

Riccardo De Angelis - Curriculum

Born in _____, Italian
Degree in Physics, Università di Roma 1975
Thesis: Fourier spectroscopy in the visible spectral range for astrophysical use
Researcher at Istituto Gas Ionizzati di Padova (1976-1979)
Researcher at ENEA laboratories Frascati since 1979
Responsible for beam emission and passive spectroscopy diagnostic group Diagnostic coordinator for a Helicon plasma of interest for application in space CISAS laboratory Padova (2009)
Diagnostic coordinator on FTU tokamak (2000-2010)
Head of laboratory for inertial confinement ENEA- Frascati (2011-2015)

Research interests: Plasma physics, magnetic confinement of fusion relevant plasmas, plasma diagnostics, laser matter interaction and inertial confinement

Magnetic confinement:

Reversed Field Pinches

Experiments on Eta-Betal and EtaBetaII – Istituto Gas Ionizzati Padova
Diagnostic development, Thomson Scattering and Bolometry
Analysis of resistive instabilities

Tokamaks ASDEX (Germany) and JET (UK)

Spectroscopy Soft X e VUV
Study of impurity transport and heat diffusion by impurity injection (Laser Blow off)
Study of plasma current profiles by Motional Stark effect and analysis of the magnetic equilibrium and the localization of resonant instabilities

Tokamaks FT ed FTU

Study of hydrogen recycling and H_α emission
Impurity injection and impurity transport
Experimental spectroscopy in the visible and Vacuum Ultraviolet spectral ranges
Measurements of plasma Z_{eff} by visible Bremsstrahlung
Development and analysis of Video endoscopic systems for FTU plasmas
Development of a neutral injector for diagnostics of FTU plasmas
Motional Stark Effect (MSE) and Charge Exchange spectroscopy (CXRS)

Dust mobilization in ITER

Model experiment for dust mobilization

Helicon Plasma

Development of visible spectroscopy, interferometry, video analysis, interferometry

Laser produced plasmas:

Experimental studies on laser produced plasmas
Developments of optically coherent diagnostics
Simulations of plasma evolution with Particle in Cell codes

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Development of fast particle diagnostics
Experimental study of aneutronic fusion reactions $p\text{-}^{11}\text{B}$
Measurements on the interaction of a petawatt laser with clusters
Studies of pressure transmission on foams

Some publications:

R. Bartiromo, ..., R. De Angelis, et al. Nuclear Fusion **35** 1161 (1995)
Study of impurity retention in the scrape-off layer of the FTU tokamak

P.Arena, ..., R.De Angelis et al Plasma Science, IEEE Transactions on 33.3 (2005):
1106-1114.IEEE trans. on plasma science, vol. 33, no. 3, 2005
Real time monitoring of radiation instabilities in TOKAMAK machines via CNNs.

R. De Angelis, et al. Rev. Sci. Instrum. **75**, 4082 (2004); doi:10.1063/1.1789262
Analysis of images from videocameras in the Frascati Tokamak Upgrade tokamak

R. De Angelis, et al., Nucl. Instr. and Meth. A (2010), doi:10.1016/j.nima.2010.04.151
Determination of q Profiles in JET by Consistency of Motional Stark Effect and MHD Mode Localization

R. De Angelis et al., 23rd IAEA Fusion Conf. Daejeon, Korea, 2010
Determination of q profiles in JET by Consistency of MSE and MHD Mode Localization,

W. Bang,..., R. De Angelis et al. Phys. Rev. Lett. 111, 055002 –2013
Temperature Measurements of Fusion Plasmas Produced by Petawatt-Laser-Irradiated D2–He3 or CD4–He3 Clustering Gases

V. G. Petrov, ...,R. De Angelis et al.
Plasma Physics Reports, 2012, Vol. 38, No. 4, pp. 343–351

M. Barbui, ...R. De Angelis et al Journal of Physics: ConferenceSeries 420 (2013)
012060 doi:10.1088/1742-6596/420/1/012060
Study of the yield of D-D, D-3He fusion reactions produced by the interaction of intense ultrafast laser pulses with molecular clusters

M. Barbui, ...R. De Angelis et al Phys. Rev. Lett. 111, 082502 –2013
Measurement of the Plasma Astrophysical S Factor for the He3(d,p)He4 Reaction in Exploding Molecular Clusters

R. De Angelis et. al Physics of Plasmas 07/2015; 22(7):072701.
DOI:10.1063/1.4923435

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Laser-ablated loading of solid target through foams of overcritical density

S. Yu. Gus'kov ... R.De Angelis et al. Plasma Physics and Controlled Fusion
10/2015; 57:125004. DOI:10.1088/0741- 3335/57/12/125004

Absorption coefficient for nanosecond laser pulse in porous material

F. Consoli, R. De Angelis, et al., Scientific Reports 6, 27889, 2016,
DOI:10.1038/srep27889

*Time-resolved absolute measurements by electro-optic effect of giant electromagnetic
pulses due to laser-plasma interaction in nanosecond regime*

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