

Curriculum Vitae of Stefano Maci



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1. NARRATIVE CV

1.1. Academic career

Prof. Stefano MACI was born in Rome in 1961. He received his laurea degree (cum laude) in Electronic Engineering from the University of Florence, Italy, in '87. From '90 to '98 he was with the Department of Electronics of the University of Florence. Since '98 he is with the University of Siena, Italy, where he presently is a Full Professor with scientific responsibility of a group of 15 researchers (<http://www.dii.unisi.it/~lea/>). In his carrier he has held courses of Electromagnetic fields, Antennas, Propagation, Microwave, and Electromagnetic Compatibility, Advanced Mathematical Method for Engineering, at both University of Florence and Siena.

In his University he founded the PhD school of Information Engineering and Mathematics, one of the largest PhD school of University of Siena; he did so by unifying previous PhD in ICT and Mathematics. This PhD School presently includes about 50 PhD students coming from all over the world. During his direction from 2010 to 2016 120 students got the PhD.

Prof Maci has been advisor of 120 master students and 30 PhD students, listed hereinafter in cronological order. 1994-1998: L Borselli, F Capolino, M Albani, A Neto, F Mioc, A Falciani, S Bruni; 2006-2010: A Polemi, A Cucini, D Pasqualini, F Mariottini, L Infante, A Pippi; 2011-2014: G Donzelli, M Casaletti, M Nannetti, M Ettorre, F Caminita, G Carluccio, C Della Giovampaola, A Mazzinghi; 2015-2019: F Puggelli, G. Minatti, G Sardi, M Balasubramanian, M Faenzi, V Sozio, S Pavone, M Mencagli, A. Benini. Nine (9) of his former PhD students or Post Doc (Capolino, Albani, Neto, Polemi, Casaletti, Martini, Ettorre, Gonzalez, Mencagli), have undertaken academic carriers and now are professor or associate/assistant professors (3 in US, and 6 in EU, with two of them in Italy); 7 of them (Cucini, Mariottini, Mazzinghi, Caminita, Nannetti, Della Giovampaola, Minatti) have formed spin-off companies, and many others have become leading engineers in industries. Two of his former students are IEEE Fellow and 5 of them are IEEE Senior Members.

1.2. Research Activity

His present research interests are focused on Electromagnetics Engineering, with emphasis on high-frequency and beam representation methods, computational electromagnetics, large phased arrays, planar antennas and multilayer structures, reflector antennas and feeds, metamaterials and metasurfaces. His major scientific contribution are summarized hereinafter in chronologic order.

- 90-95 In '92 he extended the Physical Theory of Diffraction to impedance wedges, work initiated during his Master thesis; in '94, together with Prof. Tiberio he was co-author of an Incremental Theory of Diffraction for the description of a wide class of electromagnetic scattering phenomena at high frequency; this theory was improved since '04. Since '94 he published several papers about vertex diffraction coefficient in the framework of the Uniform Theory of Diffraction.
- 95-96 In '95 he was among the pioneers who introduced the concept of dual-frequency patch antennas, which in the successive years gained popularity due to dual-band mobile phones; the couple of principal papers published on this subject received 930 citations (source: Google Scholar, updated May 2019).
- 98-06 From '98 to '04 he published a series of papers on integrated lens antennas and relevant feeding systems. In this framework, together with A. Neto (TuDelft), he discovered an unusual phenomenon of broadband leaky-wave radiation.
From '98 to '05 he was co-author with Prof. Felsen of a diffraction theory for the high-frequency analysis of large truncated periodic structures, including the presence of dielectric stratification and relevant phenomenology; the latter subject was the matter of the citation for the IEEE Fellow award received in '03.
- 06-09 In 2006 he was one of the pioneers on Metamaterials research, with emphasis on Metasurfaces. On this subject he gave various short courses (with Prof Kildal and Prof Sievenpipers) and published several papers, including a well-known "pole-zero matching" theory, published in 2005 in a paper that received 200 citations (source: Google Scholar, updated May2019). From '06 to '09 he has published papers on synthetic (entire domain) macro-basis functions for array problems (one of which awarded as best paper of the year on ACES journal), and gave on this subject several short courses with Prof Mittra (PennState) and Prof Vecchi (Politecnico of Torino).
- 09-11 In '10 he has been coauthor of several papers on beam methods and on the use of beams as basis functions in generalized scattering matrices methods. In one recent paper he introduced a new class of conical beams (paper awarded at EuCAP 2009).
- 07-13 Since 2007 he has been working on Transformation Optics and cloaking; his paper on cloaking in 2008,

10-17 coauthored by A. Yaghjian, has been cited times with a citation rate record of more than 13 citations per year. In 2011 he has introduced the concept on “metasurfing” and published breakthrough papers on this topic and on metasurface antennas. With his group he has published thirty papers since 2011 on this topic; five of these papers have reached a total of 800 citations. On this subject he was the keynote (plenary) speaker at 17 international conferences, including one at the Royal Society of UK, and he gave 10 Distinguished Lectures in the framework of the IEEE APS Distinguished Lecturer Program (see specific point).

1.3. Main Scientific Recognitions and Awards

Career award

1. URSI Dellinger Gold Medal 2020 “For contributions on diffraction theory, metasurfaces and for impact on education in electromagnetism.”
2. IEEE “Chen-To Tai Distinguished Educator Award” in 2015 “For extraordinary impact in high-level education in the Antennas and Propagation community”
3. “EurAAP Award” 2014 “For having structured the post graduate education on Antennas and Propagation in Europe”,

Distinguished lecturer

4. IEEE Distinguished Lecturer
5. EuRAAP Distigished Ambassador Program Lecturer

Best Paper awards

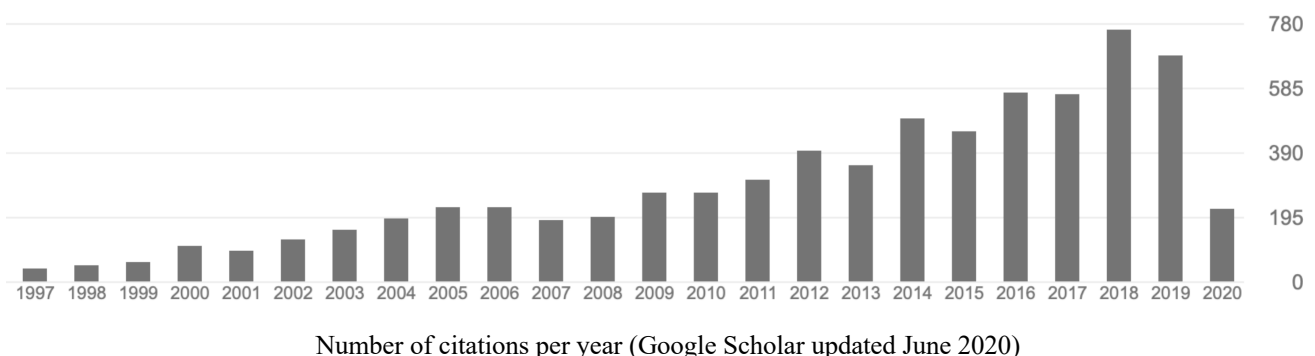
6. IEEE Antenna and Propagation Society “Sergei A. Schelkunoff Transactions Prize Paper Award” 2015 for the paper “Modulated Metasurface Antennas for Space: Synthesis, Analysis and Realizations,” IEEE Transactions on Antennas and Propagation, Vol. 63, No. 4, pages 1288-1300, April 2015

Society Fellow Appointments

7. URSI Fellow 2020
8. IEEE Fellow 2004

1.4. Publications and citations

Prof. Maci has a publication record, with 7160 citations from Google Scholar, and (5183 from Scopus), 14 papers cited more than hundred times on Google; H-number Google Scholar=43. He published around 160 papers on international journals, with around 100 papers published in IEEE Journals (mainly Transaction on Antennas and Propagation), 9 Book Chapter and more than 400 conference papers.



The Best 10 publications		Cit (Google)	Year
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1	<i>Synthesis of modulated-metasurface antennas with amplitude, phase, and polarization control</i> G Minatti, F Caminita, E Martini, M Sabbadini, S Maci IEEE Transactions on antennas and propagation 64 (9), 3907-3919 (S. Maci was the head of the group who developed the work and PI of the European Space Agency project that funded the work)	102	2016
2	<i>Modulated metasurface antennas for space: Synthesis, analysis and realizations</i> G Minatti, M Faenzi, E Martini, F Caminita, P De Vita, D González, M.Sabbadini, S. Maci IEEE Transactions on Antennas and Propagation 63 (4), 1288-1300 (Awarded with Schelkunoff Transactions Prize Paper Award) S. Maci was the head of the group who developed the work and PI of the European Space Agency project that funded the work	216	2014
3	<i>A circularly-polarized isoflux antenna based on anisotropic metasurface</i> G Minatti, S Maci, P De Vita, A Freni, M Sabbadini IEEE Transactions on Antennas and Propagation 60 (11), 4998-5009 S. Maci was the head of the group who developed the work and PI of the European Space Agency project that funded the work	206	2012
4	<i>Non-uniform metasurface Luneburg lens antenna design</i> M Bosiljevac, M Casaletti, F Caminita, Z Sipus, S Maci IEEE transactions on antennas and propagation 60 (9), 4065-4073 S. Maci was the head of the group who developed the work and originator of the concept	155	2012
5	<i>Metasurfing: Addressing waves on impenetrable metasurfaces</i> S Maci, G Minatti, M Casaletti, M Bosiljevac IEEE Antennas and Wireless Propagation Letters 10, 1499-1502 S. Maci was the head of the group who developed the work and originator of the concept	304	2011
6	<i>Spiral leaky-wave antennas based on modulated surface impedance</i> G Minatti, F Caminita, M Casaletti, S Maci IEEE Transactions on Antennas and Propagation 59 (12), 4436-4444 S. Maci was the head of the group who developed the work and originator of the concept	221	2011
7	<i>Alternative derivation of electromagnetic cloaks and concentrators</i> AD Yaghjian, S Maci New Journal of Physics 10 (11), 115022 S. Maci shared the development of the theoretical formulation	140	2008
8	<i>A pole-zero matching method for EBG surfaces composed of a dipole FSS printed on a grounded dielectric slab</i> S Maci, M Caiazzo, A Cucini, M Casaletti IEEE Transactions on Antennas and Propagation 53 (1), 70-81 S. Maci was the head of the group who developed the work and originator of the concept	214	2005
9	<i>Frequency-domain Green's function for a planar periodic semi-infinite phased array. I. Truncated floquet wave formulation</i> F Capolino, M Albani, S Maci, LB Felsen IEEE Transactions on Antennas and Propagation 48 (1), 67-74 S. Maci contributed to the development of the concept	108	2000
10	<i>Dual-band slot-loaded patch antenna</i> S Maci, GB Gentili, P Piazzesi, C Salvador IEE Proceedings-Microwaves, Antennas and Propagation 142 (3), 225-232 S. Maci was the originator of the concept	470	1995

1.5. Coordination of large consortia: ESoA and FORESEEN

In 2005 he founded the European School of Antennas (ESoA), a post graduate school that presently comprises 30 courses on Antennas, Propagation, Electromagnetic Theory, and Computational Electromagnetics. ESoA counts about 150 among the best teachers of Europe (which include eleven IEEE Fellows) and it is frequented by an average of 220 students per

year. The ESoA consortium presently comprises 33 European research centres and offers twelve one-week courses per year. Stefano Maci is the Director of ESoA since its foundation, and he is also involved directly in the organization and/or teaching of several ESoA courses (see analytic CV). ESoA have had and has having a strong impact on the Antennas and Propagation community in and outside Europe. In the last 2 years, ESoA is organizing also courses outside Europe.

In 2013 he founded together with Jean Chazelas of Thales Systemes Aeroportes, the consortium FORESEEN (Frontiers between Optics and Rf Extended by Study of Extreme Electromagnetism at Nanoscale), and he is presently the Director of the consortium. This consortium, which presently counts 49 European research organizations, has the main objective to be a platform for developing projects inside the EU research frameworks. Recently, he got as a principal investigator, together with 12 institution members of FORESEEN, a FET Open CSA project within H2020.

The ultimate objective of FORESEEN is to construct the Future Emerging Technology (FET) Flagship of the future around on Nanoengineering and Smart Materials. With the Foreseen consortium he was the promoter and coordinator of a one-billion € EU Flagship initiative on Future Emerging Technology called “NanoEngineering”, which is still in phase of selection from EU.

□

1.6. Research and Industrial Projects and Entrepreneurship activity

Professor Maci has coordinated several National and International research projects and industrial scholarship programs for an average amount of 500 keuro per year in the last 15 years. Recently, he was involved in several research projects supported by the European Union, the Italian ministry of research (MIUR), the European Space Agency (ESA-ESTEC) and the European Defense Agency (EDA). In particular, he participated to 26 cooperative ESA projects, 5 times as a principal investigator. He was 3 times principal investigators of large consortia projects funded by EU. He has cooperated with large industries and research institutions: THALES Aerospace (Paris, Francia), Thales Research and Technology (Paris, France), TICRA (Copenhagen), ONERA (Toulouse, France), Fraunhofer Institute (Bonn, Germany), TNO (Den Haag, The Netherland). He received 3 times research grants from the US-Army Research Laboratory (ARL) for research on Metamaterials. He has developed antenna engineering research projects with Leonardo (former Finmeccanica industries), Selex Galileo (Florence, Italy), Selex Sistemi Integrati (Rome, Italy), Elettronica (Rome, Italy), Thales Alenia Space (Rome, Italy) and with Ingegneria dei Sistemi (Pisa, Italy). In total he got 34 industrial research projects in the last 15 years

Prof Maci was co-founder in 2004 of the academic Spin-off “Wavecomm” <http://www.wavecomm.it/> and of the Spin-off “Wave-Up” <http://www.wave-up.it/> and in 2012 of the Spin-off “Wave-up” <http://www.wave-up.it/>. From 2018 to 2012 he was president of the company LEAntenne and Progetti SpA <http://www.leagroup.it/> and from 13 to 15 Scientific Director of industrial consortium “Polo Marconi

2. ANALYTIC CV

2.1. INSTITUTIONAL ACTIVITIES

2.1.1. Accademic tasks

<i>Year</i>	<i>Task</i>
90-98	Assistant Professor, University of Florence
98-04	Associate Professor, University of Siena
04-today	Full Professor, University of Siena (UNISI)
99-02	Member of the Executive Board of Department, Information Eng Department, UNISI
99-02	Leader of Faculty Tutoring Committee, UNISI
03-04	Leader of the Commission for Evaluation of the Department, Information Eng Dept, (UNISI)
04-06	Representative of the International Affair Board of the University
07-11	Representative of UNISI, Task Force Asia Pacific, Coimbra Project
10-12	Member of the Committee of UNISI Research (staff to UNISI Rector for Research program)
09-11	Director of the PhD School of Information Engineering, University of Siena
11-15	Director of the PhD School of Information Engineering and Science, University of Siena

2.1.2. Main Courses

<i>Year</i>	<i>Course teaching</i>	<i>Laurea Course</i>
94-95	Microwave	Electronic Eng. (ELC), University of Florence
94-97	Antennas	ELC University of Florence
98-12	Antennas and Propagation	Telecomm Eng (TLC) University of Siena
08-13	Electromagnetic Compatibility	Telecomm Eng (TLC), University of Siena
11-today	Electromagnetic field	Informatic Information Engineering (3-I), Univ. of Siena
16-today	Mathematical Methods for Engineering	Electronic and Comm Eng (ECE), and Computer Science and Automation Engineering (CAE), University of Siena

2.1.3. Master and PhD students

<i>Year</i>	<i>Master Students</i>
89-20	Advisors of about 130 Master Students in applied EM, Antennas, and Microwaves

<i>PhD Students</i>			
Year 94-98	Year 99-05	Year 06-10	Year 11-19
L Borselli	A Polemi	G Donzelli	F Puggelli
F Capolino	A Cucini	M Casaletti	G Sardi
M Albani	D Pasqualini	M Nannetti	M Balasubramanian
A Neto	F Mariottini	M Ettore	G Minatti
F Mioc	L Infante	F Caminita	M Faenzi
A Falciani	A Pippi	G Carluccio	V Sozio
	S Bruni	C Della Giovampaola	S Pavone
		A Mazzinghi	M Mencagli
			A Benini
			I Nadeem

2.1.4. Erasmus agreements

<i>Year</i>	<i>Activation and responsibility of Erasmus Bilateral Programs</i>
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01-13	Chalmers University of Technology, (Gotheborg, Sweden)
01-13	University of Glasgow, (Glasgow, Scotland)
02-13	Università di Alcalá (Madrid, Spain)
05-13	Technical University of Denmark (Copenhagen, Denmark)
08-13	Universidad Politecnica de Valencia (Valencia, Spain)
09-13	Universidad Carlos III, (Madrid, Spain)
09-13	Queen Mary College of London (London, United Kingdom)
10-13	Check Technical University (Prague, Check Republic)
10-13	Université Catholique de Louvain (Louvain, Belgium)
10-13	University of Zagreb (Croatia)
10-13	University of Carlos III, Madrid (Spain)

2.2. INTERNATIONAL EDUCATION ACTIVITIES

2.2.1. Direction and milestones of ESoA

2004	He founded ESoA
2006	He writes the ESoA Memorandum of Understanding, which includes recognition of PhD credits among the ESoA institutions.
2005	He received from the European Union (EU) financial support for participation of 120 PhD students in ESoA courses.
2007	He starts writing, together with co-teachers of the course "Advanced Mathematics for Antenna Analysis" the homonymous notes (400 pages), which is updated every year and distributed to all the students of the course.
2007	He received a grant from European Union within a FP6 "Marie Curie Action" for developing ESoA (MCA SCF 046042). Inside this framework, around 100 students were supported to participate in ESoA courses.
2008	He becomes a member of the Board of Directors of the European Association of Antennas and Propagation EurAAP with the task of coordinating the educational activity in Antennas and Propagation in Europe.
2010	European Union appointed ESoA as a "success story" of the EU 6th framework program
2011	ESoA and Methamorphose school agrees to have joined common courses on Metamaterials
2011	The agreement between EurAAP and IEEE Antennas and Propagation Society is signed.
2012	ESoA and EuMA (European Microwave Association) agrees to have common joined courses.
2011-2015	Around 100 students granted by European Science Foundation (Through the projects NewFocus, COST VISTA, COST GPR) and European Microwave Association (EuMA) with several European Project)
2014	ESoA courses start to give courses in China, South Africa, Emirates, Israel.
2018	The number of Institutions of the ESoA consortium have reached #40, with 14 countries involved
2019	EurAAP institutes the "Best ESoA Teacher Award" to be delivered every year on the basis of the evaluation forms filled by the students

2.2.2. Planning ESoA courses

2005	Planning of 11 ESoA courses, 244 students
2006	Signature of the Memorandum of Understanding
2006	Planning of 11 ESoA courses, 243 students
2007	Planning of 10 ESoA courses, 192 students
2008	Planning of 10 ESoA courses, 148 students
2009	Planning of 12 ESoA courses, 178 students
2010	Planning of 10 ESoA courses, 199 students, agreement with EuRAAP
2011	Planning of 14 ESoA courses, 244 students

2011	Signature of an Agreement with IEEE Antennas and Propagation Society
2012	Planning of 13 ESoA courses, 289 students
2013	Planning of 14 ESoA courses, 191 Students
2014	Planning of 15 ESoA courses, 297 Students + 1 course in China
2015	Planning of 15 ESoA courses, 220 Students
2016	Planning of 13 ESoA courses, 243 Students+ 2 Courses out of Europe
2017	Planning of 13 ESoA courses + 4 Courses out of Europe
2018	Planning of 13 ESoA courses
2019	Planning of 15 ESoA courses + 1 course out of Europe

2.2.3. Teaching in ESoA courses

Year	Teaching of S Maci in ESoA Course
2005	“High Frequency Tech. and travelling wave antennas” Siena., IT Feb 21-23
2005	“Artificial EBG surfaces and Metamaterials” Gothenburg, SE, April 8-22
2005	“Phased array and reflectarray” Den Haag, NL, April 11-15
2005	“Design and anal. of large refl. and lens antennas” Copenhagen, DK, May 8-13
2005	“Computational EM for Antenna analysis”, Torino, I, Sept 19-23
2006	“Advanced Mathematics for Antenna Analysis” Dubrovnik, CR, May 8-12
2006	“Propagation in mobile communications” Siena, IT, June 5-9, 2006
2007	“Computational EM for Antenna analysis”, Torino, I, Sept 10-14
2007	“Artificial EBG surfaces and Metamaterials” Gothenburg, SE, Nov 29-Dec 2
2008	“Reflector and lens antennas” Gothenburg, SE, October 2007
2008	“Advanced Mathematics for Antenna Analysis” Dubrovnik, CR, May 5-9
2009	Artificial EBG surfaces and Metamaterials” Gothenburg, SE, November
2010	“Advanced Mathematics for Antenna Analysis” Dubrovnik, CR, May 10-18
2011	“Propagation and MiMo” Siena, IT, May 30-June 3, 2011
2011	“Frequency Domain Techniques for Antenna Analysis” Florence, IT, Sept 19-23,
2011	“Artificial EBG surfaces and Metamaterials” Gothenburg, SE, April 8-22
2011	“Reflector and lens antennas” Gothenburg, SE, 5-9 December 2011
2012	“Advanced Mathematics for Antenna Analysis” Dubrovnik, CR, May 14-19
2012	“Metasurface for Antennas” Valencia Sept 24-28 2012
2012	“Transformation Electromagnetics for Antenna Design” London, October 22-26
2013	Beam and high-frequency methods for Large Antennas” Tel Aviv, Nov 17-22 2013
2014	“Advanced Mathematics for Antenna Analysis” Dubrovnik, CR, May 12-17 2014
2014	“Reflector and lens antennas”, Gothenburg, SE, Sept 22-27 2014
2015	« Transformation Optics for Antennas », London, UK, Jan 26-30, 2015
2015	« Metasurfaces for Antennas », Zagreb, Oct 2-9 2015
2015	“Beam and high-frequency methods for Large Antennas” Tel Aviv, Nov 29-Dec 2, 2015
2016	“Advanced Mathematics for Antenna Analysis” Dubrovnik, CR, May 9-15, 2016
2017	“SatCom Antennas” Dubai, April 2-6, 2017
2017	“Metasurface and Metatronics”, Siena, IT, September 25-29, 2017
2017	“Reflector and Lens Antennas”, Gothenburg, SE, October 2-6, 2017
2018	“Advanced Mathematics for Antenna Analysis” Dubrovnik, CR, May 14-19, 2018
2019	“Metasurface for Antennas” Zagreb, HR, September 23-27, 2019

2.3. INTERNATIONAL SCIENTIFIC ACTIVITIES

2.3.1. International Scientific cooperation

Prof. J. Mosig	Ecole Polytechnique Federale de Lausanne
Prof. O. Breinbjerg	Technical University of Denmark
Prof. N. Engheta	University of Pennsylvania

Prof. P-S. Kildal	Chalmers University of Technology
Prof. P. H. Pathak	Ohio State University
Prof. P. Ya Ufimtsev	University of California Los Angeles
Prof. P. Uslenghi	University of Illinois
Prof Zvonimir Sipus	University of Zagreb
Prof. Werner Wiesbeck	University of Karlsruhe
Prof. Yang Hao	Queen Mary University of London
Prof. Cristophe Craeye	Université Catholique de Louvain
Prof. Andrea Neto	Technical University of Delft
Prof. Raj Mittra	PennState
Prof Tripon-Canseliet	École supérieure de physique et de chimie industrielles de la Ville de Paris
Dr. Jean Chazelas	Thales Systemes Aeroportes
Prof. F. Capolino	University of California at Irvine
Prof. R Sauleau	University of Rennes
Prof G Vecchi	Politecnico di Torino
Prof S. Tretiakov	AALTO
Pof Yiannis Vardaxoglou	Loughborough University
Prof Giampiero Gerini	TNO

2.3.2. Reviewer, Associate and Guest editorship

95-11	Reviewer IEEE Transaction on Antennas and Propagation
95-00	Reviewer Journal of Electromagnetic Wave and Applications
95-00	Reviewer Electronics Letters
96-01	Reviewer IEE Proceeding Microwaves Antennas and Propagation
97-03	Reviewer IEEE Transaction on Electromagnetic Compatibility
99-06	Reviewer Radio Science
02-06	Reviewer IEEE Antennas and Wireless Propagation Letters
04-07	Associate editor of IEEE Trans on EMC
05	Co-guest editor of the special issue of <i>IEEE Trans. On Antennas and Propagation</i> "Magnetic conductor, soft and hard surfaces, and other complex surfaces" Jan 2005
06	Co-guest editor of the special issue of <i>IEEE Trans. On Antennas and Propagation</i> "Electromagnetic wave propagation in complex environments: a tribute to Professor L.B. Felsen" Jan 2007
09-11	Associate editor of Transaction on Antennas and Propagation

2.3.3. International appointments

<i>Year</i>	<i>Appointments (the most important in bold)</i>
98	Senior member IEEE
01-07	Founder Member (01), Chair (01-04), and member (04-07) of the National PhD board of the Italian Society of Electromagnetism (SIEM)
03	Fellow IEEE "For contributions to the diffraction theory of planar periodic printed array antennas"
02-05	Member of URSI Commission B Technical Advisory Board
04-06	Member of the NATO Panel SET-TG 084 "Emerging Technologies for Sensors and Front-ends"
04-today	Director of the "European School of Antennas"
06-07	Chairmen of the "Proposal Evaluation Board" of the Antenna Centre of Excellence, FP7
09-13	Member of the Governing Board of the European Assoc. on Antennas and Propagation (EurAAP)
09-13	Member Elected of the Board of Directors of EurAAP
08-10	Member of the Executive Board of the FP7 EU project "Antennas Research and Technology for

	Intelligent Car (ARTIC)”
09-12	Member of the Governing Board of the EU project “Coordinating the Antenna Research in Europe” (CARE)
08-10	Member of the Committee for Best papers in IEEE Transaction on Antennas and Propagation
08-13	Member of the Committee for the Award of IEEE Antennas and Propagation Society (AP-S)
10-13	Member Elected of the Administration Committee (AdCom) of IEEE AP Society
10-16	Member of the Technical Advisory Board of the URSI Commission B
10-13	Member of the Committee for the IEEE AP-S Distinguish Lecturers program
10-13	Member of the Steering committee of “NewFocus” (European Science Foundation)
10-14	Member of the Antennas and Propagation Executive Team of the Institution of Engineering and Technology (IET)
12-15	Distinguish Lecturer of the IEEE Antennas and Propagation Society
12-14	Chair of the Award committee of the IEEE Antennas and Propagation Society
14-Today	Director of the consortium FORESEEN (30 institutions, 7 countries, 200 researchers)
16-17	Member of the Advisory board of Aalto University
17-18	Chair of the Coordination and support Action “Nanoarchitectronics” (FET-Open, H2020)

2.3.4. Main Awards and Recognitions

2003	IEEE Fellow “ <i>For contributions to the diffraction theory of planar periodic printed array antennas</i> ”
2012	IEEE Distinguish Lecturer (Antennas and Propagation Society)
2006	Recipient Best journal paper award 2006 From Applied Computational Electromagnetics Society (paper 'Macro-Scale Basis Functions for the Method of Moment Analysis of Large Periodic Microstrip Arrays ')
2009	Recipient of Best Poster Paper award at EuCAP 2009, Berlin, Germany with the paper “Beam expansion in multi-reflector quasi-optical systems”
2011	Recipient of Best Paper on Antenna Theory, at EuCAP 2011, Rome, Italy, with the paper “Planar Antennas based on Surface to Leaky wave transformation
2011	Recipient of Best Paper on Antenna Innovation at 33rd ESA Antenna Workshop on Challenges on Antenna Systems, Noordwijk, 18-21 October 2011 with the paper “A Holographic isoflux antenna prototype for satellite applications”
2014	EuRAAP Award 2014 “for having restructured the post graduate education in Europe in the field of Antennas and Propagation”
2016	IEEE “Chen-To Tai Distinguished Educator Award” in 2015 “For extraordinary impact in high-level education in the Antennas and Propagation community”
2016	Recipient of IEEE Antenna and Propagation Society “Sergei A. Schelkunoff Transactions Prize Paper Award” 2015 for the paper “Modulated Metasurface Antennas for Space: Synthesis, Analysis and Realizations,” IEEE Transactions on Antennas and Propagation, Vol. 63, No. 4, pages 1288-1300, April 2015
2016	Recipient of the “Best EM Technology award” from the “Franco Bardelli” foundation
2017	Recipient of the best paper award on Antenna Application at EuCAP 2017, Paris, for the paper “multibeam antennas”
2018	Distinguished Lecture of European Association on Antennas and Propagation (EuRAAP) Ambassador program
2019	Recipient of the best poster paper award on METAMATERIALS 2019, Rome, for the paper “realization and measurements of a 40dBi metasurface antennas”

2.3.5. TPC of large conference (Since 2009)

<i>Year</i>	<i>Partecipation</i>	<i>Event</i>	<i>Place</i>
09	Tech. Prog.Comm	URSI EMT-S	Ottawa
10	Tech. Prog.Comm	EuCAP 2010, Responsible for Convened sessions	Barcelona
11	Tech. Prog.Comm	EuCAP 2011, Responsible for Invited talks	Rome
11	Tech. Prog.Comm	MAPE 2011	Beijing
12	Tech. Prog.Comm	EuCAP 2012	Prague
13	Tech. Prog.Comm	EuCAP 2013	Göteborg
13	Tech. Prog.Comm	URSI EMT-S	Hiroshima
16	Tech. Prog.Comm	Metamaterial 2016	Crete
17	Tech. Prog.Comm	URSI General Assembly 2017- Convener	Montreal
17	Tech. Prog.Comm	Metamaterial 2017	Marseille
18	Tech. Prog.Comm	EuCAP 2018 Responsible for the EuCAP Awards	London
19	Chair of TPC	Metamaterial Congress 2020	New York

2.3.6. Plenary talks and IEEE Distinguished Lectures (since 2011)

Date	Title	type	Place
Nov 2011	Metasurfing: addressing wave on metasurfaces for realizing Antennas and Microwave devices	Plenary	Microwave Antennas, Propagation and EMC for Wireless communications (MAPE 2011, Beijing)
Nov 2011	Metasurface Antennas	Plenary	ACC Antenna Symposium , Tel Aviv
March 2012	Metasurfing wave antennas	Plenary	GeMiC 2012, Ilmenau
Nov 2012	Metasurfing Antennas	Plenary	International Conference on Wireless Informat. Techn and Systems (ICWITS, Hawaii)
July 2012	Metasurfing wave antennas	DL	Huntsville, Alabama Chapter (DL program)
Feb 2013	Retrieval of constitutive parameters in Metamaterials	DL	University of Pennsylvania (DL program)
Feb 2013	Metasurface Antennas and BFN	DL	PennState (DL Program)
March, 2013	Retrieval of constitutive parameters in Metamaterials	DL	University of Zagreb (DL program)
Nov 2013	Non Uniform Metasurfaces for Antennas	Plenary	Loughborough Antennas and Propagation Conference (LAPC),
Nov 2013	Metasurface Transformation Optics	Plenary	ACC Antenna Symposium , Tel Aviv
March 2014	Metasurface Antennas	DL	University of Montreal
March 2014	Metasurface Antennas	DL	University of Toronto
March 2014	Retrieval of Parameters in Metamaterials	DL	Ohio State University
July 2014	Metasurfaces: an established Technology for New Concepts	Plenary	ANTEM, Victoria, July 15, 2014
July 2014	Metasurface antennas	Plenary	LAPC, Loughborough, 2014
August 2014	Controlling waves on Metasurfaces	Plenary	URSI General Assembly (Tutorial commission B)
January 26 2015	Flat Transformation Optics	Plenary	Royal Society Meeting, London, UK, 2015
March 2015	Flat Optics	DL	Jet Propulsion Laboratory, US, 2015
December 18, 2015	Radiation and Guidance on Metasurfaces	DL	Aalto, Finland
14 October	Metasurface Technology for	Plenary	MEET 2016, Florence, 14 October 2016

2016	Space Antennas		
July 14, 2017	Design of Modulated Metasurface Antennas	Half-Plenary	IEEE AP-S Symposium, S. Diego, July 14, 2017
October 24, 2017	Metasurface Antennas	Plenary	GDR conference, Nice, October 24, 2017
October 2017	Guidance and radiation of metasurface waves	Plenary	ISAP, Phuket, 30 October-2 November 2017
November 2017	Radiation of Metasurface waves	Plenary	EM-MTF 2017, Queensland, New Zealand, Nov 6, 2017
November	Metasurface Antennas	Plenary	ICECTA 2017, Dubai, 22 November 2017
August 2018	Metasurfaces from theory to applications	Plenary	Metamaterial conference 2018
April 2019	Metasurface Antennas: from fundamental EM Theory to competitive devices	Plenary	Krakov, EuCAP 2019
January 2018	Metasurface Antennas: from fundamental EM Theory to competitive devices	Plenary	Cairo German University of Cairo, Antenna Workshop
June 2019	Leakage from Metasurfaces: Basic Theory and Applications	Key-Note	Roma, PIERS 2018
July 2019	Metasurfaces: from basic EM theory to practical antenna applications	Key-Note	METANANO 2019, S. Petersburg
Oct 2019	Radiation of Metasurface waves	Key-note	EM-MTF 2019, Magnetic Island, Australia, October 7, 2019

2.3.7. IEEE short courses

Year	Speaker	Short course	Place
02 June	P-S Kildal, S. Maci	IEEE Short course "Theory and application of PBG structures used as artificial magnetic conductors and soft and hard surfaces"	IEEE AP-S Symp S. Antonio, Texas
03 June	P-S Kildal, S.Maci, D.Sievenpiper	IEEE Short course "Theory and application of PBG structures used as artificial magnetic conductors and soft and hard surfaces"	IEEE AP-S Symp Columbus, Ohio
03 April	P-S Kildal, S.Maci	IEEE Short course "Theory and application of PBG structures used as artificial magnetic conductors and soft and hard surfaces"	Kalmar, Sweden,
03 May	S. Maci, G. Vecchi	PhD Course "Challenges in complex planar structures: arrays and artificial surfaces"	University of Karlsruhe
03 Sept.	P-S Kildal, S.Maci, D.Sievenpiper	IEEE Short course "Theory and application of PBG structures used as artificial magnetic conductors and soft and hard surfaces"	ICEAA, Torino
04 June	P-S Kildal, S.Maci, D.Sievenpiper	IEEE Short course "Theory and application of PBG structures used as artificial magnetic conductors and soft and hard surfaces"	IEEE AP-S Symp Monterey, California,
05 July	P-S Kildal, S.Maci, D.Sievenpiper	IEEE Short course "Theory and application of PBG structures used as artificial magnetic conductors and soft and hard surfaces"	IEEE AP-S Symp Washington DC,
05 July	S. Maci, R. Mittra, G. Vecchi	IEEE Short course "A Unified Iteration-Free Approach to Solving Large Antenna and Scattering Problems"	IEEE AP-S Symp Washington DC,
06 July	S. Maci, R. Mittra, G. Vecchi	IEEE Short course "A Unified Iteration-Free Approach to Solving Large Antenna and Scattering Problems"	IEEE AP-S Symp Albuquerque,
10 July	A Alù, N. Engheta, S. Maci	IEEE Short Course "Plasmonic and Transformation Optics Cloaking"	IEEE AP-S Symp Toronto

2.3.8. Member of International PhD committees

<i>Year</i>	<i>PhD Candidate and University</i>
1998	Michael Lumholt, Technical University of Denmark, Lingby, Denmark Nov. 98
1999	Marteen van der Vorst, Technical University of Eindhoven, The Netherlands, April 99
2001	Johan Granholm Technical University of Denmark., Lingby, Denmark, Jan 2001.
2003	Erik Jorgensen, Technical University of Denmark, Lingby, Denmark, 2003
2006	Nuria Llombart, Universidad Politecnica de Valencia, Spain, May 2006
2006	Gael Godi, IETR, Rennes, France, October 2006
2008	Elena Pancera, University of Karlsruhe, Germany, May 2008
2009	Sinisa Skokich, University of Zagreb, Croatia, 2009
2009	Felipe Vico, Universidad Politecnica de Valencia, Spain, 2009
2009	Olli Luukkonen, Aalto University, Helsinki, Finland, December 2009
2010	Oscar Quevedo Teruel, University Carlos III, Madrid, Spain, February 2010
2010	Lyazid Aberbour, Université Catholique de Louvain, Louvain, Belgium, April 2010
2011	Marko Bosilijevac, University of Zagreb, Croatia, 2011
2012	Wenxuan Tang, Queen Mary University of London, UK, 2012
2012	David Gonzalez Ovejero, Université Catholique of Louvain, Belgium, 2012
2013	Emmanuel Gerone (HDR), University Pierre and Marie Curie, Paris, France, 2013
2014	Yakir Hadad, Tel Aviv University
2015	Beatriz Blazquez, TuDelft
2015	Luca Di Palma, University of Rennes 1
2015	Jounas Ra'di, AALTO, 2015
2017	Amagoia Tellechea, UpNA, 2017
2017	Bakhtiyar Orazbayev, UpNA, 2017
2017	Fabrizio Silvestri, TuEindhoven, 2017
2017	Karim Achouri, Montreal, August 2017
2017	Andreas Ericsson, University of Lund, 2017
2018	Fatemeh Ghasemifard, KTH Royal Institute of Technology, 2018
2019	Mario Ferraro, University of Nice Sophia Antipolis, 2019
2020	Modeste Bedou, Université Catholique de Louvain, Louvain, Belgium, April 2020

2.4. RESEARCH PROJECTS

2.4.1. Cooperative international research projects (ESA,EDA,EU)

Year	Title of the project	Financing Instit.	Involved institutions	Role
96-97	Omnidirectional antenna system for rendez-vous and docking	European Space Agency (ESA-ESTEC) Noordwijk	IDS, PoliTo	Team leader
95-96	Advanced Electromagnetic Customiza tool set	European Space Agency (ESA-ESTEC) Noordwijk	IDS, Politec.of Turin, Univ.of Rome, TICRA	Team leader
97-98	Integrated antenna development	European Space Agency (ESA-ESTEC) Noordwijk	SRON, Techn. Univ.. Eindhoven, Univ. of Glasgow, UNISI	Team leader
98-99	Antenna Design Framework Follow-on	European Space Agency (ESA-ESTEC) Noordwijk	IDS, TICRA, Poli. Of Turin, Univ. Tor Vergata, UNISI	Team leader
98-99	Antenna Farm Simulation Tools	European Space Agency (ESA-ESTEC) Noordwijk	IDS, Space Engineering, , Alenia Spazio, TNO, UNISI	Team leader
98-99	Antenna CAD and technology for Future SARs	European Space Agency (ESA-ESTEC) Noordwijk	Saab Ericsson Space, LEMA-EPFL, IDS, UNISI	Team leader

98-00	Multipurpose Antenna Design Simulator	European Union-FP5	Thomson-CSF/RCM (F), IDS (I), TICRA (DK) NTUA (GR), UNISI LEMA/EPFL (CH), PoliTo (I)	Team leader
02-04	Integrated Electromagnetic Modelling of Satellite Antenna	European Space Agency (ESA-ESTEC) Noordwijk	IDS, EADS-MATRA, NLR, PoliTo UNISI	Team leader
04-06	Antenna Center of Excellence	European Union-FP6-NoE	46 Institutions	WP leader
03-05	Radiating structure with low environmental impact for multimedia applications	Italian Ministry of Scientific Research (MIUR)	6 Institutions	WP leader
05-07	European antenna modelling library (EAML1)	European Space Agency (ESA-ESTEC) Noordwijk	TICRA, IDS, PoliTo, UniFi SATIMO, UNISI	WP leader
06-08	Antenna Center of Excellence 2	European Union –FP6-NoE	52 Institutions,	WP leader
07-10	European School of Antennas (ESOA)	European Union –Marie Curie Action	24 Institutions	Coordinator
07-08	European antenna modelling library 2 (EAML2)	European Space Agency (ESA-ESTEC) Noordwijk	TICRA, IDS, PoliTo, UniFi SATIMO, UNISI	WP leader
09-10	European antenna modelling library 3 (EAML3)	European Space Agency (ESA-ESTEC) Noordwijk	TICRA, IDS, PoliTo, UniFi SATIMO, UNISI	WP leader
08-10	Antenna Research and Technology for Intelligent Car (ARTIC)	European Union-FP7-CA	11 Institutions	WP leader
08-09	Reconstruction of Antenna Full Far field Pattern from Tuncated spherical Data Sets	European Space Agency (ESA-ESTEC) Noordwijk	UNISI, SATIMO	Principal Investigator
08-09	Design of reflectarrays	Italian Ministry of Scientific Research (MIUR)	6 Institutions	Team leader
09-11	Coordinating the Antenna Research in Europe (CARE)	UE-FP7-CA	16 Institutions	WP Leader, Team leader
10-11	Scalable low-mass low-envelope high-to-very-high gain antenna (HOLOANT1)	European Space Agency (ESA-ESTEC) Noordwijk 4000106020/12/NL/MH	IDS, UniFi, UNISI	WP Leader, Team leader
11-14	Metamaterials for active electrically scanned arrays (METALESA)	European Defense Agency (EDA)	(Thales, Onera, UPNA, Taeco, UNISI, Fraunhofer Institute)	WP Leader, Team leader
10-14	New Frontiers in mm and sub-mm waves integrated dielectric focusing system (NewFocus)	European Science Foundation	12 Institutions	WP Leader, Team leader
11-12	Holographic metasurface antennas (HOLOANT2)	European Space Agency (ESA-ESTEC) Noordwijk	IDS, UNISI	WP Leader, Team leader
12-13	Shared Aperture Reflector Antennas (SARA)	European Space Agency (ESA-ESTEC) Noordwijk 4000106924/NL/GLC/fe	TICRA, UNISI	WP Leader, Team leader
13-14	Conjugate Matched Metasurface Enhanced Arrays	European Space Agency (ESA-ESTEC) Noordwijk 4000109520/13/NL/MH	UNISI, WU	Team Leader
13-15	Scalable low-mass low-envelope high-to-very-high gain antenna (LCDA)	European Space Agency (ESA-ESTEC) Noordwijk	TICRA, IDS, MVI, UNISI	Principal Investigator
13-15	“Beam Shaping by Surface Impedance Control”	Contract No. 4000109033/13/NL/M	IDS, MVI, UNISI	Principal Investigator
13-14	Transformation Optics Design of Metasurface Antennas and Beamforming devices	Army Research Laboratory, Baltimore, USA	UNISI	Principal Investigator

16-18	“Medium-to-high gain X-band antenna with customizable pattern and polarization”	Contract No. 4000118932/16/NL/AF European Space Agency (ESA-ESTEC) Noordwijk	IDS, MVI, UNISI	Team leader
16-18	“Electronically steerable low drag aeronautical antenna” (DragOnFly)	Contract No. 4000114264/15/NL/CLP European Space Agency (ESA-ESTEC) Noordwijk	TNO, UNISI, VIASAT	Team leader
15-17	“Improving the performances of modulated metasurface antennas”	Contract No. W911NF-15-1-0528, US-Army	UNISI	Principal Investigator
16-18	“EMUSER – Enhanced Multi-Sensor Data Handler for Railways”	Contract No. 4000116470/16/UK/AD European Space Agency (ESA-ESTEC) Noordwijk	UNISI, WaveUp	Team leader
16-18	“High-performance horns with customizable radiation properties”	Contract No. 4 European Space Agency (ESA-ESTEC) Noordwijk 000113142/15/NL/IA	UNISI, IDS, Istituto Boella, MVI	Team leader
16-18	“AMC/metamaterial antennas for broadband connectivity”	Contract No. 4000114502/15/NL/MH European Space Agency (ESA-ESTEC) Noordwijk	UNISI, IDS, POLITO, CNR, WU	Team leader
17-19	“Low profile, active, scanning ararray antenna demonstrator”	Contract No. 4000119521/17/UK/ND European Space Agency (ESA-ESTEC) Noordwijk	UNISI, IDS, Boella, CNR, WU	Team leader
17-19	Nanoarchitectronics	FET Open (CSA), EU H2020 framework program	12 institutions	Principal Investigator
20-21	Metasurface Antennas for Satellite Applications	Project of Relevant Italian Interest (PRIN)	UNISI/POLITO	Principal Investigator
20-22	METAMASK	FET Open (PADR), EU H2020 framework program	UNISI, THALES, TNO, ESPCI	Principal Investigator

2.4.2. Single investigator in research projects

Years	Title of the project	Financing Institution
96-97	Dual frequency and dual polarisation patch antennas for SAR	Alenia-Spazio, Rome, Italy
96-97	Modelling of currents induced close to vertex discontinuities	MOTHEM, Paris, Fr
98-99	Efficient Electromagnetic Modelling Tools for Large Arrays	DASA, Monaco, DE
00-01	Active antenna for tmobile object link	Oto Melara, La Spezia, Italy
00-01	Implementation of Green’s functions in Multilayer media	IDS, Pisa, Italy
01-02	MoM in parallel plate waveguide	IDS, Pisa, Italy
02	Predictions models for large array antennas	University of Siena
02-03	Antenna installation on complex platforms	EADS-MATRA, Toulouse, Fr
01	Reduction of radiation aperture integral to line integrations in	IDS, Pisa, Italy
01	Uniform diffraction coefficients for a metallic vertex	IDS, Pisa, Italy
01-02	Antenna attiva ad onde millimetriche per telecontrollo	Oto Melara, La Spezia, Italy
02-03	Design of a Radar CW	Oto Melara, La Spezia, Italy
03	Modelling of scattering from rough scattering	Oto Melara, La Spezia, Italy
03-04	Design of a radar antenna with very low side lobe	Oto Melara, La Spezia, Italy
03-04	Analysis methods for periodic planar stratified structures: effects of bandgaps, localized sources and truncations (PAR)	University of Siena
02-03	Innovative technology and EM modelling of antennas for space observation	Italian Space Agency
04-05	Phase Error Correction in the ESTEC Compact Payload Test Range using the Shadow Boundary Integral technique	European Space Agency (ESA-ESTEC) Noordwijk
04-05	EM modelling of FSS curved radome	Galileo Avionica, Firenze

05-06	EBG based antennas (PAR)	University of Siena
06-07	Electromagnetic modelling of complex environment	IDS, Pisa, Italy
06-07	Analysis of FSS coupled to phased arrays	Selex SI, Rome, Italy
06-08	Design of integrated automotive antennas	Calearo, Verona, Italy
07-08	FSS placed on planar phased array	Selex SI, Rome, Italy
08-09	EBG design for phased array	Selex Galileo, Firenze, Italy
08-09	Design of Antennas in TETRA band	LEAntenne, Verona, Italy
10-11	Extraction of equivalent constituent parameters in volumetric metamaterials	Army Research Laboratory, Baltimore, USA
11-12	Homogenization of Multilayer Metamaterials: generalization and applications	Army Research Laboratory, Baltimore, USA
11-12	Metamaterials for Ultrawideband Antennas	Elettronica, Rome, Italy
12-13	Isoflux antennas based on impedance surface control	Thales Alenia Space, Italy
13-14	Reconfigurable metasurfaces	Thales RT, Paris, France
14-16	Multiple and wide band metasurface antenna structures for telecom applications	ESA-NPI project 4000111405/14/NL/MH
13-15	Thin metasurface lenses for antenna pattern shaping and polarization control	ESA-NPI project 4000108852/13/NL/MH
17-18	Design of a Monopulse Radar Antenna Based on Modulated Metasurface Apertures	MBDA
18-19	PTD-Symmetry Protected Edge Modes in Metasurface Junctions	Huawei
18-19	All-Dielectric Metamaterials	Huawei
18-today	Joint Laboratory “Metasurface Lab” UNISI/Wave-Up	Wave-Up
19-today	Joint Laboratory “Antenna Innovation Lab”	Huawei

2.5. INDUSTRIAL ACTIVITIES

2.5.1. Industrial collaborations

Alenia Spazio	Roma, Italia
Oto Melara	La Spezia, Italia
SELEX Galileo (now LEONARDO)	Firenze, Italia
IDS	Pisa, Italy
SELEX ES (Now LEONARDO)	Roma, Italia
ESA-ESTEC	Noordwijk, The Netherlands
TICRA	Copenhagen, Denmark
TNO	Den Haag, The Netherlands
ELETTRONICA	Rome, Italy
Thales Alenia Space	Rome, Italy
Thales TRT	Paris, France
Thales Systemes Aeroportier	Paris, France

2.5.2. Entrepreneurship Activity

04	Co-founder of the academic Spin-off “Wavecomm” http://www.wavecomm.it/
12	Co-founder of the Spin-off “Wave-Up” http://www.wave-up.it/
08-12	President of LEAntenne e Progetti SPA http://www.leagroup.it/
10-13	University Representative at the Finmeccanica <i>Focus Group</i> on METAMATERIALS
10-11	Responsible of the Joint University-Industrial Laboratory “LEA2” (LEASquare)
13-15	Scientific Director of industrial consortium “Polo Marconi”