

PERSONAL INFORMATION

Roberto Marani

www.robetomarani.com

Nationality Italian

CURRENT POSITION

Scientific attaché at the Embassy of Italy in Mexico City

AIM

Facilitate and strengthen scientific collaborations between Italy and Mexico, fostering mutual exchange of knowledge and advancements in various scientific and technological fields

WORK EXPERIENCE

From February 12nd, 2024
(On going)

Scientific Attaché

Embassy of Italy in Mexico City

Paseo de las Palmas 1994, Lomas de Chapultepec, 11000 Miguel Hidalgo, CDMX
ambcittadelmessico.esteri.it

From January 1st, 2023
To February 11st, 2024

Senior Researcher

National Research Council of Italy (CNR)

Institute of Intelligent Industrial Technologies and Systems for Advanced Manufacturing (STIIMA)

Via Amendola 122DO, 70126, Bari, Italia

stiima.cnr.it

From May 5th, 2014
To December 31st., 2022

Researcher

National Research Council of Italy (CNR)

Institute of Intelligent Industrial Technologies and Systems for Advanced Manufacturing (STIIMA)

Via Amendola 122DO, 70126, Bari, Italia

stiima.cnr.it

(till 05/07/2018 at the Institute of Studies on Intelligent Systems for Automation (ISSIA), Via Amendola 122 D/O, 70126, Bari, Italia)

From May 1st, 2012
To April 30th, 2014

Research Fellow

National Research Council of Italy (CNR)

Institute of Studies on Intelligent Systems for Automation (ISSIA)

Via Amendola 122 D/O, 70126, Bari, Italia
 issia.cnr.it

EDUCATION AND TRAINING

From January 2009
 To December 2011

Philosophiae Doctor (Ph.D.) in Information Engineering

Polytechnic University of Bari
 Department of Electrical and Information Engineering
 Via E. Orabona, 4, 70125, Bari, Italia
 poliba.it
 Achieved on 13/04/2012 (3-years-activity)
 Thesis title: Localization and Amplification of Light in Periodic Systems
 Supervisors: Prof. V. Petruzzelli, Prof. F.J. García Vidal

From September 2006
 To October 2008

Master Degree in Electronic Engineering

Polytechnic University of Bari
 Department of Electrical and Information Engineering
 Via E. Orabona, 4, 70125, Bari, Italia
 poliba.it
 Achieved on 08/10/2008 (mark: 110/110 cum laude)

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Inglese	C1	C1	C1	C1	C1
Spagnolo	C1	C1	C1	C1	C1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user

Common European Framework of Reference for Languages

Job-related skills

Professional skills can be grouped into the following topics:

- Automatic processing of thermal images for structural defects detection in composite materials (glass fibers and carbon fibers);
- Analysis of indoor environments returned by range sensors for the realization of 3D maps to look for possible changes affecting the scenes;
- Analysis of outdoor unstructured environments for precision farming;
- Development of complex setups for automatic three-dimensional reconstruction of micro-targets with size lower than one millimeter;
- Development of novel algorithms for scene flow computation used RGB-D data;

- Design and prototyping of novel systems for monitoring production processes and for the quality control of manufactured goods;
- Modeling and design of reliable techniques for robot localization in structured environments;
- Image processing for:
 - Understanding complex environments, in the field precision agriculture;
 - Estimation of products available on shelves in smart retail systems;
 - Fast and accurate detection of archeological embedded traces.
- Real-time video processing for indoor surveillance;
- Video processing aimed at people monitoring with neurodegenerative diseases targeted to the automated estimation of the development of the disease;
- Study of gain dynamics in active media made of dye molecule in epoxy for lasing applications and optical amplification of surface plasmons;
- Analysis and design of metal systems exhibiting a plasmonic bandgap (Plasmonic Crystals, PICs) for sensing, photovoltaics, and optical interconnections;
- Definition of a tridimensional vectorial model for the analysis of guided-wave photonic crystals (PhCs) based on the use of the Green function;
- Design and characterization of electronic systems for the remote health monitoring through the screening of physiological and biological parameters with non-invasive technique;
- Study of the scaling principles in nanoscale MOS devices;
- Analysis of electronic devices at the hyper-frequencies (MESFET, HEMT, and HBT) for the prediction of internal and external thermal effects;
- Modeling of field-effect transistors on carbon nanotubes (CNTFETs) through the definition of SPICE models for the comprehensive design of analog and digital electronic circuits.

RESEARCH ACTIVITY

Database of Publication Scopus ID: <https://www2.scopus.com/authid/detail.uri?authorId=6603249520>
 Google Scholar ID: <https://scholar.google.it/citations?user=uVYAMN8AAAAJ&hl=it>
 OrcID: <https://orcid.org/0000-0002-5599-903X>

BIBLIOMETRICS

Scopus	H-Index: 27
Google Scholar	H-Index: 31
Web of Science	H-Index: 24

SCIENTIFIC AWARDS

Prize description	The paper entitled "Experimental demonstration of a novel bio-sensing platform on plasmonic bandgap formation in gold nano-patch arrays," published on Optics Express, has been selected by the Editors of Virtual Journal of Biomedical Optics for a special publication.
Given by	Editors of the Virtual Journal of Biomedical Optics
Year	2011

Prize description	The paper entitled "Gain-assisted extraordinary optical transmission through periodic arrays of subwavelength apertures," published in the New Journal of Physics, has been selected by the Editors for inclusion in the 'Highlights of 2012' collection based on referee endorsement, impact, and broad appeal.
Given by	Editors of the New Journal of Physics
Year	2012
Prize description	CNR-STIIMA prize for the scientific dissemination – Author of the greatest number of equivalent papers of 2020
Given by	SDAB Commission – Scientific Dissemination Advisory Board – CNR-STIIMA
Year	2020

ADDITIONAL INFORMATION ABOUT RESEARCH ACTIVITY

Visiting activities	<ul style="list-style-type: none">▪ Visiting Ph.D. student at the Department of Condensed Matter Physics (Departamento di Física Teórica de la Materia Condensada) of the Autónoma University of Madrid (Universidad Autónoma de Madrid), Spain, under the supervision of Prof. Francisco J. García-Vidal (From February 2011 to October 2011)▪ Visiting Researcher at Universidad Autónoma de San Luis Potosí" (UASLP), Science Department (Facultad de Ciencias), San Luis Potosí, C.P. 78290, Mexico, in August 2022, within the "Short Term Mobility 2020" program granted by the CNR. Collaboration projects name: "Automatic estimation of analytical models of thermal propagation in composite materials for quality control in aeronautical production systems".
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Mexico City, 14/02/2024

Roberto MARANI