

DOMENICO MARZULLO

Associate Professor of Engineering Drawings and Design Methods for Industrial Engineering

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1. CURRENT POSITION

02/03/2020 – present

Associate Professor of Engineering Drawings and Design Methods for Industrial Engineering

Department of Engineering and Architecture (DIA), University of Trieste

Sector: IIND-03/B – Machine Design

Institutional roles & responsibilities

- **Chair of the B.Sc. Programme in Industrial Engineering – University of Trieste (2021 – present)**
- **Director's Delegate for Teaching and Student Guidance, DIA (April 2026 – present)**
- **Chair, Admission Committee for the PhD Programme in Industrial and Information Engineering (2023 – present)**
- **Rector's Delegate in the Members' Assembly of the CREATE Consortium (2022 – present)**

International appointment

Divertor System Design Lead, EUROfusion Design Central Team (2021 – present)

Coordination of the EU-DEMO divertor design activities across ~18 European Research Units.

Research group leadership

Head, CREATE–UNITS Research Group (2020 – present)

The group focuses on mechanical design, systems engineering, maintenance analysis and optimisation of in-vessel components for ITER, DTT and DEMO tokamak reactors, in collaboration with ENEA, EUROfusion and DTT Scarl.

Head, 3D Lab – DIA (2020 – present)

Advanced design methodologies, Virtual Reality, Digital Twin and Reverse Engineering for industrial and nuclear fusion engineering applications.

2. PREVIOUS POSITIONS

05/2019 – 03/2020

Temporary Research Fellow

Department of Industrial Engineering, Università degli Studi di Napoli Federico II

PON ARS01_00297 "PROSIB – PROpulsione e Sistemi Ibridi per velivoli ad ala fissa e rotante". Systems Engineering, CAD design and FEA methods applied to hybrid propulsion systems.

03/2016 – 02/2019

EUROfusion Engineering Grant – Principal Investigator and Researcher

CREATE Consortium, Naples (Italy)

Project: "Design and analysis of advanced divertor configurations". Multi-physics integration, CAD (CATIA V5), thermo-mechanical and structural analyses (RCC-MRx, Eurocodes, ASME). Visiting Researcher: Max Planck Institut für Plasmaphysik, Garching (10/2015–04/2016); EPFL Swiss Plasma Centre, Lausanne (06–09/2017).

12/2013 – 12/2015

Researcher

CREATE Consortium, Naples (Italy)

ITER Diagnostics (F4E-FPA-327, SG01–SG06); EUROfusion WPDIV; WPRM.

03/2013 – 09/2013

Erasmus Placement – Trainee Researcher

VTT Technical Research Centre of Finland, Tampere (Finland)

Design and development of Remote Handling tools for the DEMO divertor.

3. PRIZES AND AWARDS

2026

EUROfusion Engineering Grant – Mentor

Project: “Integrated Multiphysics Reconstruction for Structural Condition Monitoring in Fusion Devices”, awarded to Dr. Enrico Occhiuto. Total funding: € 220,000.

2026

Italian PhD Nuclear Talent Award 2026 – Co-supervisor

Awarded to the PhD thesis of Francesca Lanzotti: “Systems Engineering, Virtual Fitting and Digital Twin in the design for assembly of tokamak machines” (XXXVII cycle).

2016

EUROfusion Engineering Grant – Principal Investigator

Project: “Design and Analysis of Advanced Divertor Configurations”. Euratom Research and Training Programme 2014–2018.

4. RESEARCH ACTIVITIES AND INTERNATIONAL ROLES

EUROfusion (current roles)

- **Divertor System Design Lead, EUROfusion Design Central Team (2021 – present; see Sec. 1)**
- **Principal Investigator – “Digital Twin platform for integrated design of tokamak components” (EURATOM/EUROfusion, 2025–present)**
 - 5 European Research Units; 66 PM total; 47 PM at CREATE-UNITS.
- **Task Coordinator – WPRM: Remote Maintenance, Design and Validation of Divertor Fixation System (2023 – present; 7 RUs, ~90 PM)**
- **Task Coordinator and Deputy Project Leader – WPDIV: Divertor Design and Integration (2020–present; 120 PM/year total, average 30 PM/Year at CREATE-UNITS)**
- **Deliverable Owner – DIV-DEMO Cassette/Target Fixation Systems; VNS Divertor RH Procedures; PSDD.INT.MECH (2025–2026)**

ITER / F4E

- **Coordinator, Mechanical Design of ITER Diagnostics: RNC and RGRS – F4E-FPA-327 (2014–2025; 93 PM; € 280,000 at UNITS; 5 RUs)**
- Scientific Coordinator, NIER Ingegneria / F4E-OMF-1308 – WCLL TBS Ancillary Systems (2021–2025)
- Scientific Coordinator, F4E-OMF-1091 Task 4 – Maintenance Plan of ITER TBS (2026–present)
- CAD Officer – F4E-OMF-1091-01: WCLL TBM Ancillary Systems detailed design (2021–present)

DTT

- **Responsible, Mechanical Design of DTT Divertor Cassette Body and Fixation System for ENEA/DTT Scarl, relative call for tender (2020–present; 50 PM; tender budget: 8 M€)**
- Deputy Lead Engineer, DTT Divertor System – CAD Modelling and Structural Analysis (2015–present)
- Task Coordinator – EUROfusion WPDIT1-ADC: Alternative Divertor Configurations (2015–2021)

National projects

- **Substitute PI and Coordinator of Research Unit – PRIN 2022-2022JCZJ33 (2023–2025; 4 PM; MUR)**
- Project Evaluator – Umbria Region POR-FESR 2014–2020, Action 1.1.1

International network

Active collaborations with: ITER Organization (Cadarache); EUROfusion PMU (Garching); Fusion for Energy – F4E (Barcelona); ENEA Frascati; DTT Scarl; EPFL Swiss Plasma Centre; Max Planck Institut für Plasmaphysik – IPP; UKAEA (Culham); Westinghouse Electric Italy (Monfalcone); NIER Ingegneria (Bologna).

5. TEACHING ACTIVITIES AND PHD SUPERVISION

Teaching (current)

- Machine Design (B.Sc. in Industrial Engineering)
- Integrated Mechanical Design CAD/CAE; Solid Modelling; Wind Energy and Fundamentals of Nuclear Energy (M.Sc.)
- Systems Engineering: Design Processes and Methods (PhD Programme)
- **Erasmus exchange coordinator** with Politechnika Krakowska (Kraków, Poland)
- **Supervisor of 50+ B.Sc. and M.Sc. theses** on tokamak engineering design and systems engineering.

Selected indicators from the institutional teaching evaluation survey (ANVUR questionnaire):

Indicator (ANVUR)	Machine Design (B.Sc.)		Integrated Mech. Design CAD/CAE (M.Sc.)	
	2023/24	2024/25	2023/24	2024/25
D6 – Stimulates interest in the subject	7.97	7.86	9.45	9.40
D7 – Clarity of exposition	7.98	7.75	8.36	9.60
D10 – Availability for consultation	8.65	9.09	9.15	9.81
D12 – Overall satisfaction	7.75	7.68	8.45	9.20

PhD supervision – Supervisor

- *Ugo Bonavolontà* – PhD in Industrial and Information Engineering at UNITS *Design Optimisation of ITER Auxiliary Systems Water-Cooled Lithium-Lead TBM* (XXXVII cycle)
- *Enrico Occhiuto* – PhD in Industrial and Information Engineering at UNITS *Engineering Design of the ITER Radial Neutron Camera: LAISE tool applied to Ex-Port RNC* (XXXVIII cycle; **co-funded ENEA**)
- *Nicola Massanova* – PhD in Industrial and Information Engineering at UNITS *Design Framework for Multiphysics Integration of DTT Divertor* (XXXVIII cycle)
- *Daniele Valente* – PhD in Industrial and Information Engineering at UNITS *Multi-physics framework for integrated design of nuclear fusion reactor components* (XL cycle)
- *Andrea Clagnan* – PhD in Industrial and Information Engineering at UNITS *Systems Engineering approach for advanced divertor configurations* (XL cycle)

PhD supervision – Co-Supervisor

- Francesca Lanzotti – Systems Engineering, Virtual Fitting and Digital Twin in design for assembly of tokamak machines (XXXVII cycle) – Italian PhD Nuclear Talent Award 2026

PhD committee & governance

Member, Board of the PhD Programme in Industrial and Information Engineering (2020– present).
Chair, Admission Committee for the PhD Programme in Industrial and Information Engineering (2023 – present).

6. EDITORIAL ACTIVITY AND SCIENTIFIC DISSEMINATION

Editorial role

Guest Editor – Special Issue “Design Methods for Mobility”, Lecture Notes in Mechanical Engineering – ADM 2024, Palermo, September 2024. Springer Nature Switzerland.

Peer review	Regular reviewer for: Fusion Engineering and Design (Elsevier); Nuclear Fusion (IOP); International Journal on Interactive Design and Manufacturing (Springer). Since 2014.
Public engagement	– Organiser, public outreach event on nuclear fusion, Trieste Next 2025: <i>Energia dal Futuro. La Sfida della Fusione Nucleare</i> (EUROfusion Programme Manager, Westinghouse Electric Italy and DTT participated). – Official Italian MAECI Representative at the IAEA Technical Meeting on Divertor Concepts: Vienna 2019, 2022, 2025.
Memberships	Ordinary Member – Italian Association of Machine Design (ADM).

7. Selected FUNDED PROJECTS (complementary to the research activities presented in sec. 4)

2026 – present	Digital Twin platform for integrated design of tokamak components (EUROfusion) EURATOM/EUROfusion – 47 PM (UNITS) – PI
2026 – present	Divertor System Design Lead – DES-PM.TF.DIV (EUROfusion) EURATOM/EUROfusion – 4 PM – PI (role held since 2021, see Sec. 1)
2026 – present	F4E-OMF-1091 Task 4: Maintenance Plan of ITER TBS F4E / NIER Ingegneria – Scientific Coordinator
2026	Cassette and Target Fixation Systems; VNS Divertor RH; PSDD.INT.MECH (EUROfusion) EURATOM/EUROfusion – 4+6+4 PM – Deliverable Owner
2025 – present	Digital Twin platform – Pilot Project on EU DEMO Divertor EURATOM/EUROfusion – 19 PM – PI
2025	AWP25 VNS Divertor Fixation System Prototype; Divertor Lead Engineer EURATOM/EUROfusion – 3+8 PM – Deliverable Owner / PI
2024 – 2025	WCLL TBM SET Design – F4E-OMF-1308 Task Order 1 F4E / NIER Ingegneria – Scientific Coordinator
2023 – 2025	PRIN 2022-2022JCZJ33: Advanced control techniques for alternative divertor plasma configurations MUR – 4 PM – Substitute PI
2023-2026	Divertor AM Mock-ups (EUROfusion) EURATOM/EUROfusion – 12 PM/year – Task Coordinator
2020 – present	DTT Divertor Cassette Body – Mechanical Design and Tender DTT Scarl / ENEA – 50 PM – Tender budget: € 8 M – Task Coordinator
2014 – 2025	ITER Diagnostics – RNC and RGRS (F4E-FPA-327) Fusion for Energy (F4E) – 93 PM – € 280,000 – Task Coordinator
2020 – present	WPDIV: Divertor Design and Integration; WPRM: Remote Maintenance (EUROfusion) EURATOM/EUROfusion – 120+30 PM – Task Coordinator / Deputy PL

8. PUBLICATIONS

Bibliometric indicators
(Scopus, Sept. 2026)86
Documents1,219
Citations20
h-index

Journal articles 2026

- Clagnan, A., **Marzullo, D.**, Imbriani, V., Lanzotti, F. G., Mazzone, G., Vitolo, F., You, J. H. (2026). Divertor system for EU-DEMO: CAD design progress in the low aspect ratio configuration. *Fusion Engineering and Design*, 227, 115704.
- **Marzullo, D.**, Clagnan, A., Belardi, V. G., Cardella, A., Imbriani, V., Mazzone, G., You, J. H. (2026). Design progress of EU DEMO divertor cassette. *Nuclear Materials and Energy*, 46, 102057. doi: 10.1016/j.nme.2025.102057

2025

- Bachmann, C., Siccino, M., et al. incl. **Marzullo, D.** (2025). Engineering concept of the VNS – a beam-driven tokamak for component testing. *Fusion Engineering and Design*, 211, 114796. [11 citations]
- Massanova, N., Valente, D., Degrassi, G., Poloni, C., Vinoni, P., Roccella, S., **Marzullo, D.** (2025). Parametric design optimization of DTT divertor cassette using SPDM. *Fusion Engineering and Design*, 217, 115117.
- Occhiuto, E., **Marzullo, D.**, Dongiovanni, D. N., Bonavolontà, U., Malaroda, F., Marocco, D., Esposito, B. (2025). Maintenance plan of the ITER Radial Neutron Camera: Verification and validation by VR simulation. *Fusion Engineering and Design*, 215, 114980.
- Boscary, J., Vinoni, P., **Marzullo, D.**, Quartararo, A., Cufar, A., Renard, S., et al. (2025). Divertor conceptual design of the European Volumetric Neutron Source. *Fusion Engineering and Design*, 212, 114861.
- Lanzotti, F. G., Pompa, E., Picci, G., Bue, A. L., Di Gironimo, G., **Marzullo, D.**, D'Amico, G. (2025). As-built based method for virtual alignment and assembly of the ITER tokamak. *Fusion Engineering and Design*, 221, 115392.
- Caprini, D., Angelucci, M., Martelli, E., Crescenzi, F., Giorgetti, F., Massanova, N., **Marzullo, D.**, et al. (2025). Hydraulic analysis of the DTT divertor module. *Fusion Engineering and Design*, 219, 115234.

2024

- Romanelli, F., et al. incl. **Marzullo, D.** (2024). Divertor Tokamak Test facility project: status of design and implementation. *Nuclear Fusion*, 64, 112015. doi: 10.1088/1741-4326/ad5740 [73 citations]
- **Marzullo, D.**, Occhiuto, E., Brolatti, G., Falco, D., Laghi, D., Marocco, D., Esposito, B. (2024). Mechanical design of ITER radial neutron camera Ex-Port system. *Fusion Engineering and Design*, 203, 114477.
- **Marzullo, D.**, Spagnuolo, G. A., Aiello, G., Boscary, J., Graziosi, G., Moscato, I., Quartararo, A., You, J. H. (2024). Selection of EU-DEMO divertor operating conditions: water cooling thermal-hydraulic parameters and power exhaust capabilities. *Fusion Engineering and Design*, 203, 114467.
- **Marzullo, D.**, Massanova, N., Giorgetti, F., Riccardi, B., De Sano, G., Roccella, S. (2024). Design progress of DTT divertor fixation system. *Fusion Engineering and Design*, 203, 114429.
- Moro, F., Marocco, D., Belli, F., Bocian, D., Brolatti, G., Cesaroni, S., et al. incl. **Marzullo, D.** (2024). Nuclear analyses in support of ITER ex-port Radial Neutron Camera design. *Fusion Engineering and Design*, 202, 114295.
- Bonavolontà, U., Ferrer, C. O., La Rovere, S., **Marzullo, D.** (2024). Maintenance study on WCLL-TBS ancillary systems in process room. *Fusion Engineering and Design*, 201, 114223.
- Cesaroni, S., Marocco, D., **Marzullo, D.**, Moro, F., Belli, F., Brolatti, G., et al. (2024). Design of a position monitoring system for the ITER radial neutron camera. *Fusion Engineering and Design*, 203, 114439.
- Dongiovanni, D. N., Belli, F., Brolatti, G., Centioli, C., Cesaroni, S., Esposito, B., **Marzullo, D.**, et al. (2024). RAMI analysis of ITER diagnostic radial neutron camera. *Fusion Engineering and Design*, 200, 114209.

2023

- Lanzotti, F. G., Di Gironimo, G., Korzeniewska, J., Imbriani, V., Mazzone, G., You, J. H., **Marzullo, D.** (2023). Systems engineering procedure for requirements management of divertor system of tokamak reactors. *Fusion Engineering and Design*, 194, 113917.
- Moro, F., Marocco, D., Belli, F., et al. incl. **Marzullo, D.** (2023). Nuclear design of a shielded cabinet for electronics: The ITER radial neutron camera case study. *Fusion Engineering and Design*, 191, 113542.

2022

- You, J. H., et al. incl. **Marzullo, D.** (2022). Divertor of the European DEMO: Engineering and technologies for power exhaust. *Fusion Engineering and Design*, 175, 113010. [131 citations]
- Esposito, B., Marocco, D., Gandolfo, G., et al. incl. **Marzullo, D.** (2022). Progress of Design and Development for the ITER Radial Neutron Camera. *Journal of Fusion Energy*, 41, 22. doi: 10.1007/s10894-022-00333-9 [21 citations]
- Moro, F., Marocco, D., Belli, F., et al. incl. **Marzullo, D.** (2022). Nuclear Analyses for the Assessment of the Loads on the ITER Radial Neutron Camera In-Port System. *IEEE Transactions on Plasma Science*, 50, 4150–4156.

2021

- Centioli, C., Crescenzi, F., **Marzullo, D.**, Kantor, R., Brolatti, G., et al. (2021). Interface Definition and Integration in the Equatorial Port 01 of the ITER In-Port Radial Neutron Camera. *Fusion Engineering and Design*, 172, 112749.
- Militello, F., et al. incl. **Marzullo, D.** (2021). Preliminary analysis of alternative divertors for DEMO. *Nuclear Materials and Energy*, 26, 100908. [39 citations]
- Renno, F., Barbato, F., Barbarino, G., **Marzullo, D.**, Guida, R., Papa, S. (2021). Systems Engineering approach for the concept design of the Crystal Eye detector. *International Journal on Interactive Design and Manufacturing*, 15(1), 81–84.

2020

- **Marzullo, D.**, Ambrosino, R., Castaldo, A., Di Gironimo, G., Merriman, S. (2020). Preliminary engineering assessment of alternative magnetic divertor configurations for EU-DEMO. *Fusion Engineering and Design*, 158, 111756.
- Reimerdes, H., et al. incl. **Marzullo, D.** (2020). Assessment of alternative divertor configurations as an exhaust solution for DEMO. *Nuclear Fusion*, 60(6), 066030. [67 citations]
- Mazzone, G., You, J. H., et al. incl. **Marzullo, D.** (2020). EUROfusion-DEMO Divertor – Cassette Design and Integration. *Fusion Engineering and Design*, 157, 111656. [47 citations]
- You, J. H., Villari, R., Flammini, D., **Marzullo, D.**, Mazzone, G. (2020). Nuclear loads and shielding performance of EU DEMO divertor. *Nuclear Materials and Energy*, 23, 100745. [20 citations]
- Bonavolontà, U., et al. incl. **Marzullo, D.** (2020). EU-DEMO divertor: Cassette design and PFCs integration at pre-conceptual stage. *Fusion Engineering and Design*, 159, 111784.
- Mozzillo, R., Bachmann, C., Aiello, G., **Marzullo, D.** (2020). Design of the European DEMO vacuum vessel inboard wall. *Fusion Engineering and Design*, 160, 111967.
- Imbriani, V., Bonavolontà, U., Di Gironimo, G., et al. incl. **Marzullo, D.** (2020). Insulated fixation system of plasma facing components to the divertor cassette in EUROfusion-DEMO. *Fusion Engineering and Design*, 158, 111710.
- Čufar, A., Bachmann, C., Eade, T., et al. incl. **Marzullo, D.** (2020). Shielding concept and neutronic assessment of the DEMO lower remote handling and pumping ports. *Fusion Engineering and Design*, 157, 111615.

2019

- **Marzullo, D.**, Bachmann, C., Coccoresse, D., Di Gironimo, G., Frosi, P., Mazzone, G., You, J. H. (2019). Progress in the pre-conceptual CAD engineering of European DEMO divertor cassette. *Fusion Engineering and Design*, 146, 942–945. [30 citations]
- Vaccaro, D., Elaian, H., Reimerdes, H., **Marzullo, D.**, et al. (2019). Thermal, electromagnetic and structural analysis of gas baffles for the TCV divertor upgrade. *Fusion Engineering and Design*, 146, 1543–1547.
- Di Gironimo, G., **Marzullo, D.**, Mozzillo, R., Tarallo, A., Grazioso, S. (2019). The DTT device: Advances in conceptual design of vacuum vessel and cryostat structures. *Fusion Engineering and Design*, 146, 2483–2488.
- Mazzone, G., You, J. H., Cerri, V., Coccoresse, D., **Marzullo, D.**, et al. (2019). Structural verification and manufacturing procedures of the cooling system for DEMO divertor target. *Fusion Engineering and Design*, 146, 1610–1614.
- Frosi, P., Di Maio, P. A., **Marzullo, D.**, Mazzone, G., You, J. H. (2019). Further improvements in the structural analysis of DEMO Divertor Cassette body (RCC-MRx). *Fusion Engineering and Design*, 138, 119–124.

- Dongiovanni, D. N., Esposito, B., Marocco, D., **Marzullo, D.** (2018–2019). Design space exploration for architecture selection: Radial Neutron Camera nuclear fusion diagnostic case. *Fusion Engineering and Design*, 137, 378–389.

2017 – 2018

- You, J. H., Mazzone, G., **Marzullo, D.**, et al. (2017). Progress in the initial design activities for the European DEMO divertor: Subproject “Cassette”. *Fusion Engineering and Design*, 124, 364–370. [56 citations]
- **Marzullo, D.**, Bachmann, C., Coccoresse, D., Di Gironimo, G., Mazzone, G., You, J. H. (2017). Systems engineering approach for pre-conceptual design of DEMO divertor cassette. *Fusion Engineering and Design*, 124, 649–654. [30 citations]
- Mazzone, G., Aktaa, J., Bachmann, C., **Marzullo, D.**, et al. (2017). Choice of a low operating temperature for the DEMO EUROFER97 divertor cassette. *Fusion Engineering and Design*, 124, 655–658. [44 citations]
- Cismondi, F., et al. incl. **Marzullo, D.** (2017). Progress in EU-DEMO in-vessel components integration. *Fusion Engineering and Design*, 124, 562–566. [23 citations]
- Frosi, P., Bachmann, C., Di Gironimo, G., Mazzone, G., **Marzullo, D.**, You, J. H. (2017). Structural analysis of DEMO divertor cassette body: design study based on RCC-MRx. *Fusion Engineering and Design*, 124, 628–632.
- Crisanti, F., Albanese, R., **Marzullo, D.**, et al. (2017). The DTT facility proposal: Physical requirements and reference design. *Nuclear Materials and Energy*, 12, 1330–1335. [22 citations]
- Maddaluno, G., **Marzullo, D.**, et al. (2017). The DTT device: Divertor solutions for alternative configurations including liquid metals. *Fusion Engineering and Design*, 122, 341–348. [15 citations]
- Di Gironimo, G., **Marzullo, D.**, Mozzillo, R., Tarallo, A., Villone, F. (2017). The DTT device: First wall, vessel and cryostat structures. *Fusion Engineering and Design*, 122, 333–340. [19 citations]
- Albanese, R., et al. incl. **Marzullo, D.** (2017). The DTT proposal: A tokamak facility to address exhaust challenges for DEMO. *Fusion Engineering and Design*, 122, 274–284. [46 citations]
- DTT: A divertor tokamak test facility for the study of the power exhaust issues in view of DEMO. *Nuclear Fusion*, 57, 016010. [52 citations]

2015 – 2016

- You, J. H., Mazzone, G., **Marzullo, D.**, et al. (2016). Conceptual design studies for the European DEMO divertor: Rationale and first results. *Fusion Engineering and Design*, 109–111, 1598–1603. [132 citations]
- Mozzillo, R., **Marzullo, D.**, Tarallo, A., Bachmann, C., Di Gironimo, G. (2016). Development of a master model concept for DEMO vacuum vessel. *Fusion Engineering and Design*, 112, 497–504. [27 citations]
- Mozzillo, R., Tarallo, A., **Marzullo, D.**, Bachmann, C., Di Gironimo, G., Mazzone, G. (2016). Preliminary structural assessment of DEMO vacuum vessel against a vertical displacement event. *Fusion Engineering and Design*, 112, 244–250.
- Meszaros, B., Shannon, M., **Marzullo, D.**, Woodley, C., Rowe, S., Di Gironimo, G. (2016). Configuration management of the EU DEMO conceptual design data. *Fusion Engineering and Design*, 109–111, 1619–1623.
- Di Gironimo, G., Lanzotti, A., **Marzullo, D.**, Esposito, G., Carfora, M., Siuko, M. (2015). Iterative and Participative Axiomatic Design Process in complex mechanical assemblies: case study on fusion engineering. *International Journal on Interactive Design and Manufacturing*, 9(4), 325–338. [27 citations]
- Di Gironimo, G., Carfora, D., Esposito, G., Lanzotti, A., **Marzullo, D.**, Siuko, M. (2015). Concept design of the DEMO divertor cassette-to-vacuum vessel locking system. *Fusion Engineering and Design*, 94, 72–81. [22 citations]
- Di Gironimo, G., **Marzullo, D.**, et al. (2015). Innovative design for FAST divertor compatible with remote handling, electromagnetic and mechanical analyses. *Fusion Engineering and Design*, 98–99, 1465–1469.

Conference papers (Scopus-indexed) 2026

- Vaglio, E., Valente, D., Massanova, N., Occhiuto, E., Parussini, L., Pizzignach, G., **Marzullo, D.**, et al. (2026). Study and Production of EU-DEMO Divertor Outboard Target Body Mock-up Using L-PBF. *Lecture Notes in Mechanical Engineering*, pp. 105–121. Springer.

2025

- Occhiuto, E., **Marzullo, D.**, et al. (2025). Virtual Reality in Systems Engineering: A Case Study in ITER RNC Maintenance Operations. *Lecture Notes in Mechanical Engineering*, pp. 338–346. Springer.

2024

- Massanova, N., Marzullo, D., et al. (2024). Systems Engineering and Multi-criteria Decision Making for Concept Design of DTT Divertor Fixation System. Lecture Notes in Mechanical Engineering, pp. 225–234.
- Bonavolontà, U., Marzullo, D., et al. (2024). Maintenance Procedure on WCLL Ancillary System – Virtual Reality Application. Lecture Notes in Mechanical Engineering, pp. 216–224.
- Clagnan, A., Marzullo, D., et al. (2024). RFLP Approach to DTT Divertor Fixation System Design Using the 3DExperience Platform. Lecture Notes in Mechanical Engineering, pp. 289–297.
- Lanzotti, F., Marzullo, D., et al. (2024). A Structured Methodology for New Product Development Combining QFD and MCDM. Lecture Notes in Mechanical Engineering, pp. 537–545.
- (2024). Fusion Energy: Towards Feasible Power Plant Designs. Lecture Notes in Mechanical Engineering, pp. 248–256.
- Massanova, N., Marzullo, D., et al. (2024). Multiphysics FEM Integration Issues – A Case Study in Nuclear Fusion Research. Lecture Notes in Mechanical Engineering, pp. 207–215.

2023

- (2023). Requirements Management in Master Model Development: A Case Study in Fusion Engineering. Lecture Notes in Mechanical Engineering, pp. 466–478. [1 citation]
- (2023). Experiences of Additive Manufacturing for Nuclear Fusion Applications: The Case of the Divertor Wishbone. Lecture Notes in Mechanical Engineering, pp. 1030–1041.

2022

- (2022). Requirements Engineering in Complex Systems Design. Lecture Notes in Mechanical Engineering, pp. 658–667. [4 citations]
- (2022). Virtual Prototyping and FEM Analysis of the Crystal Eye Detector. Lecture Notes in Mechanical Engineering, pp. 668–674.
- (2022). Design and Integration of Automation Systems with Manual Operation: Small and Medium Enterprises Issues. Lecture Notes in Mechanical Engineering, pp. 298–307. [5 citations]
- (2022). The Plastic Scintillator Detector of the HERD space mission. Proceedings of Science, 395, 54. [4 citations]
- (2022). FIT: the scintillating fiber tracker of the HERD space mission. Proceedings of Science, 395, 67. [5 citations]
- (2022). Design and expected performances of the large acceptance calorimeter for the HERD. Proceedings of Science, 395, 66. [3 citations]
- (2022). Gamma-ray performance study of the HERD payload. Proceedings of Science, 395, 651.
- (2022). The High Energy cosmic-Radiation Detector (HERD) Trigger System. Proceedings of Science, 395, 62.

2020

- Kantor, R., Młynarczyk, P., et al. incl. Marzullo, D. (2020). Thermo-hydraulic modeling of the ITER radial neutron camera. AIP Conference Proceedings, 2239, 020021.
- (2020). An augmented and interactive AID for occupational safety. 30th European Safety and Reliability Conference (ESREL), pp. 1787–1791.
- (2020). Iterative and Participative Axiomatic Design Process to Improve Conceptual Design of Large-Scale Engineering Systems. Lecture Notes in Mechanical Engineering, pp. 492–505.

2018

- Marzullo, D., Dongiovanni, D. N., You, J. H. (2018). Systems Engineering Approach for Pre-Conceptual Design of DEMO Divertor. International Conference on Nuclear Engineering (ICONE-26), ASME. doi: 10.1115/ICONE26-82421 [3 citations]
- Grazioso, S., Selvaggio, M., Marzullo, D., Di Gironimo, G., Gospodarczyk, M. (2017). ELIGERE: a fuzzy AHP distributed software platform for group decision making in engineering design. IEEE FUZZ-IEEE 2017. [17 citations]

2015

- Marzullo, D., Di Gironimo, G., Lanzotti, A., Mazzone, G., Mozzillo, R. (2015). Design Progress of the DEMO Divertor Locking System According to IPADeP Methodology. Procedia CIRP, 34, 56–63. [16 citations]

Book chapter

- Mazzone, G., You, J. H., Bromley, J., Imbriani, V., Marzullo, D., Quartararo, A., Vallone, E., Villari, R. (2024). Water-cooled divertor option and limitations. In: Fusion Energy Technology R and D Priorities, pp. 161–169. doi: 10.1016/B978-0-443-13629-0.00076-9

9. SELECTED CONFERENCE PRESENTATIONS

2025	– IAEA Technical Meeting on Divertor Concepts (5th ed.), Vienna, 28–31 Oct. 2025. “Comparative Overview of Divertor Cassette Design and Integration in EU-DEMO, VNS and DTT”. (Italian MAECI official representative)
2024	– ADM 2024 – Fourth International Conference on Design Tools and Methods in Industrial Engineering, Palermo, 11–13 Sept. 2024. Guest Editor of Conference Proceedings.
2023	– ISFNT-15, Las Palmas de Gran Canaria, Spain, 10–15 Sept. 2023. “Selection of EU-DEMO divertor operating conditions: design space and power exhaust capabilities”.
2022	– JCM-2022, Ischia, 1–3 June 2022. “Experiences of Additive Manufacturing for nuclear fusion applications: DEMO divertor wishbone”. – IAEA Technical Meeting on Divertor Concepts (4th ed.), Vienna, 2022. (Italian MAECI official representative)
2019	– ADM 2019 International Conference, Modena, 9–10 Sept. 2019. “Iterative and Participative Axiomatic Design process for large-scale engineering systems”.
2018	– 30th SOFT, Giardini Naxos, 16–21 Sept. 2018. Three contributed papers: DEMO divertor CAD; TCV gas baffles; DEMO OVT cooling system. – 26th ICONE, London, July 2018. “Systems Engineering Approach for Pre-Conceptual Design of DEMO Divertor”. – ISFNT-13, Kyoto, 2017. Structural analysis of DEMO divertor cassette body (RCC-MRx).
2017	– IEEE FUZZ-IEEE 2017, Naples. “ELIGERE: a Fuzzy AHP platform for group decision making in engineering design”. – Workshop on TCV Divertor Upgrade, EPFL Swiss Plasma Centre, Lausanne, Sept. 2017.
2016	– 29th SOFT, Prague, 5–9 Sept. 2016. Three contributed papers on DEMO EUROFER97 divertor, systems engineering for DEMO divertor, and DTT alternative configurations.
2019 / 2022 / 2025	– IAEA Technical Meetings on Divertor Concepts, Vienna. Designated Italian MAECI representative at all three editions.
2015	– ICAD 2015, Florence, 16–18 Sept. 2015. “Design Progress of the DEMO Divertor Locking System According to IPADeP Methodology”. – IAEA Fusion Energy Conference (FEC 2015), St. Petersburg. System Level Design of the ITER Radial Neutron Camera.

10. EDUCATION AND TRAINING

2014 – 2017	Ph.D. in Industrial Engineering Università degli Studi di Napoli Federico II, Naples (Italy)
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	Thesis: "IPADeP: A Systems Engineering Process for Conceptual Design of Tokamak Sub-Systems". Research within EUROfusion WPDIV, WPRM, WPPMI and F4E-FPA-327 programmes.
September 2014	Karlsruhe International School on Fusion Technologies Karlsruhe Institute of Technology (KIT), Karlsruhe (Germany)
2011 – 2013	M.Sc. in Mechanical Engineering for Design and Production Università degli Studi di Napoli Federico II, Naples (Italy) Thesis: "Systems Engineering Approach in DEMO Divertor Locking System Design". Grade: 110/110 cum laude.
2006 – 2011	B.Sc. in Mechanical Engineering Università degli Studi di Napoli Federico II, Naples (Italy) Thesis: "Progettazione di sistemi di afferraggio per prove di crack propagation su lamierati".
2003 – 2006	Liceo Scientifico Scuola Militare Teuliè, Milan (Italy)

11. TECHNICAL SKILLS

CAD / Modelling	CATIA V5 (advanced), SolidWorks, Solid Edge, AutoCAD.
FEA / Simulation	ANSYS (structural and thermal), Nastran/Patran; Scilab, MATLAB.
Languages	– Italian – native speaker – English – proficient (working language for all research, publications and international project activities; Cambridge FCE)

In compliance with the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize the recipient of this document to use and process my personal details for the purpose of recruiting and selecting staff and I confirm to be informed of my rights in accordance with art. 7 of the above-mentioned decree

27th May 2026