

CURRICULUM VITAE OF PROF. MASSIMILIANO PIERACCINI

PERSONAL INFORMATION

Name: Massimiliano

Surname: Pieraccini

Researcher unique identifier: orcid.org/0000-0002-3661-726X

Nationality: Italian

BIBLIOMETRIC INDICATORS (source: SCOPUS, November 2021)

Number of publications: 173

Number of citations: 3322

h-index: 33

Massimiliano Pieraccini is in the **2019 ranking of the most influential researchers in the world**, according to a study conducted by Stanford University and published by PLOS Biology for all disciplinary sectors, based on the Scopus database. Top 2% researchers were selected (in total about 160,000), who were most influential in their sector for 2019 based on a set of indicators, largely based on the citations received.

EDUCATION

1998 PhD in Nondestructive Testing, University of Florence, Italy

1994 Master's degree in physics, University of Florence, Italy ("Nello Carrara" degree prize)

CURRENT POSITION

2021 Full Professor of Electronics

2020 President of School of Electronic Engineering, University of Florence, Italy

PREVIOUS POSITIONS

2005 – 2020 Associate Professor at Electronics Department of Information Engineering, University of Florence, Firenze, Italy

1997 – 2005 Researcher at the Department of Electronic Engineering, University of Florence, Firenze, Italy

TEACHING ACTIVITIES

Since 2002 – Chair of "Fundamentals of Electronics" at University of Florence, Italy

Since 2015 – Chair of "Electronics for Space" at University of Florence, Italy

2002 – 2010 Chair of "Electronics for Telecommunications" at University of Florence, Italy

2008 – 2015 Chair of "Technologies for Cultural Heritage" at University of Florence, Italy

ORGANIZATION OF SCIENTIFIC MEETINGS

2015 General Chairman of 7th International Workshop on Advanced Ground Penetrating Radar (IWAGPR2015), Florence, Italy

2010 Technical Chairman of 10th International Symposium on Ground Penetrating Radar (GPR2010), Lecce, Italy

RESEARCH MANAGEMENT

In 2001 prof. Massimiliano Pieraccini established the Technology for Cultural heritage Laboratory of the Department of Electronics and Telecommunications of the University of Florence, Italy

(currently named Electronic Systems for Environment and Cultural Heritage Laboratory ESECH Lab). This laboratory has its own home with several work positions, two desks for assembling circuits, one mechanical workshop. The non-permanent staff has ranged between two and ten people.

The laboratory has managed about 1.5 million euros of research projects. The main sources of funding have been: European Community, Italian Government, Regional Government, and private companies.

Currently Massimiliano Pieraccini is managing several research projects including the European project AURORA of Horizon 2020.

MAIN ACHIEVEMENTS

In 2003, Massimiliano Pieraccini first developed and tested an interferometric ground-based synthetic aperture radar (GBSAR), i.e. a radar able to exploit the principles of the spaceborne SAR (synthetic aperture radar) interferometry with a ground-based installation.

The “killer application” (i.e. the application that has had a real market and has pushed the development of the technique) of this kind of radar has been the displacement detection on slopes activated by landslides or mines. After about 15 years of R&D (of which the proponent has been one of the main protagonists) GBSAR systems have become popular geotechnical equipment. Worldwide, several commercial companies manufacture GBSAR systems or provide monitoring services based on these radar systems. Currently the GB-SAR market is evaluated several millions of euros per year.

Another significant achievement of Massimiliano Pieraccini has been in the field of Ground Penetrating Radar. Since his pioneering works in the years 2000-2005, he has gained a recognized experience in designing high frequency large bandwidth Ground Penetrating Radar (GPR). By the way, one radar specifically designed by Massimiliano Pieraccini decisively contributed to the search of the lost fresco “La battaglia di Anghiari” by Leonardo da Vinci. This event had great media coverage.

REVIEWER OR ADVISOR OF RESEARCH PROJECTS

Since 2007, member of the Register of Experts in Technological Innovation of the Ministry of Economic Development 2011 - Reviewer of the Agence Nationale de la Recherche (France)

2012 - Reviewer of the University of Missouri

2013 - Reviewer of the research and development, innovation and technology transfer projects of the Liguria Region

2014 - Reviewer of the SIR (Scientific Independence of young Researchers) of the Italian Ministry of University and Scientific Research 2015 - Reviewer of the "Rita Levi Montalcini" Young

Researchers Program of the Italian Ministry of University and Scientific Research 2016 - Scientific advisor of the JUNO (High Energy Physics) project of the Chinese Ministry of Research

2016 - Reviewer of the "Mission Sustainability" call of the University of Tor Vergata, Rome, Italy

2017- Reviewer of the European Research Council (ERC)

2018 - Reviewer for “Innovation Start-up Projects” of the Campania Region 2018 - Reviewer of the Swiss National Science Foundation

2018 - Reviewer of the Pazy Foundation (Israel)

2018/2019/2020/2021 - Reviewer of the Latvian Council of Science

2020 Reviewer FISR of Italian Ministry of University and Research

RECENT INTERNATIONAL PATENTS

- "Synthetic-aperture interferometric radar with an antenna sliding along a rotating arm"; Inventor: Massimiliano Pieraccini; Applicant: Università degli Studi di Firenze; US patent application: US15747974; Pub. No. US2018/024541 A1; Pub. Date: Aug.9,2018 (licensed to IDS Georadar, Hexagon Geosystems group)
- "Interferometric radar with rotating antenna"; Inventor: Massimiliano Pieraccini; Applicant: Università degli Studi di Firenze; US patent application: US 15747930; Pub. No. US2018/0217253 A1; Pub. Date: Aug.2,2018 (licensed to IDS Georadar, Hexagon Geosystems group)
- "Bistatic interferometric terrestrial radar with transponder"; Inventor: Massimiliano Pieraccini; Applicant: Università degli Studi di Firenze; Application PCT, International Publication Number WO2018/069760 A1; Pub. Date: Apr.19,2018 (licensed to IDS Georadar, Hexagon Geosystems group)
- "Ground-based synthetic aperture radar (GBSAR) with multiple transmit and receive antennas (MIMO) and using the processing technique called compressive sensing (CS)". Inventors: Massimiliano Pieraccini, Lapo Miccinesi, Neda Rojhani. PCT Application: WO2020003191 (licensed to IDS Georadar, Hexagon Geosystems group)
- "A method and apparatus for monitoring slender elements by means of dynamic measurements of structural asymmetry", Application PCT, International Publication Number WO2016/059462A1, International Publication Date 21 April 2016