PERSONAL INFORMATION

Mauro Dalla Palma

WORK EXPERIENCE

Head of Research Group, Project Leader, Senior Engineer, Temporary Professor

Design, development, and procurement of experimental machines and diagnostic systems for controlled thermonuclear fusion

Jun 2010 - present — Researcher III level of national research contract of Italy
National Research Council of Italy, 7 piazzale Aldo Moro, 00185 Roma, Italy, www.cnr.it

Jan 2007 - May 2010 — Researcher 7th category of national engineering contract
Consorzio RFX, 4 corso Stati Uniti, 35127 Padova, Italy, www.igi.cnr.it

Sep 2004 - Dec 2006 — Project Collaboration Agreement
Consorzio RFX, 4 corso Stati Uniti, 35127 Padova, Italy, www.igi.cnr.it

Design, development, and manufacturing of composite structures and products

Sep 2001 - Aug 2004 — Researcher 7th category of national engineering contract
RIC srl, via Antonio Meucci, 3, 31050 Ponzano Veneto (TV), Italy, www.ric.it

Group Head - Formal assignments in Scientific Organisations

Apr 2018 - present — Head of the Research Group "Plasma Engineering" made of 19 researchers and engineers.
International research collaborations: ITER, F4E, CCFE, CEA, ENEA, EUROfusion, IPP, IRP, KIAE, KIT, NIFS

Feb 2008 - Dec 2019 — Coordinator and responsible of research activities produced by the "CCFE Neutral Beam Group" within the Bilateral Agreement for the cooperation between "Consorzio RFX" and "The United Kingdom Atomic Energy Authority", "Culham Centre for Fusion Energy".
Activities: design and construction of the beamline components for the ITER Neutral Beam Test Facility within contracts between Consorzio RFX and Fusion for Energy.

Apr 2014 - Apr 2018 — Head of the Design Office of Consorzio RFX with coordination of up to 10 resources, management of projects, and budget control.

Responsibility for Scientific Research and Coordination

Jan 2021 - present — Lead Engineer expert in the vacuum vessel design of EUROfusion WBS DIV.I.S.12, Vacuum Vessel Interfaces for DTT (about 4 ppy each year)

Jan 2021 - present — Responsible Officer of DTT WBS V-OVC, Vessel and Out of Vessel Components (about 9 ppy each year)

Nov 2017 - present — Responsibility for design and procurement of the first wall for RFX-mod2 experiment; design and realisation of the thermo-mechanical measurement system.

Jan 2015 - present — Responsibility for design, prototyping, and procurement of the thermo-mechanical measurement system for high heat flux components of ITER Neutral Beam Test Facility.

Jun 2007 - Dec 2019 — Responsibility for the scientific developments and coordination of projects in Research Groups (CCFE, KIT, IO) aimed to the design, R&D, and testing of the beamline components for the ITER neutral beam test facility.

Nov 2019 - Dec 2019 — Responsibility for commissioning and operation of actively cooled components and embedded diagnostics of LHD injectors.
Position: Proposer, user, and coordinator of the scientific project for Short Term Mobility, visiting scientist at the National Institute for Fusion Science (NIFS), Toki, Japan.

International Fellowships - Formal assignments in Scientific Organisations

Jan 2008 - Dec 2009 — Responsibility for studies about the neutral beam injectors for heating and current drive of the ITER plasma: designs, technologies, and tests.
Assigned with the biennial grant “EFDA Fusion Researcher Fellowship” for the career development of exceptional candidates working on the Euratom fusion programme.

Technical Expert - Formal assignments in Scientific Organisations

Dec 2019 - present — Technical Responsible Officer of contract F4E OMF-0795 for stage 2 (manufacturing) of the procurement of the beamline components for ITER NBTF.

Jul 2019 - Oct 2019 — External expert of Fusion for Energy for technical evaluation of tenderers to contract F4E OMF-0795 stage 2 "Procurement of the beamline components for ITER NBTF".
Responsibility assigned by F4E on 23/07/2019, ref. 2HE38G/1.0

Oct 2017 - Jan 2019 — Technical Responsible Officer of contract F4E OMF-0795 for stage 1 (prototyping) of the procurement of the beamline components for ITER NBTF.

Jan 2009 - Dec 2015 — Responsible in charge of the operation of the system thermal and mechanical instrumentation of the RFX-mod experiment.

Participation in Scientific Projects

Dec 2005 - Jul 2007 — Monitoring and verification of the scientific research and technological development carried out at the Kurchatov Institute of Atomic Energy (KIAE) of Moscow within the EU-RF Contract on the First ITER NB injector and the ITER NBTF.

Dec 2003 - Apr 2006 — The First ITER NB Injector and the ITER NB Test Facility: Progressing in the Design.

Scientific Honours and Awards

Mar 2008	Winner of the biennial grant “EFDA Fusion Researcher Fellowship” for the career development of exceptional candidates working on the Euratom fusion programme. Activity: Studies and researches about the neutral beam injectors for heating and current drive of the ITER plasma: designs, technologies, and tests.
May 2006	Winner of best paper award of nuclear session with oral presentation at the “2006 International ANSYS Conference”, Pittsburgh, PA, USA, May 2nd-4th, 2006. Title of the article: “Heat Transfer in Flow Boiling Conditions for Swirl Tube Elements Customizing the ANSYS Software”.

Teaching and Scientific Divulgation

Acad Yrs from 2018-2019 to 2019-2020	*Balance of Plant,* Thermal Power Exhausting in DEMO fusion reactor, Thermonuclear Fusion, Master in Electrical Energy Engineering, University of Padova
Acad Yrs from 2010-2011 to 2017-2018	*Plasma heating,* Thermonuclear Fusion, Master in Electrical Energy Engineering, University of Padova
Acad Yrs from 2008-2009 to 2014-2015	*Fusion Power Plant & Thermo-mechanical measurements,* Basic Engineering, PhD in Fusion Science and Engineering, Università di Padova, Max-Planck-Institut fur Plasmaphysik, Instituto Superior Técnico Universidade de Lisboa
Acad Yrs from 2005-2006 to 2014-2015	*Energy Technologies and Economics*, Master Post-Lauream in Energy Engineering, University of Padova
Acad Yr 2006-2007	*The first wall of fusion machines,* Plasmas and thermonuclear controlled fusion, Master in Electrical Engineering, University of Padova
Acad Yrs 2006-2007 2004-2005	*Mechanical design and analysis,* Post-doctoral Master in Plasma Physics and Engineering, University of Padova
Nov 2008 - Apr 2018	Organisation of scientific visits and educational events for controlled thermonuclear fusion

Mentor and supervisor of Postdoc engineers, PhD, Master, and Bachelor students

Acad Yr from 2002-2003 to 2019-2020	EUROfusion Engineering Grant engineers (3 years postdoc): 2 PhD students: 4 Master students: 5 Bachelor students: 7

Patents

Industrial application of the patents for the realisation of cooling junctions between dissimilar materials for coolant-vacuum barriers of the ITER NBTF Beam Source

2013-2015

Type: International
Title: Vacuum tight threaded junction
Authors: P. Agostinetti, M. Dalla Palma, D. Marcuzzi, P. Sonato, P. Zaccaria
Position: proposer, inventor
Application Number: IN2014MUMNP2362 2014-11-19
Patent Number: IN2362MUN2014 (A), 2015-08-14
Priority Numbers: WO2013IB54504 2013-05-31; ITPD20120186 2012-06-07

Realisations

Mar 2017 - present	Design & prototyping: electrically insulated and leak tight cross joints for vacuum vessels.
Apr 2011 - present	Design & construction: vacuum vessels & vacuum vessel (double) barriers for nuclear fusion facilities.
Mar 2012 - present	Design & prototyping: Feedthroughs for electrical power and signals vacuum compatible and with double barrier as safety important components of nuclear power plants to be installed in the ITER.
Jan 2013 - May 2021	Prototypes: Thermal and mechanical sensors compatible with vacuum and nuclear requirements of the heating neutral beam injectors of ITER. Position: Responsible of project, construction, and qualification tests Collaborators: 2 manufacturing companies, 5 resources Granting Organisation: Fusion for Energy, contract F4E_D_24SSFR
Nov 2008 - Aug 2016	Design, testing, and procurement: unidirectional carbon–carbon composite for infrared imaging diagnostic.
Jan 2013 - Dec 2014	Prototypes: Vacuum Tight Threaded Junction realising a junction between dissimilar materials and a barrier between vacuum and the carrier fluid, realised with innovative processes, welded and unwelded (VTTJ) Collaborators: 6 resources, workshops and service suppliers Granting Organisation: Fusion for Energy, contract F4E_D_24SSFR.
Jan 2012 - Dec 2013	Prototype: Thermal measurement system immune to electromagnetic interferences for radio frequency ion sources of neutral beam injectors.
Jan 2005 - Dec 2007	Software: Code for the simulation of heat transfer in two-phase subcooled boiling conditions in high heat flux components, customised executable of ANSYS finite element code.

Mobility

May - Jun, 2013 Mobility at ITER Organisation St Paul Lez Durance, France for “Technical and technological development for the procurement of the beamline components of MITICA, the ITER heating neutral beam test facility”. STM CNR 2013.

May - Jun, 2011 Mobility at ITER Organisation St Paul Lez Durance, France for “Technical and technological development for the procurement of the beamline components of MITICA, the ITER heating neutral beam test facility”. STM CNR 2011.

Nov - Dec, 2009 Mobility at NIFS Toki, Japan for “Commissioning and operation of actively cooled components and related thermal and calorimetric measurements”.

Sep 2009 Mobility at NIFS Toki, Japan for “Design, procurement and commissioning of actively cooled components and related thermal and calorimetric measurements”.

Sep 2001 - Aug 2004 **Researcher in Aerospace Engineering**

Design, development, and manufacturing of composite structures and products

Responsibility of Scientific Project

Sep 2001 - Dec 2003 Position: Project responsibility for the passive thermal adjusting supports of the paraboloid panels of the radiotelescope ALMA.
Title: ALMA - Atacama Large Millimeter/submillimeter Array, construction ESO-NRAO-NAOJ, www.almaobservatory.org
Supplier: Consorzio EIE-Alcatel Space.

Realisations, September 2001 - September 2004

Jan 2003 - Dec 2003 Prototype and product: Passive thermal adjusting supports of the paraboloid panels of the radiotelescope ALMA, Atacama Large Millimeter/submillimeter Array.

Jan 2004 - Jun 2004 Prototype and products: Composite endodontic posts certified as class IIa medical devices conform to the Directive 93/42/CEE.

Jun 2002 - Jun 2003 Prototypes: Morphological and thermo-mechanical characterization of fiber-reinforced composite products and characterisation of the compression moulding process by analysing the cure kinetic with DSC technique.

QUALIFICATION & PROF. LICENSE

Apr 2017 - Apr 2023 National Scientific Qualification, *Abilitazione Scientifica Nazionale (ASN)*
Selection D.D. 1532/2016
Sector 09/C2, Energy, Heat Transfer, and Nuclear Engineering and Diagnostics.

Jul 2001 - present Registration with the Engineering Council since 04/03/2002
N. 5357-A, sectors: Environment Civil, Industrial, and Information Technology, Padova.

EDUCATION

2004 - 2006 **PhD in Energetics**

PhD, ISCED level 8, advanced research qualification

Università degli Studi di Padova, via 8 Febbraio 1848, 2, 35122 Padova, Italy, www.unipd.it

Title of thesis: Multiaxial fatigue design criteria for high heat flux components actively cooled in nucleate boiling conditions

1994 - 2000 **Mechanical Engineer MEng level (mark 110/110)**

Master degree, ISCED level 7, second tertiary degree qualification

Università degli Studi di Padova, via 8 Febbraio 1848, 2, 35122 Padova, Italy, www.unipd.it

Title of thesis: Design and optimisation of new tethered structures as a function of hypervelocity particle impacts and of space environment conditions; realisation and experimental verification

LANGUAGE SKILLS

Mather tongue Italian

	UNDESTANDING		SPEAKING		WRITING
Other language	Listening	Reading	Spoken interaction	Spoken production	
English	C2 proficient	C2 proficient	C2 proficient	C2 proficient	C2 proficient

PARTICIPATIONS IN CONFERENCES

Sep 2020	31st Symposium on Fusion Technology (SOFT), 20-25 September 2020, virtual edition
Sep 2019	14th International Symposium on Fusion Engineering Technology (ISFNT), 22-27 September 2019, Budapest, Hungary
Aug 2019	5th Central and Eastern European Committee for Thermal Analysis and Calorimetry (CEEC-TAC), 27-30 Aug 2019, Roma, Italy
Apr 2018	22nd High Temperature Plasma Diagnostics (HTPD), 15-19 April 2018, San Diego, CA, USA
Sep 2017	13th International Symposium on Fusion Nuclear Technology (ISFNT), 25-29 Sep 2017, Kyoto, Japan
Aug 2017	4th Central and Eastern European Committee for Thermal Analysis and Calorimetry (CEEC-TAC), 28-31 Aug 2017, Chisinau, Moldova
Sep 2016	22° Convegno Associazione Italiana Proprietà Termofisiche (AIPT), 23 Sep 2016, Reggio Emilia, Italy
Jun 2016	21st Topical Conference on High-Temperature Plasma Diagnostics (HTPD), 5-9 Jun 2016, Madison, WI, USA
Sep 2015	12th International Symposium on Fusion Nuclear Technology (ISFNT), 14-18 Sep 2015, Jeju Island, South Korea
May 2015	8° Giornate Nazionali di Saldatura (GNS), 28-29 May 2015, Genova, Italy
Sep 2014	28th Symposium on Fusion Technology (SOFT), 29 Sep - 3 Oct 2014, San Sebastian, Spain
Jun 2013	25th Symposium on Fusion Engineering (SOFE), 10-14 Jun 2013, San Francisco, CA, USA
Sep 2012	27th Symposium On Fusion Technology (SOFT), 24-28 Sep 2012, Liege, Belgium
Oct 2011	15th International Conference on Fusion Reactor Materials (ICFRM), 16-22 Oct 2011, Charleston, South Carolina, USA
Sep 2010	26th Symposium of Fusion Technology (SOFT), 27 Sep - 1 Oct 2010, Porto, Portugal
Apr 2010	14th Workshop of the IEA Implementing Agreement on RFP Research, 26-28 Apr 2010, Padova, Italy
Oct 2009	9th International Symposium on Fusion Nuclear Technology, 11-16 Oct 2009, Dalian. China
Sep 2009	14th International Conference on Fusion Reactor Materials (ICFRM), 6-11 Sep 2009, Sapporo, Japan
Sep 2008	7th International Conference on Fatigue Damage of Structural Materials, Hyannis, Massachusetts, USA, 14-19 September 2008
Sep 2008	5th European ThermalScience Conference, Eurotherm 2008, 18-22 May 2008, Eindoven, the Netherlands
Dec 2007	13th International Conference on Fusion Reactor Materials, 10-14 Dec 2007, Nice France
May 2007	Co-ordinating Committee on Neutral Beams, 22-24 May 2007, Culham, UK
May 2006	2006 International ANSYS Conference, 2-4 May 2006, Pittsburgh, Pennsylvania, USA
Sep 2005	21st IEEE/NPSS Symposium on Fusion Engineering (SOFE), 26-29 Sep 2005, Knoxville, TN, USA
Jun 2003	6th Experimental Technique and Design in Composite Materials (ETDCM), 18-20 Jun 2003, Vicenza, Italy

PERSONAL DATA PROTECTION

I authorise the use of my personal data in compliance with Legislative Decree 196/2003 “Personal Data Protection Code” and its succeeding modifications, as well as European Parliament and Council Directive 95/46/EC and related amending acts.