

# Mauro Cappelli's Short CV

## PERSONAL INFORMATION

**First Name:** Mauro

**Family Name:** Cappelli

## POSITIONS AND ROLES

**Researcher**, ENEA, Frascati Research Center (Italy), Division of Nuclear Fusion Physics, 2015-now.

**Researcher**, and **Head** (2013-2015), Design and Experimental Engineering Laboratory (MEPING Lab, about 10 people) ENEA, Casaccia Research Center – Rome (Italy), Division of Nuclear Fission Technology, 2010-2015.

**Italian Representative (appointed by the Italian Ministry of Research)**, Shadows thematic configurations (EURATOM-FUSION), Shadow Strategic Programme Committee, European Commission, Horizon Europe Programme (2021-2027), 2020-2021.

**Contract Professor**, Sapienza University of Rome, Department of Energy Engineering, Course on Monitoring and Control of Energy Systems, 2021-2022.

**Contract Professor**, University of L'Aquila, Department of Information Engineering, Computer Science and Mathematics, 2016-now.

**Professional Engineer (N. A30039)**, The Italian Society of Professional Engineers in Rome, since 2008.

**Member, European Academy of Sciences and Arts**, since 2016.

**Affiliate, DEWS Center of Excellence**, Università dell'Aquila, since 2014.

**Associate Editor**, ASME Journal Nuclear Engineering and Radiation Science, 2018-2021 and 2022-2024.

**Member of the Executive Board** (since 2019), **SIPS (Società Italiana per il Progresso delle Scienze)**, Member since 2016.

**Member**, Nuclear Engineering Commission, The Italian Society of Professional Engineers in Rome (since 2014).

## EDUCATION

**II Level Master, Fusion Energy**, TorVergata University of Rome 2015-16

**II Level Master, Nuclear Safety and Security**, University of Pisa, 2011-12

**Specialization degree on Teaching: Electronics**, Romatre University of Rome, 2007-09

**Specialization degree on Teaching: Computer Science**, Romatre University of Rome, 2007-09

**Post-laurea course, Total Cost Engineering & Project Management**, Bocconi Univ., 2007-08.

**PhD, Electrical Engineering**, Sapienza University of Rome, 2001-2004

**Laurea (BSc+MSc), Electrical Engineering**, University of Perugia, 1992-2000,

## VISITING POSITIONS

**Visiting Associate Professor**, University of Aalborg, Faculty of Engineering and Science, Department of Energy Technology, Feb 2019 (1 month).

**Visiting Scientist (Seconded)**, Joint European Torus (JET, Culham (UK): November 2018; March, June-July, November-December 2019 (3 months).

**Visiting Researcher**, Sofia Simulator Lab, IRSN, Paris (France): Jan-Dec 2011 (12 months).

## INVITED POSITIONS

**Invited Lecturer**, Changchun Institute of Technology (China), 27 November 2021 (Videoconference).

**Invited Lecturer**, University of Aalborg, Faculty of Engineering and Science, Department of Energy Technology, PhD Course on New Energy technology based Integrated Energy Systems: 17-19 February 2020 (8 hours)-cancelled due to Covid-19 and postponed to 28-30 June 2021.

**Invited Lecturer**, Changchun Institute of Technology (China), 17 September 2019.

**Invited Lecturer**, Shenyang University of Technology (China), 16 September 2019.

**Invited Lecturer**, University of Aalborg, Faculty of Engineering and Science, Department of Energy Technology, PhD Course on New Energy technology based Integrated Energy Systems: 11-13 February 2019 (8 hours).

**Invited Lecturer**, University of L'Aquila, Faculty of Information Engineering, Computer Science and Mathematics, Professional Course (3 CFU) on Instrumentation and Control Systems for Industrial Applications: 2013-2014, 2014-2015, 2015-2016, 2017-2018.

**Invited Lecturer**, Sapienza Università di Roma, Course in Security Systems (Prof. Fabio Garzia), Seminar on Safety and Security in Energy Systems (2h), 2016, 2017, 2021.

**Invited Lecturer**, Università di Roma Tor Vergata, Course in Digital Electronics Lab (Prof. Luca Di Nunzio), Seminar on Control systems and power electronics activities in fusion research (2h), 31 March 2018.

**Invited Lecturer**, Ordine degli Ingegneri della Provincia di Roma, (1) Experiences about cooperation and international participation in the nuclear field. Seminar on "International cooperation on Nuclear Fusion" (27/9/2019); (2) Applications of Nuclear Research in the industrial field. Webinar on "Nuclear instrumentation for new generation biomedical systems" (30/9/2020); (3) Frontier research for sustainable nuclear energy. Webinar on "Engineering aspects of nuclear fusion" (9/2/2021).

#### PAST POSITIONS

**Training Manager and ILS Engineer**, Embedded consultant @ ELSAG-DATAMAT (a Finmeccanica Company): 2008-2010.

**Research Associate**, University of Salento: 2007-2008

**Scientific Consultant, Editorial Staff and Author**, The Italian Encyclopaedia "Giovanni Treccani": 2008-2013.

**Research and Training Engineer**, Altay Scientific Spa: 2005-2006

**Certified High-School Teacher**, Electronics and Computer Science, Italian Public School 2005-2010 (**Tenured Teacher** in 2013 (Electronics) and in 2015 (Computer Science))

**PhD student (with grant), Electrical Engineering**, Sapienza University of Rome, 2001-2004

**Research Associate**, University of Perugia: 2001-2002

#### RESEARCH ACTIVITIES

*Main research interests: **Instrumentation and Control Systems for Nuclear and Conventional Plants, Radiofrequency and Microwave technologies and methodologies, Power Electronics Control, Dynamical Systems and Simulation Models, Energy Systems.***

*Main application fields: **Fusion Science and Engineering, Nuclear Engineering, Industrial I&C Systems, Electronics and Automation.***

*The results of the research are published in **about 75 papers** in journals and conferences, and more than **50 technical reports** in national and international projects. He is also editor of a book on the history of Energy edited by the Italian Encyclopaedia Treccani in 2013.*

#### INTERNATIONAL ROLES

**Member, American Society for Mechanical Engineering (ASME)**, 2018-2019, 2021-2022.

**Member, IAEA Network of Excellence** for supporting the use of Instrumentation and Control Technologies (**NE-ICT**), 2014-2016.

**Italian delegate, OECD/NEA Human and Organizational Factors WP**, 2011-2016.

**Italian delegate, IAEA Technical Working Group on NPP I&C (TWG-NPPIC)**, 2012-2016.

**Italian delegate, OECD/NEA Halden Reactor Project** for the Man Technology Organization (and **substitute** at the Halden Board Management), 2011-2014.

**Italian delegate, IAEA Code of Conduct on Safety and Security of Radioactive Source**, 2010- 2012.

#### TEACHING AND TRAINING

**Contract Professor**, Sapienza University of Rome, Department of Energy Engineering, Course on Monitoring and Control of Energy Systems, 2021-2022.

**Contract Professor**, University of L'Aquila, Department of Information Engineering, Computer Science and Mathematics, Course (6 CFU) on Instrumentation for Control of Energy Systems: 2021-2022, 2022-2023.

**Contract Professor**, University of L'Aquila, Department of Information Engineering, Computer Science and Mathematics, Course (3 CFU) on Laboratory of Control Systems Technology and Engineering: 2016-2017, 2017-2018, 2018-2019, 2019-2020.

**Module Leader**, EU INSC, Training Module on "Electric and Instrumentation and Control Systems": 2013 (1<sup>st</sup> edition), 2014 (2<sup>nd</sup> edition); 2016 (4<sup>th</sup> edition), and "Regulatory Control of Nuclear Sites: Inspection on of I&C and electrical systems" (2016, 2017, 2022): more than 50 trainees from more than 20 countries.

**Training and Tutoring Leader**, EU INSC, Tutoring on "Digital I&C for nuclear applications" (2013-2015): 3-months tutoring with tutees from Armenia (1) and Indonesia (1); IAEA+ENSTTI, 3-months Tutoring on "Digital I&C and its applications in the nuclear field" (2017) with tutees from Algeria (1) and Pakistan (2).

**Lecturer**, DEVCO Training Module on "Electric and Instrumentation and Control Systems": 2013 (Rome), 2014 (Rome); 2016 (Paris; Rome); DEVCO Tutoring Module on "Digital I&C for nuclear applications" (2013-2015), "Regulatory Control of Nuclear Sites: Inspection on of I&C and electrical systems" (2016, 2017, 2022).

**Lecturer**, Seminars at the University of Perugia, University of Rome Sapienza, University of Calabria, University of Salento, University of L'Aquila, University of Rome Tor Vergata, CNR Tor Vergata, University of Aalborg (Denmark), Ordine degli Ingegneri della Provincia di Roma.

**ENEA Tutor**, *Master and PhD thesis* in collaboration with: University of Rome Sapienza, University of Rome 3, University of L'Aquila, Université Marseille-Aix (Francia): about 10 people.

**Contract Professor**, University of Rome Sapienza, Faculty of Philosophy, Course (6 CFU) on Fundamentals of Computer Science (2012-13), and Information Systems (2008-12).

**High School Teacher (non-tenure, then tenured)**, Two qualifications: (1) Electronics and Telecommunication, and (2) Computer Science, Italian Public School: 2005-10.

## LANGUAGES

**Italian:** native; **English:** fluent; **French:** fluent.