ROSALBA SAIJA

Full Professor in disciplinary-scientific area FIS/03 (Matter Physics) at the University of Messina, Department of Mathematics and Computer Science, Physics and Earth Science. She is currently professor of *Modern Physics* at Bachelor's Degree in Physics, *Quantum Physics* at Master's Degree in Phvsics and *Nano-optics* at PhD's school in Phvsics

WORK EXPERIENCE

NOVEMBER 2019 – PRESENT
WorkPackage Leader of ASI/INAF-SPACE Tweezers Project Messina

NOVEMBER 2019 – PRESENT
Member representative of the University of Messina in *Marie Curie Initial Training NetworK (ITN) "Active Matter: From Fundamental Science to Applications"*

AUGUST 2018 – PRESENT
Member of the *Abilitazione Scientifica Nazionale* Committee, SD 02/B2 – SSD FIS/03

OCTOBER 2018 – PRESENT
Coordinator of The Bachelor's and Master's degree course in Physics at the University of Messina

MARCH 2018 – PRESENT
Full Professor in disciplinary-scientific area FIS/03 (Matter Physics) at the University of Messina.

NOVEMBER 2011 - PRESENT
Associate Researcher at IPCF – CNR (Research National Council)

2014-2018
Local coordinator of Materials, Physical and Nanosciences COST Action MP1403 (Nanoscale Quantum Optics)

2011
Guest Editor JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER, Volume: 113 Issue: 18 Published: DEC 2012 ISSN: 0022-4073

26-30 SEPTEMBER 2011
Chair of Organization Committee of XIII International Conference on "Electromagnetic Light Scattering" (Taormina, Messina)

AUGUST 2011 – FEBRUARY 2018
Associate Professor in disciplinary-scientific area FIS/03 (Matter Physics) at the University of Messina

2007
Co-author of the second edition of "Scattering from Model Nonspherical Particles. Theory and applications to Environmental Physics" Monography, Springer-Verlag, Heidelberg,

2004-2010
ANVUR Referee for GEV 02

26-30 SEPTEMBER 2004

Chair of Organization Committee of the International Workshop on “Light, Dust and Chemical Evolution” (Gerace, Reggio Calabria)

25 March 2003
Member of Advisory and Program committee of International Workshop *Dust and molecules in the interstellar medium - Observations by microwave radio astronomical techniques* (Messina, 25 marzo 2003)

2003
Co-author of “Scattering from Model Nonspherical Particles. Theory and applications to Environmental Physics” Monography, Springer-Verlag, Heidelberg,

2001-2006
PI of research projects (1) "The Optical Properties of Aerosols. (Biological aerosols)", Department of Environment -U.S Army European Research Office, contract N622558-02-C-9040, (2002-2006)-(2) “Simulation of the Optical Properties of Atmospheric Aerosols in the Planetary Boundary Layer” Environmental Sciences Branch U.S Army European Research Office, Contract n. N68171-01-M-5907 (2001-2002)-(3) “Optical Properties of aerosol particles” con l’US Army Europen Research Office, contract n. DAJA45-84-C-0005 (1984)

1998-1999, 2000-2002, 2003-2005
Member of research project MIUR-PRIN ‘Effetti meccanici e biologici dell'interazione della radiazione con i grani del mezzo interstellare’, 2003-2005, ‘Polvere e Gas nello Spazio: connessioni e evoluzione’, 2000-2002, ‘Polvere e Molecole in ambiente astrofisico’, 1998-1999.
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March 1983 - July 2011
Senior researcher in disciplinary-scientific area FIS/03 (Matter Physics) at the University of Messina

QUALIFICATION

NOVEMBER 1980
4-YEARS DEGREE IN PHYSICS, UNIVERSITY OF MESSINA

RESEARCH ACTIVITY

The research activity is mainly focused on the theoretical study of light extinction processes due to the interaction with nano/micrometric particles and nanostructured systems. In the framework of classical electrodynamics and T-matrix approach, the opto-mechanical properties induced by the interaction radiation-matter are studied in depth. In this context, the developed original theoretical approach is applied to the study and comprehension of optical manipulation technologies.
The reseach activity also covers issues related to the study of interstellar dust in the context of astrophysical sciences. The research activity has contributed to advancement of scientific knowledge in the field of physics through the publication of more than 100 scientific papers, some of which appeared in high impact factor journals.
The theoretical approach is the subject of the volume "Scattering from Model Nonspherical Particles. Theory and applications to Environmental Physics ", Springer-Verlag, Heidelberg, appeared as first edition in 2003 and second in 2007. (https://sites.google.com/view/nano-opticsunime/home)