

PERSONAL INFORMATION **Onofrio Tudisco**

OCCUPATIONAL FIELD **Expert of tokamak diagnostics and operations**

WORK EXPERIENCE

Presently **Retired since 1/3/2024**

From April 2022 to March 2024 **Supporting DTT Diagnostic activities**

ENEA - Frascati

- Contributions to several WPDIV-DTT Calls on diagnostics (Interferometry, Reflectometry, ECE, Magnetics) and on Plasma Control System for Kinetics control (DTT 2022-ECH-PCS).

Business or sector R&D

From 2015 to March 2022 **Head of Magnetic Confinement Experiments Laboratory.**

ENEA - Frascati

- The laboratory includes FTU Tokamak and Protosphaera experiment and main plasma diagnostics.

Specific Activities and Competences

- To run FTU many contracts with external companies have been required, as for the hardware maintenances, liquid nitrogen supplies, continuous repairing of fault components, etc. . .
- Schedule the activities of a complex machine for the execution of the experimental program
- Coordinate of a large group of Technician and Researchers.
- Handle the closure of FTU
- Coordinate the FTU disassembling.
- Handle the public auction for the obsolete metallic components coming out from clearance of some buildings assigned to DTT.
- Complete the disassembling of former tokamak FT, and installation of the tokamak in a platform outside the FT hall.

Business or sector R&D

From 2011 to 2015 **Coordinator of FTU diagnostics**

ENEA - Frascati

- Coordinate FTU diagnostics group and give priority in the activity of the supporting technician team.
- During this period two main activities have been accomplished:
 - Project WP16-MST2-10 for the development of a multichannel reflectometer for new ICRF antenna on ASDEX Upgrade. (as Project Leader)
 - Construction and installation of the plasma front-end of new 3-straps ICRF antenna for ASDEX Upgrade. (as Coordinator of ENEA team)

Specific Activities and Competences

- Expand my competencies to majority of diagnostics present on FTU, and other Tokamaks
- Coordinate activities to provide efficient diagnostics for the experimental campaigns
- Develop and install a brand new reflectometer for ASDEX tokamak
- Collaboration with an international team for the realization of the 3-strap ICRH antenna of Asdex
- Get competences on special materials and their treatment for the Front end of ICRH antenna.

Business or sector R&D

From 2005 to 2011

Head of Infrared and Microwave Laboratory

ENEA – Frascati

- The Laboratory includes the following diagnostics
 - Electron Cyclotron Emission diagnostics (Michelson interferometer, Grating Polychromator and Radiometer)
 - 2 channels CO₂/Vis interferometer
 - Scanning CO₂/CO interferometer
 - Reflectometer
 - Refractometer
 - Magnetic coils.

[2009-2011] Responsible of Task 1.4 of F4E WP3.4-GRT on assessment of ITER magnetics diagnostics

Specific Activities and Competences

- Maintenance of standard diagnostics and development of new diagnostics techniques
- International collaborations for diagnostics development.
- Handle ITER deliverables for assessment of ITER magnetics

Business or sector R&D

From 1981 to 2005

Plasma Physics Researcher

ENEA - Frascati

- Experiences on several fields of plasma physics and diagnostics.
- Contribution to JET experimental program
 - [2007-2009] Location of magnetic islands from ECE for comparison with MSE and rotational data.
 - [2005] Conditioning CEATE-NL equilibrium code with Kinetic diagnostics
 - [2002] Scientific Coordinator of the experiment “ITB at high triangularity”
 - [1996] Effect of plasma triangularity on transport
 - [1986] KK3 diagnostics

Business or sector Replace with type of business or sector

EDUCATION AND TRAINING

From 1976 to 1980

Laurea in Fisica magna cum laude

Replace with EQF
(or other) level if
relevant

University of Pisa – Pisa, Italy

- Physics

From 1976 to 1980

Diploma di Licenza in Fisica

Replace with EQF
(or other) level if
relevant

Scuola Normale Superiore – Pisa, Italy

▪ Physics

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	good	Very good	good	good	good

ADDITIONAL INFORMATION

Relevant Publications

- O. Tudisco et al, "The Diagnostic System in the FTU", Fusion Science and Technology 45 (2004) 402
- O. Tudisco, "Broad Band Far Infrared Fabry-perot with variable Finesse", Int. J. of Infrared and Millimeter Waves, **9** (1988), 41
- O. Tudisco et al, "A Submillimeter Polychromator for Plasma Spectroscopy", Rev. Sci. Instrum. **67**, (1996) 3108
- O. Tudisco, "Grating low-pass Filters ", Infrared Phys. **33**, (1992), 373
- A.Canton, P. Innocente, O. Tudisco, "Two colours medium-infrared scanning interferometer for the Frascati tokamak upgrade fusion test device", Applied Optics 45(2006),9105-9114
- P Buratti, E Giovannozzi and O Tudisco, "Purely growing precursors and sawtooth trigger mechanisms", Plasma Phys. Control. Fusion, 45 (2003) L9–L16
- F. Alladio, F. Crisanti, A. Mancuso, P. Micozzi, O. Tudisco, K. H. Burrell, M. S. Chu, L. L. Lao, T. H. Osborne, R. Giannella, P. Lomas, D. O'Brien, V. Riccardo, and B. Schunke, "Correlation among geodesic curvature of the magnetic field lines, plasma rotation and improved confinement regimes in present tokamak experiments", Phys. Plasmas 6(1999),2472
- R. Albanese, G. Artaserse, M. Mattei, O. Tudisco, JET EFDA Contributors. (2007). "Plasma reconstruction in tokamaks with linearized approaches. International Journal of Applied Electromagnetics and Mechanics". vol. 26, Number 3-4, pp. 191-199 ISSN: 1383-5416.
- F Crisanti, P J Lomas, O Tudisco, A Becoulet, M Becoulet, L Bertalot, T Bolzonella, G Bracco, M De Benedetti, B Esposito, C Giroud, N C Hawkes, T C Hender, O N Jarvis, E Joffrin, D Pacella, V Riccardo, F Rimini, K D Zastrow and contributors to the EFDA-JET Workprogramme, "Role of the plasma shaping in ITB experiments on JET", Plasma Phys. Control. Fusion 45 (2003) 379–393
- E. Giovannozzi, S.V. Annibaldi, P. Buratti, D. Frigione, E. Lazzaro, L. Panaccione and O. Tudisco, "Magnetic island structures and their rotation after pellet injection in FTU", Nuclear Fusion, 44, (2004)226
- P. Buratti, P. Smeulders, F. Zonca, S.V. Annibaldi, M. De Benedetti, H. Kroegler, G. Regnoli, O. Tudisco and the FTU-team, "Observation of high-frequency waves during strong tearing mode activity in FTU plasmas without fast ions", Nuclear Fusion, 45, (2005)1446
- O. Tudisco, P. Buratti, L. Panaccione, FTU Team, S. Cirant, ECRH Team, "Sawtooth Studies on FTU with Auxiliary Heating", Bulletin of the American Physical Society, 42 (1997) 1858