

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