Tenconi

## **Design and testing of Crowbar Protection System for the JT-60SA superconducting magnet power supplies**

---

Fusion Engineering and Design, Volume 124, November 2017, Pages 131-136

<https://doi.org/10.1016/j.fusengdes.2017.03.029> – 2017

P. Zito, A. Lampasi, O. Baulaigue, S. Gharafi, L. Novello, M. Matsukawa, K. Shimada, F. Fasce, M. Portesine, A. Dorronsoro, D. Vian, K. Celaya, B. Eikelboom

## **The DTT proposal. A tokamak facility to address exhaust challenges for DEMO: Introduction and executive summary**

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Fusion Engineering and Design, Volume 122, November 2017, Pages 274-284  
2017

R. Albanese, et al.

## **D-shaped configurations in FTU for testing liquid lithium limiter: Preliminary studies and experiments**

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Nuclear Materials and Energy, Volume 12, August 2017, Pages 1082-1087

<https://doi.org/10.1016/j.nme.2017.06.002> – 2017

G. Ramogida, G. Calabro', F. Crisanti, M.L. Apicella, G. Artaserse, W. Bin, L. Boncagni, G. Brolatti, P. Buratti, M. Carlini, D. Carnevale, P. Costa, F. Crescenzi, A. Cucchiaro, D. Frigione, S. Garavaglia, M. Gospodarczyk, G. Granucci, M. Iafrazi, A. Lampasi, G. Maddaluno, G. Maffia, F. Maviglia, G. Mazzitelli, R. Mazzuca, M. Moneti, A. Moro, G. Pucella, M. Reale, S. Roccella, F. Starace, A.A. Tuccillo, A. Vertkov, P. Zito

## **Fractional-order circuit models of the human body impedance for compliance tests against contact currents**

---

Elsevier AEU - International Journal of Electronics and Communications, Volume 78, August 2017, Pag

<https://doi.org/10.1016/j.aeue.2017.04.035> – 2017

V. De Santis, V. Martynyuk, A. Lampasi, M. Fedula, M. D. Ortigueira

## **The Divertor Tokamak Test facility proposal: Physical requirements and reference design**

---

Elsevier Nuclear Materials and Energy, Volume 12, August 2017, Pages 1330-1335  
2017

F. Crisanti, et al.

## **DTT: A divertor tokamak test facility for the study of the power exhaust issues in view of DEMO**

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IOP Nuclear Fusion, Volume 57, Issue 1, 1 January 2017  
2017

R. Albanese, et al.

## **Progress of the Plasma Centerpost for the PROTO-SPHERA Spherical Tokamak**

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Energies 2016, 9(7), 508

<https://doi.org/10.3390/en9070508> – 2016

A. Lampasi, G. Maffia, F. Alladio, L. Boncagni, F. Causa, E. Giovannozzi, L. A. Grosso, A. Mancuso, P. Micozzi, V. Piergotti, G. Rocchi, A. Sibio, B. Tilia, V. Zanza

## **SiSeRHMap v1.0: a simulator for mapped seismic response using a hybrid model**

---

Geosci. Model Dev., 9, 1567-1596, 2016

<https://doi.org/10.5194/gmd-9-1567-2016> – 2016

G. Grelle, L. Bonito, A. Lampasi, P. Revellino, L. Guerriero, G. Sappa, F. M. Guadagno

## **First Switching Network Unit for the JT-60SA superconducting Central Solenoid**

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Fusion Engineering and Design, Volumes 98-99, October 2015, Pages 1098-1102  
2015

A. Lampasi, P. Zito, A. Coletti, L. Novello, M. Matsukawa, K. Shimada, F. Burini, Y. Kuate Fone, G. Taddia, S. Tenconi

## **Conceptual Design of Pulsed High Voltage and High Precision Power Supply for Plasma Heating by a Cyclotron Auto-Resonance Maser (CARM)**

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Fusion Engineering and Design, Volumes 98-99, October 2015, Pages 1197-1201  
2015

P. Zito, G. Maffia, A. Lampasi

## **Design and realization of JT-60SA Fast Plasma Position Control (FPPC) Power Supplies**

---

Fusion Engineering and Design, Volumes 98-99, October 2015, Pages 1191-1196  
2015

P. Zito, A. Lampasi, A. Coletti, L. Novello, M. Matsukawa, K. Shimada, D. Cinarelli, M. Portesine, A. Dorransoro, D. Vian

## **Present Status of the new Power Supply Systems of JT-60SA procured by EU**

---

Fusion Engineering and Design, Volumes 98-99, October 2015, Pages 1122-1126  
<https://doi.org/10.1016/j.fusengdes.2015.06.014> – 2015

L. Novello, O. Baulaigue, A. Coletti, N. Dumas, A. Ferro, E. Gaio, A. Lampasi, A. Maistrello, M. Matsukawa, K. Shimada, K. Yamauchi, P. Zito

## **A high frequency, high power CARM proposal for the DEMO ECRH system**

---

Fusion Engineering and Design, Volumes 96-97, October 2015, Pages 538-541  
<https://doi.org/10.1016/j.fusengdes.2015.02.026> – 2015

F. Mirizzi, I. Spassovsky, S. Ceccuzzi, G. Dattoli, E. Di Palma, A. Doria, G. Gallerano, A. Lampasi, G. Maffia, G. Ravera, E. Sabia, A. Tuccillo, P. Zito

## **Final design of the Switching Network Units for the JT-60SA Central Solenoid**

---

Fusion Engineering and Design, 89 (2014), 342-348

<https://doi.org/10.1016/j.fusengdes.2014.02.080> – 2014

A. Lampasi, A. Coletti, L. Novello, M. Matsukawa, F. Burini, G. Taddia, S. Tenconi

## **An alternative approach to measurement based on quantile functions**

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Measurement, vol. 41, issue 9, pp. 994-1013, Nov. 2008

<https://doi.org/10.1016/j.measurement.2008.01.009> – 2008

D. A. Lampasi

## **Poloidal Power Supply System of the Divertor Tokamak Test (DTT) Facility**

---

20th IEEE Mediterranean Electrotechnical Conference (MELECON 2020), Palermo, Italy, 16-18 June 2020  
2020

A. Lampasi, A. Cocchi, R. Romano, P. Zito

## **Modeling Non-Ideal Behaviors of Supercapacitors' Equivalent Capacitance**

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20th IEEE International Conference on Environment and Electrical Engineering (EEEIC 2020), Madrid, 2020

A. Cocchi, A. Lampasi

## **The European DEMO Fusion Reactor: Design Status and Challenges from Balance of Plant Point of View**

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17th IEEE International Conference on Environment and Electrical Engineering (EEEIC 2017), Milan, I  
<https://doi.org/10.1109/EEEIC.2017.7977853> - 2017

S. Ciattaglia, G. Federici, L. Barucca, A. Lampasi, S. Minucci, I. Moscato

## **Survey of Electric Power Supplies Used in Nuclear Fusion Experiments**

---

17th IEEE International Conference on Environment and Electrical Engineering (EEEIC 2017), Milan, I  
<https://doi.org/10.1109/EEEIC.2017.7977851> - 2017

A. Lampasi, S. Minucci

## **A Novel Conceptual Design for Gyrotron's High Voltage Power Supplies**

---

42nd IEEE Industrial Electronics Conference (IEEE IECON2016), Florence, Italy, 24-27 October 2016

<https://doi.org/10.1109/IECON.2016.7793795> - 2016

P. Zito, A. Lampasi, G. Maffia, F. Starace, G. Fasce, M. Portesine, F. Fasce, D. Cinarelli, R. Giusta

## **Preliminary design of the electrical power systems for DTT nuclear fusion plant**

---

Energies 2021, 14, 4250

<https://doi.org/10.3390/app11125446> - 2021

M. Caldora, M. C. Falvo, A. Lampasi, G. Marelli

## **Electrothermal design of DC busbars for fusion facilities**

---

Fusion Engineering and Design, Volume 170, September 2021, 112662

<https://doi.org/10.1016/j.fusengdes.2021.112662> - 2021

A. Cocchi, G. De Marzi, A. Lampasi, R. Romano

## **Design optimization for the quench protection of DTT's superconducting toroidal field magnets**

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Fusion Engineering and Design, Volume 172, November 2021, 112748

<https://doi.org/10.1016/j.fusengdes.2021.112748>

C. R. Lopes, P. Zito, C. Fiamozzi Zignani, G. Messina, L. Morici, G. Tomassetti, A. Lampasi, G. Ala, G. Zizzo

## **Lactic Acid-Based Solvents for Sustainable EDLC Electrolytes**

---

Energies 2021, 14, 4250

<https://doi.org/10.3390/en14144250> - 2021

M. Melchiorre, R. Esposito, M. Di Serio, G. Abbate, A. Lampasi, A. Balducci, F. Ruffo

## PERSONAL INFORMATION

Maria Carmen Falvo

## WORK EXPERIENCE

2018-today

### Associate Professor

University of Rome Sapienza, DIAEE – Dept. of Astronautics, Energy and Electrical Engineering

- Research activities in Power System for Energy sector, related to study and development of models and algorithms for the simulations of electrical grids.
- Participation and coordination as Principal Investigator of 50 national and international research projects, entrusted by qualified public / private institutions or admitted to funding with competitive calls
- Author of 114 publications in scientific international journals and conferences.
- Teaching activities in Power System for Energy sector at University of Rome Sapienza (Italy), at Universidad de Oviedo (Campus de Gijon, Spain), North Carolina State University (NC, USA), Universidad Pontificia de Comillas (Madrid, Spain)

University – Research – Teaching

2008-2018

### Assistant Professor

University of Rome Sapienza, DIAEE – Dept. of Astronautics, Energy and Electrical Engineering

- Research and teaching activities in Power System for Energy sector

University – Research – Teaching

## EDUCATION AND TRAINING

2003-2007

### PhD in Electrical Engineering

EQF level: 6

University of Rome Sapienza, Italy

- Power Systems for Energy Sector. Thesis title: Planning of Power Systems in electricity market.

2003

### II level Master in Energy Management in Natural Parks, Protected Areas, Minor Islands and Rural Areas aimed at Environmental Sustainability

EQF level: 4

University of Rome Sapienza, Italy

- Power Systems for Energy Sector. Thesis title: Artistic lighting of the village of Samo Precacore with PV power supply.

1997-2002

### M.Sc. in Electrical Engineering

EQF level: 3

University of Rome Sapienza, Italy

- Power Systems for Energy Sector. Thesis title: Planning of Power Systems in electricity market.

## PERSONAL SKILLS

Mother tongue(s)

Italian



Other language(s)	English, upper intermediate
Job-related skills	Analytical and Research skills; Computer Skills; Project Management; High-level teaching abilities.
Digital skills	Expert in Simulations Software for Power Systems (DigiSilent PowerFactory, ETAP, etc.), Programming in MatLab, Microsoft Office Package (Word, Excel, PowerPoint, etc.)
Other skills	Teamwork, Responsibility, Problem-solving, Leadership, Adaptability, Flexibility, Loyalty, Commitment towards work

**ADDITIONAL INFORMATION**

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Publications <https://www.scopus.com/authid/detail.uri?authorId=15622947700>  
<https://scholar.google.com/citations?user=pbB7f6kAAAAJ&hl=it>

Rome, October 3<sup>rd</sup> 2022

Maria Carmen Falvo

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# Curriculum vitae

**Nome e cognome:** Ruggero RICCI

**Titoli di studio:** Diploma di maturità classica conseguito con 52/60 nel 1987.  
Laurea in Ingegneria Elettrica conseguita il 27/5/94 con la votazione di 110/110 presso l'Università di Roma "La Sapienza".

**Altri titoli:** Esame di Stato per l'abilitazione alla professione di ingegnere sostenuto il 3/2/95 con la votazione di 112/120.  
Iscrizione all'Albo degli Ingegneri della Provincia di Roma dal 1996.

**Servizio militare:** Svolto in qualità di sottotenente di complemento nell'Arma delle Trasmissioni dell'Esercito. Congedato il 9/1/1996.

**Lingua straniera:** Inglese.

**Rapporto di lavoro INFN** Dipendente, con profilo di tecnologo, inizialmente con contratto a tempo determinato dal 2/5/1996; assunto 31/1/2001 con contratto a tempo indeterminato senza soluzione di continuità.  
Attualmente inquadrato con profilo di Dirigente Tecnologo dal 2022.

**Incarichi INFN** Responsabile Servizio Impianti Elettrici dei LNF dal 1/8/2007;  
Responsabile della Task 5- Impianti elettrici CNAO dal 23/7/2004 al 2010;  
Responsabile del Gruppo Impianti della Commissione Calcolo e Reti INFN dal 2010.  
Energy Manager dei LNF dal 11/12/2012.  
Work package leader del WP11C (electrical installation) nel progetto ELI-NP dal 2012  
Membro del Panel Review per i fondi ordinari di CNAF dal 2013  
Membro del CIAC (CNAF Infrastructure Advisory Committee) dal 2017  
Panel Review impianti elettrici LNGS 2016 e 2018  
Presidente o membro di varie commissioni di concorso e di gara.

**Principali attività e competenze** Impianti elettrici AT,MT e BT;  
Impianti elettrici di acceleratori di particelle;  
Energia elettrica e risparmio energetico;

Automazione industriale;  
Impianti per Data Center;  
Compatibilità elettromagnetica alle basse frequenze;  
Contratti pubblici.

**Corsi e scuole di specializzazione:**

Scuola sugli acceleratori del CAS (*Cern Accelerator School*), Cascais-Portogallo dal 21/10 al 1/11/1996.  
Scuola del CAS "Superconductivity and Cryogenics for Accelerators and Detectors", Erice, Italy 8-17 may 2002.  
Giornate di studio INFN "Sicurezza degli apparati sperimentali e tecnologici dell'INFN", Frascati, 25-27 ottobre 2004.  
Corso per "l'esecuzione dei lavori elettrici di cui alla norma CEI-EN 50110", Frascati, 16-17 novembre 2004.  
Corso di formazione INFN "Il progetto di ricerca dalla concezione al disinvestimento", Frascati 20-21-22 ottobre – 3,4,5 novembre 2008.  
Corso di formazione professionale per Energy manager nel settore industriale ENEA Roma 12-16 maggio 2014.  
Corso di formazione e aggiornamento professionale per Energy Manager ed Ege (esperto In Gestione Dell'energia) - Settore Industriale, Ordine Ingegneri Roma - 2018

**Presentazioni a convegni, corsi e Workshop**

"Impianti elettrici negli acceleratori di particelle per adroterapia" – Lezione di 17 h nel Corso nel Master in Basi fisiche e tecnologiche dell'adroterapia 2007 e 2008  
"Attività di ingegneria elettrica nell'ambito degli acceleratori di particelle" - convegno "Il ruolo chiave dell'energia elettrica nel mondo industrializzato" - Università di Roma "La Sapienza" 26/2/2007  
"Affidabilità e continuità degli impianti elettrici per i centri di calcolo"- WS CCR 2008.  
"Energy efficiency experience at Dafne" - EuCARD-2 Workshop on Cooling and Heat Recovery – Lund, 29/4/2014.  
"Impianti elettrici e Sistemi Ausiliari di Dafne" – corso per gli operatori dell'acceleratore Dafne – Frascati, 9/1/2015.  
"Efficienza energetica e fonti rinnovabili nei centri di calcolo" WS CCR Palau 11/5/2009.  
"Opportunità nei progetti a LNF" - ILO Industrial Opportunities Day 2015- Bologna 11/6/2015.  
"Data Center Infrastructure" lezioni per corso nazionale per operatori di data center INFN, Frascati 12-13-14/11/2019.