

# Carlo MASSARONI

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DEPARTMENTAL FACULTY OF ENGINEERING  
 UNIVERSITA' CAMPUS BIO-MEDICO DI ROMA - ITALY  
 Email [c.massaroni@unicampus.it](mailto:c.massaroni@unicampus.it) (work)

## JOB EXPERIENCE

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- May 2019 - **Assistant Professor (RICERCATORE RTD-A)**  
 current Unit of Measurements and Biomedical Instrumentation - Departmental Faculty of Engineering  
 Università Campus Bio-Medico di Roma (UCBM)
- Dec 2019 - **IEEE EMB WBSS Associate Member**  
 current Technical Committee on Wearable Biomedical Sensors and Systems (WBSS)  
 of the IEEE Engineering in Medicine and Biology Society (EMBS)
- Feb 2018 - **Chair Technical Committee**  
 current Committee: Wearable Sensors- IEEE Sensors Chapter Council, Italy Section
- Feb 2018 - **IEEE EMB BIIP Technical Committee Member**  
 current Technical Committee on Biomedical Imaging and Image Processing (BIIP)  
 of the IEEE Engineering in Medicine and Biology Society (EMBS)
- Jan 2017 - **Post-Doctoral Research Fellow**  
 May 2019 Unit of Measurements and Biomedical Instrumentation - Departmental Faculty of Engineering  
 Università Campus Bio-Medico di Roma
- Jan 2014 - **PhD Student in Bioengineering and Bioscience**  
 Dec 2016 Università Campus Bio-Medico di Roma  
 Thesis title: "Performance evaluation of motion capture systems for respiratory function assessment"
- May 2013 - **Bioengineer**  
 Dec 2013 Unit of Rehabilitation, Scientific Institute IRCCS Eugenio Medea, Conegliano (Treviso), Italy

## EDUCATION - QUALIFICATION

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- Aug 2018 - **National Academic Qualification as**  
 current **Associate Professor - "Settore 09/E4 - Misure meccaniche e termiche"**  
 Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR)
- Jan 2014 - Dec **PhD in Bioengineering and Bioscience**  
 2016 Università Campus Bio-Medico di Roma - Advisor: Prof. Sergio Silvestri  
 ([s.silvestri@unicampus.it](mailto:s.silvestri@unicampus.it))
- Nov 2014 - **Professional Engineer Licensure**  
 current
- Nov 2010 - Dec **M.Sc. in Biomedical Engineering**  
 2012 Università Campus Bio-Medico di Roma - 110/110 cum laude - Advisor: Prof. Sergio Silvestri
- Nov 2007 - Dec **B.Sc. in Biomedical Engineering**  
 2010 Università Campus Bio-Medico di Roma
- Sept 2002 - July **Graduation of secondary education in a Scientific Lyceum**  
 2007 Liceo Scientifico Tecnologico Luigi Trafelli, Nettuno (Rome) - 100/100

## POST-GRADUATED EDUCATION

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- 26-30 IEEE Sensor Council School, Optical Fibre Sensors  
 Jun 2017 University of Limerick, Ireland
- Sept 2013 Fundamentals of Clinical Trials (HSPH-HMS214x)  
 - May 2014 Harvard Medical School (online)

## TEACHING EXPERIENCE

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### A.Y. Lecturer

- 2020-2021 • Acceptance tests and performance periodical checks of medical devices (6 CFU - SSD ING-IND/12) of the Master Degree program in Biomedical Engineering, Università Campus Bio-Medico di Roma

### A.Y. Teaching Assistant

- 2020-2021 • Measurements (9 CFU - SSD ING-IND/12) of the Bachelor Degree program in Industrial Engineering, Università Campus Bio-Medico di Roma
- 2019-2020 • Measurements and Biomedical Instrumentation (9 CFU - SSD ING-IND/12) of the Master Degree program in Biomedical Engineering, Università Campus Bio-Medico di Roma (excluded A.Y. 2015-2016)
- 2018-2019 • Measurements and Biomedical Instrumentation (9 CFU - SSD ING-IND/12) of the Master Degree program in Biomedical Engineering, Università Campus Bio-Medico di Roma (excluded A.Y. 2015-2016)
- 2017-2018 • Measurements and Biomedical Instrumentation (9 CFU - SSD ING-IND/12) of the Master Degree program in Biomedical Engineering, Università Campus Bio-Medico di Roma (excluded A.Y. 2015-2016)
- 2016-2017 • Laboratory of Measurements (6 CFU - SSD ING-IND/12) of the Bachelor Degree program in Industrial Engineering, Università Campus Bio-Medico di Roma (up to 2019-2020)

### A.Y. Lecturer (Teaching Activity)

- 2016-2017 • “Introduction to MATLAB and Data Analysis” and “Using Excel for Data Analysis” within the IT for Operations Management Course, ELIS College, Rome - Italy.

## ACADEMIC DUTIES

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- 2019 - **Selection procedure member**  
 current Scientific-Disciplinary Sector ING-IND/12 - Mechanical and Thermal Measurements, at the facilities of the Integrated Research Center (C.I.R.) and the Departmental Faculty of Engineering
- Master's Degree in Biomedical Engineering - Teaching Quality Presidium**  
 Committee Member
- UCBM Alumni Association**  
 Organising Committee Member @ UBCM Alumni Association

## HONOURS AND AWARDS

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- 2021
1. 2021 MDPI Sensors Best Paper Award. “Contact-Based Methods for Measuring Respiratory Rate” Sensors (Basel). 2019 Feb 21;19(4):908. doi: 10.3390/s19040908.
  2. Best Paper Presented by a Woman - 1st classified to the paper entitled “FBG-based System for Loss of Resistance Detection During Epidural Injections” by F. De Tommasi, D. Lo Presti, C. Massaroni, et al. presented at the 2021 IEEE INTERNATIONAL WORKSHOP ON METROLOGY FOR INDUSTRY 4.0 & IoT. 05-08 June 2021 - Rome, Italy.
  3. Best Paper “Sensors for Metrology and Industry 4.0” - 3rd classified to the paper entitled “Respiratory rate monitoring of video terminal operators based on fiber optic technology” by D. Lo Presti, M. Zaltieri, J. Di Tocco, C. Massaroni, et al. presented at the 2021 IEEE INTERNATIONAL WORKSHOP ON METROLOGY FOR INDUSTRY 4.0 & IoT. 05-08 June 2021 - Rome, Italy.
  4. Best Conference Paper Award entitled “Temperature Monitoring by Fiber Bragg Gratings during Microwave Ablation of Ex Vivo Organs for Heat Sink Effect Assessment” by E. De Vita, F. De Tommasi, C. Massaroni et al. presented at the 2021 IEEE INTERNATIONAL WORKSHOP ON METROLOGY FOR INDUSTRY 4.0 & IoT. 05-08 June 2021 - Rome, Italy.
- 2020
1. 2020 MDPI Sensors Travel Grant - Travel Grant (CHF 800) to attend I2MTC 2020. February 2020 - Basel, Switzerland.
  2. Best Paper Presented by a Woman - 1st classified to the paper entitled “FBG-Based Smart Wearable Device For Monitoring Seated Posture In Video Terminal Workers” By M. Zaltieri, D. Lo Presti, C. Massaroni, R. Sabbadini, E. Schena, M. Bravi, S. Miccinilli, S. Sterzi, D. Formica. Presented at the 2020 IEEE INTERNATIONAL WORKSHOP ON METROLOGY FOR INDUSTRY 4.0 & IoT. 03-05 June 2020 - Rome, Italy.
  3. Best Paper Presented by a Woman - 2nd classified to the paper entitled “Temperature Monitoring During Microwave Thermal Ablation Of Ex Vivo Bovine Bone: A Pilot Test” By F. De Tommasi, M. Zaltieri, E. Schena, C. Massaroni, E. Faiella, R. F. Grasso, B. B. Zobel, E. De Vita, A. Iadicicco, S. Campopiano. Presented at the 2020 IEEE INTERNATIONAL WORKSHOP ON METROLOGY FOR INDUSTRY 4.0 & IoT. 03-05 June 2020 - Rome, Italy.
  4. Best Paper on Sensors For Metrology And Industry 4.0 - 3rd classified to the paper entitled “Wearable System For Knee Flexion/Extension Monitoring: Design And Assessment” By P. Resta, D. Lo Presti, E. Schena, C. Massaroni, D. Formica, T. Kim, D. Shin. Presented at the 2020 IEEE INTERNATIONAL WORKSHOP ON METROLOGY FOR INDUSTRY 4.0 & IoT. 03-05 June 2020 - Rome, Italy.
- 2019
1. Best Student Paper Awards on IEEE Sensors Journal 2019 for the paper “Wearable System based on flexible FBG for respiratory and cardiac monitoring” on IEEE Sensors Journal, v.19, no17, pp. 7391-7398, 1 Sept. 2019
- 2018
1. 2018 MDPI Materials Travel Grant - Travel Grant (CHF 800) to attend MeMeA 2018. March 2018 - Basel, Switzerland.
- 2017
1. Italian National Bioengineering Group (GNB) - Best PhD Thesis Award (€ 1200), “Istituto di Biorobotica” Award. 22nd September 2017 - Bressanone (BZ), Italy.
  2. IEEE Sensor Council Travel Award (€ 1000) to attend the 2nd IEEE Sensors Summer School on Optical Fibre Sensors at the University of Limerick, Ireland. 26th – 30th June 2017 - Limerick, Ireland.
  3. Best Poster Award of the IEEE Instrumentation and Measurement Society (IMS) to the poster entitled “Measurements of temperature during thermal ablation treatments on ex vivo liver tissue using fiber Bragg grating sensors” by Giovanna Palumbo, Agostino Iadicicco, Stefania Campopiano, Daniele Tosi, Emiliano Schena, Carlo Massaroni, Paolo Verze, Nicola Carlomagno, Vincenzo Tammaro, Juliet Ippolito. Presented at the International Conference IEEE I2MTC. 23rd – 25th May 2017 - Turin, Italy.

- 2016 1. European Society of Biomechanics (ESB) Travel Award (€ 400) to attend the ESB 2016 Congress in Lyon (France) and present the works entitled “An in-situ tool to calibrate optical motion capture system for breathing analysis” and “Breathing analysis during exercise: comparison between optoelectronic system and breath-by-breath analyzer” at the 22nd Congress of the European Society of Biomechanics (Respiratory Biomechanics Session).
- 2015 1. International Society of Biomechanics (ISB) International Travel Grant (ITG2015) (\$ 2500) to fund the Research Project “MoCBA: Motion Capture for Breathing Assessment” and to fund the foreign period of 6 months at University of Kent (UK).
- 2014 1. Associazione Italiana Ingegneri Clinici (AIIC) travel grant to attend the XIV Convegno Nazionale AIIC. 3rd – 5th April 2014 - Venice, Italy.
- 2013 1. Italian National Bioengineering Group (GNB) - Best MSc Thesis Award (€ 500), “GRUPPO NAZIONALE DI BIOINGEGNERIA” Award. 21st September 2013 - Bressanone (BZ), Italy.  
2. Società Italiana di Analisi del Movimento (SIAMOC) - Best MSc Thesis Award (€ 500) and Travel Award to attend the XIV Congresso Nazionale SIAMOC. 26th – 28th September 2014 - Pisa, Italy.

## GRANTS

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- 2020 2020 MDPI Sensors Travel Grant - Travel Grant (CHF 800) to attend I2MTC 2020. February 2020 - Basel, Switzerland.
- 2018 2018 MDPI Materials Travel Grant - Travel Grant (CHF 800) to attend MeMeA 2018, June 2018 Rome. March 2018 - Basel, Switzerland.
- 2017 IEEE Sensor Council Travel Award (€ 1000) to attend the 2nd IEEE Sensors Summer School on Optical Fibre Sensors at the University of Limerick, Ireland. 26th – 30th June 2017 - Limerick, Ireland.
- 2016 European Society of Biomechanics (ESB) Travel Award (€ 400) to attend the 22nd Congress of the European Society of Biomechanics (Respiratory Biomechanics Session) - Lyon, France.
- 2015 International Society of Biomechanics (ISB) International Travel Grant (ITG2015) (\$ 2500) to fund the Research Project “MoCBA: Motion Capture for Breathing Assessment” and to fund the foreign period of 6 months at University of Kent (UK).

## RESEARCH GRANTS

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- 2020- **POR FESR LAZIO 2014-2020 - Progetti di gruppi di ricerca 2020**  
2022 **Sense MAsc project** “Sensorizzazione di mascherine facciali ad Elevata indossabilità per la Mitigazione e prevenzione di rischi Associati ad AffatiCamento Respiratorio”. Overall funding: 149.998,80 €.
- 2020- **POR FESR LAZIO 2014-2020**  
2022 **SMiLe project:** Sistema indossabile di Monitoraggio di parametri fisiologici per il benessere della persona e la prevenzione di malattie Lavoro-correlate. Overall funding: 149.998,80 €.
- 2020- **POR FESR LAZIO 2014-2020 Regione Lazio**  
2022 **PISTIS project** - “Piattaforma Innovativa per l’armonizzazione della quotidianità dei Soggetti deboli nel rapporto con l’avanzata eTà e l’Interazione con il loro Spazio abitativo” - Overall funding: 361.030,14€.
- 2020- **H2020-ICT-2018-2020 (RIA ACTION)**  
2023 **CONBOTS:** CONNected through roBOTS: physically coupling humans to boost handwriting and music learning.

- 2019- **INAIL - ISTITUTO NAZIONALE PER L'ASSICURAZIONE CONTRO GLI**  
2021 **INFORTUNI SUL LAVORO**  
**SENSE-RISC:** Sviluppo di abiti intelligenti Sensorizzati per prevenzione e mitigazione di rischi per la Sicurezza del lavoratori.
- 2019- **Università Campus Bio-Medico di Roma, Strategic Project**  
2021 **HOPE:** Hospital on the patient. Role in the project: WP Leader.
- 2019- **Fondazione G. B. Baroni Ente Filantropico**  
2022 **MONREAB:** Piattaforma per il monitoraggio del processo riabilitativo - Role in the project: Principal Investigator, Scientific Responsible.
- 2018- **Call LIFE 2020 - Regione Lazio**  
2020 **HEREMOS: HEalth REmote MONitoring System** - Role in the project: Task Leader.
- 2013- Progetto di Rilevante Interesse Nazionale (PRIN) - year 2012  
2016 **Mechanical measurements for the musculoskeletal apparatus: novel and standardizable methodologies for metrological assessment of measurement systems.**
- 2015 **International Society of Biomechanics (ISB)**  
**Motion Capture for Breathing Assessment (MoCBA) Project** - PRINCIPAL INVESTIGATOR - Role in the project: Principal Investigator, Scientific Responsible.
- 2015- Università Campus Bio-Medico di Roma, Internal Project  
2017 **Evaluation of Bone strength and Wnt pathway in obese patients** - Role in the project: Task Leader.

## SCIENTIFIC DUTIES

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### CONFERENCE CHAIR / EDITOR

- 2021
- Chair of the Special Session entitled “Wearable sensors in the era of remote and continuous monitoring of physiological and physical parameters”, at 2021 IEEE International Symposium on Medical Measurements and Applications (MeMeA), June 23-25, 2021. Switzerland, Italy.
  - Associate Editor at IEEE BHI 2021 IEEE International Conference on Biomedical and Health Informatics. July 27-30, 2021, Virtual Conference.
  - Special Session Chair at 2021 IEEE International Workshop on Metrology for Industry 4.0 and IoT, June 7-9, 2021. Rome, Italy. <https://www.metroind40iot.org/organizers>
  - Chair and Organizer of the Special Session entitled “WEARABLE SENSORS AND DEVICES FOR UNOBTRUSIVE PHYSIOLOGICAL MONITORING”, at 2021 IEEE International Workshop on Metrology for Industry 4.0 and IoT, June 7-9, 2021. Rome, Italy.
  - Chair and Organizer of the Special Session entitled “SENSORS AND TECHNIQUES FOR SPORT AND PHYSICAL ACTIVITY”, at 2021 IEEE International Workshop on Metrology for Industry 4.0 and IoT, June 7-9, 2021. Rome, Italy.
  - Organizer of the Special Session entitled “Wearable Sensors”, at the 8th International Electronic Conference on Sensors and Applications, 01-15 November 2021. Virtual Conference. <https://ecsa-8.sciforum.net/>
  - General Chair of IEEE EMBS INTERNATIONAL WORKSHOP ON WEARABLE SENSORS AND DEVICES, ARTIFICIAL INTELLIGENCE AND WEARABLES MARKET (sponsored by IEEE, IEEE EMB, IEEE Italy Section, IEEE Sensors Council Italy Chapter, IEEE Young Professional), November 2021. Virtual Conference. 400+ expected participants. <https://2021sensors.weebly.com>
  - Organizer of the Special Session entitled “Body Sensor Networks in the era of pandemic”, at 2021 IEEE 17th International Conference on Wearable and Implantable Body Sensor Networks (BSN), July 27-30, 2021, Virtual Conference.
  - Organizer of the Special INVITED Session entitled “Wearables to face pandemics: call to action”, at 29th Mediterranean Conference on Control and Automation (MED 2021), June 22-25, 2021 Bari, Puglia, Italy.
- 2020
- General Chair of IEEE EMBS INTERNATIONAL WORKSHOP ON WEARABLE SENSORS AND DEVICES, ARTIFICIAL INTELLIGENCE AND WEARABLES MARKET (sponsored by IEEE, IEEE EMB, IEEE Italy Section, IEEE Sensors Council Italy Chapter, IEEE Young Professional), November 18-19, 2020. Virtual Conference. 685 registered participants.
- 2020
- Organizer of the Special Session entitled “Wearable Sensors”, at the 7th International Electronic Conference on Sensors and Applications, 15-30 November 2020. Virtual Conference.
  - Chair and Organizer of the Special Session entitled “PHYSIOLOGICAL SENSORS AND TECHNIQUES FOR MONITORING SPORT AND PHYSICAL ACTIVITY”, at 2020 IEEE International Workshop on Metrology for Industry 4.0 and IoT, June 3-5, 2020. Rome, Italy.
  - Chair and Organizer of the Special Session entitled “WEARABLE DEVICES FOR PHYSIOLOGICAL MONITORING”, at 2020 IEEE International Workshop on Metrology for Industry 4.0 and IoT, June 3-5, 2020. Rome, Italy.
  - Chair and Organizer of the Special Session entitled “Unobtrusive systems and wearable technologies for medical applications”, at 2020 IEEE International Instrumentation & Measurement Technology Conference (I2MTC), May 25-28, 2020. Dubrovnik, Croatia.
- 2019
- Chair and Organizer of the Special Session entitled “Wearable and unobtrusive monitoring systems for medical applications”, at 14th Annual IEEE International Symposium on Medical Measurements & Applications (MeMeA 2019), June 26-28, 2019. Istanbul, Turkey.
  - Chair and Organizer of the Special Session entitled “Human motion capture sensors, technologies and techniques for Industry 4.0 and IoT”, at 2019 IEEE International Workshop on Metrology for Industry 4.0 and IoT, June 4-6, 2019. Naples, Italy.

- 2018 ● Chair of the Session entitled “Point of Care Technologies and Translation”, at 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), July 17th-21th, 2018. Honolulu, Hawaii, USA.
- 2017 ● Chair and Organizer of the Special Session entitled “Motion Capture measurement systems for medical applications”, at 13th Annual IEEE International Symposium on Medical Measurements & Applications (MeMeA 2018) - Rome, 11 – 13 June 2018.

## CONFERENCE TECHNICAL PROGRAM COMMITTEE

- 2021 ● Organising Committee Member at International Summer School on Wearable Sensors in Sport sponsored by IEEE - Department of Movement, Human and Health Sciences, University of Rome “Foro Italico”, Italy, 14-16 June 2021.
- Associate Editor at IEEE BHI 2021 IEEE International Conference on Biomedical and Health Informatics. July 27-30, 2021, Virtual Conference.
  - Special Session Chair at 2021 IEEE International Workshop on Metrology for Industry 4.0 and IoT, June 7-9, 2021. Rome, Italy. <https://www.metroind40iot.org/organizers>
  - Special Session Chair and Technical Program Committee Member of 2021 IEEE International Workshop on Metrology for Industry 4.0 and IoT, Rome, Italy, 2021.
  - General Chair of IEEE EMBS INTERNATIONAL WORKSHOP ON WEARABLE SENSORS AND DEVICES, ARTIFICIAL INTELLIGENCE AND WEARABLES MARKET (sponsored by IEEE, IEEE EMB, IEEE Italy Section, IEEE Sensors Council Italy Chapter, IEEE Young Professional), November 2021. Virtual Conference. 400+ expected participants. <https://workshopsensors.weebly.com/>
- 2020 ● Special Session Chair and Technical Program Committee Member of 2020 IEEE International Workshop on Metrology for Industry 4.0 and IoT, Rome, Italy, 2020.
- Technical Program Committee Member of 15th Annual IEEE International Symposium on Medical Measurements & Applications (MeMeA 2020), Bari, Italy, 2020.
  - Track Chair and Technical Program Committee Member of 2020 IEEE International Instrumentation & Measurement Technology Conference (I2MTC), Dubrovnik, Croatia, 2020
  - Technical Program Committee Member of 2020 Bulletin of Electrical Engineering and Informatics (BEEI).
- 2019 ● Technical Program Committee Member of 14th Annual IEEE International Symposium on Medical Measurements & Applications (MeMeA 2019), 2019.
- Technical Program Committee Member of International conference on Industrial 4.0 and Artificial Intelligence Technologies (INAIT2019), 2019.
  - Technical Program Committee Member of The Tenth International Conference on Sensor Device Technologies and Applications (SENSORDEVICES 2019), 2019.
  - Technical Program Committee Member of The Thirteenth International Conference on Sensor Technologies and Applications (SENSORCOMM), 2019.
  - Technical Program Committee Member of International Conference on Computational Materials Science and Thermodynamic Systems (CMST 2019), 2019.
  - Committee Member of Special Track "Hospital 4.0" within the 32ST IEEE SYMPOSIUM ON COMPUTER-BASED MEDICAL SYSTEM, 2019.
- 2018 ● Technical Program Committee Member of 13th Annual IEEE International Symposium on Medical Measurements & Applications (MeMeA 2018), 2018.
- Technical Program Committee Member of The Twelfth International Conference on Sensor Technologies and Applications (SENSORCOMM), 2018.
  - Technical Program Committee Member of 11th International Conference on Computational Intelligence and Communication Networks (CICN), 2019.
  - Technical Program Committee Member of 2nd International Conference on Computational Materials Science and Thermodynamic Systems (CMST2019), 2019.
  - Committee Member of Special Track "Hospital 4.0" within the 31th IEEE International Symposium on Computer-Based Medical Systems (CBMS2018) - Sweden, 18 – 21 June 2018.

- 2017 • Technical Program Committee Member of International Conference on Internet of Things, Embedded Systems and Communications (IINTEC 2017), sponsored by IEEE and IEEE ComSoc - Tunisia, 20 – 22 October 2017.

## AWARD COMMITTEE

- 2019 2019 WSES Award Committee Member, Second workshop on electronics for sensors - Sponsored by IEEE Sensors Council Italy Section - Università Campus Bio-Medico di Roma, Rome.

## EDITORIAL DUTIES

- Guest Editor MDPI Sensors Special Issue "Selected Papers from the 2021 IEEE International Workshop on Metrology for Industry 4.0 & IoT".
- Guest Editor MDPI Sensors Special Issue "Wearable and Unobtrusive Technologies for Healthcare Monitoring".
- Guest Editor Computers, Materials and Continua Special Issue "Unobtrusive systems and wearable technologies for medical applications".
- Review Editor on the Editorial Board of Frontiers in Neurorobotics.
- Review Editor on the Editorial Board of Frontiers in Sensors.
- Guest Editor MDPI Sensors Special Issue "Selected papers from the 2020 IEEE International Workshop on Metrology for Industry 4.0 and IoT".
- Guest Editor MDPI Sensors Special Issue "Respiratory Monitoring for Healthcare, Sport and Physical Activity: Sensors, Techniques and Applications".
- Topic Editor for the Research Topic "Radar Signal Processing for Human Sensing: Tracking, Localization, Identity Authentication and Disease Assessment" in Frontiers in Electronics
- Topic Editor for the Research Topic "Wearable Technology for Human Performance" in Frontiers in Physiology
- Associate Editor - Frontiers in Digital Health
- Editorial Board Member of MDPI Sensors (Section: Wearables)
- Editorial Board Member of "Insight-Basic Medicine", "Annals of Advanced Biomedical Sciences (AABSc)", "Advance Research in Textile Engineering",
- Editorial Board Member and Executive Editor of "Peertechz Journal of Biomedical Engineering"
- Associate Editorial Board Member of "The Open Biomedical Engineering Journal"
- Advisory Board Member of "eHealth - Innovazione e Tecnologia in Ospedale"

## MEMBERSHIPS

### Member of:

- ▶ IEEE – Institute of Electrical and Electronic Engineers,
- ▶ EMBS – Engineering in Medicine and Biology Society,
- ▶ IMS - Instrumentation and Measurement Society,
- ▶ ISB – International Society of Biomechanics,
- ▶ IET – The Institution of Engineering and Technology,
- ▶ A.I.B. – Italian Bioengineering Association.

## REVIEWING ACTIVITY

### International Conferences (selected)

- IEEE International Workshop on Metrology for Industry 4.0 and IoT
- IEEE International Symposium on Medical Measurements & Applications - MeMea
- The International Conference on Digital Image and Signal Processing
- The International Conference on Thermal Energy, Systems and Application
- IEEE International Symposium on Computer-Based Medical Systems - CBMS
- International Conference on Computational Intelligence and Communication Networks
- IEEE International Symposium on Biomedical Imaging - ISBI
- IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications
- International Conference on Biological Information and Biomedical Engineering - BIBE



- International Conference on Internet of Things, Embedded Systems and Communications

### Peer-Reviewed Scientific Journals (selected)

Science Cyborg and Bionic Systems - Advanced Functional Materials - Plos One (PLOS) - Annals of Biomedical Engineering (Springer) - Sensors (MDPI) - Bioengineering (MDPI) - Biosensors (MDPI) - Fibers (MDPI) - The Journal of Applied Physiology (APS) - Optical Fiber Technology (Springer) - IEEE Transactions on Instrumentation & Measurement (IEEE) - IEEE Journal of Biomedical and Health Informatics (IEEE) - IEEE Sensors Journal (IEEE) - IEEE Access (IEEE) - Journal of Healthcare Engineering (Hindawi) - Review of Scientific Instruments (AIP Publishing) - American Journal of Sports Science and Medicine (Science and Education Publishing)

### International Grant

- Funding scheme "PRELUDIUM"- National Science Center, Poland (year 2018)
- Funding scheme: "OPUS" Panel: HS6 - National Science Center, Poland (year 2020)

## PRESENTATIONS AND TALKS

### Plenary Speaker

- 2021 • "Wearable Sensors and Unobtrusive Technologies: current trends and future challenges" at EAI HealthWear 2021 - 3rd EAI International Conference on Wearables in Healthcare <https://healthwear-conference.eai-conferences.org/2021/keynote/>
- "Wearable Sensors and Unobtrusive Technologies for Workers Safety" at Automation, Robotics & Communications for Industry 4.0 (ARCI' 2021), 3-5 FEBRUARY 2021. CHAMONIX-MONT-BLANC, FRANCE.
- 2020 • "Wearable Sensors and Unobtrusive Technologies for Biomedical Applications" at Sixth International Conference on Sensors and Electronic Instrumentation Advances (SEIA' 2020), September 23-25, 2019. Porto, Portugal.

### Invited Speaker : Presentations and Talks

- 2021 • Carlo Massaroni, "Wearable Sensors and Unobtrusive Technologies: current trends and future challenges" at EAI HealthWear 2021 - 3rd EAI International Conference on Wearables in Healthcare.
- Carlo Massaroni, "Sensors and techniques for respiratory monitoring", International Summer School on Wearable Sensors in Sport - Department of Movement, Human and Health Sciences, University of Rome "Foro Italico", Italy, 15 June 2021.
- 2020 • Carlo Massaroni, "Wearable devices based on fiber optic sensors for physiological monitoring of workers", LIMS 2020 - Luce, Imaging, Microscopia, Spettri di applicazione, organized by ENEA (National Agency for New Technologies, Energy and Sustainable Economic Development). 22 October 2020. Rome, Italy. For details: <https://www.enea.it/it/seguici/events/2020/convegno-lims-2020/ProgrammaLIMS2020.pdf>
- 2020 • Carlo Massaroni, "Contactless technology for vital signs monitoring", Master RehabTech "Tecnologie per l'innovazione in medicina riabilitativa e per l'assistenza" (EN: "Technologies for innovation in rehabilitation medicine and care"). Politecnico di Milano. For details: <https://www.rehabtech.polimi.it>
- Carlo Massaroni, "Wearable Sensors and Unobtrusive Technologies for Biomedical Applications", SEIA 2020 : 6th International Conference on Sensors and Electronic Instrumentation Advances. Sep 23, 2020 - Sep 25, 2020. Porto, Portugal. For details: <https://seia-conference.com/programme.html>

- 2018 ● Carlo Massaroni, “Wearables Sensors applied to the physical activities evaluation”, I Simpósio Internacional em Análises Biomecânicas e Fisiológicas da Atividade Física e do Esporte, Escola de Educação Física, Fisioterapia e Terapia Ocupacional (EEFFTO). 20 August 2018. Universidade Federal de Minas Gerais, Brasil.
- Carlo Massaroni, “Optoelectronic plethysmography and wearables sensors to evaluate trunk compartmental volumes”, I Simpósio Internacional em Análises Biomecânicas e Fisiológicas da Atividade Física e do Esporte, Escola de Educação Física, Fisioterapia e Terapia Ocupacional (EEFFTO). 21 August 2018. Universidade Federal de Minas Gerais, Brasil.
- Carlo Massaroni, “Optoelectronic plethysmography and wearables sensors to evaluate trunk compartmental volumes”, I Simpósio Internacional em Análises Biomecânicas e Fisiológicas da Atividade Física e do Esporte. 17 August 2018. Univiçosa, Brasil.
- Carlo Massaroni, “Wearables Sensors applied to the physical activities evaluation”, I Simpósio Internacional em Análises Biomecânicas e Fisiológicas da Atividade Física e do Esporte. 18 August 2018. Universidade Federal de Viçosa, Brasil.

### International Conferences

- 2020 ● “Respiratory monitoring during cycling exercise: Performance assessment of a smart t-shirt embedding fiber optic sensors” at 2020 Workshop on Metrology for Industry 4.0 and IoT (MetroInd4.0&IoT), June 4-6, 2020. Rome, Italy.
- “Influence of torso movements on a multi-sensor garment for respiratory monitoring during walking and running activities” at 2020 IEEE International Instrumentation and Measurement Technology Conference (I2MTC).
- 2019 ● “Comparison of two methods for estimating respiratory waveforms from videos without contact”, at 2019 IEEE International Symposium on Medical Measurements and Applications (MeMeA), June 26-28, 2019. Istanbul, Turkey.
- “Force monitoring during Peripheral Nerve Blocks: design and feasibility assessment of a new noninvasive system” at 2019 II Workshop on Metrology for Industry 4.0 and IoT (MetroInd4.0&IoT), June 4-6, 2019. Naples, Italy.
- 2018 ● “A Touchless system for image visualization during surgery: preliminary experience in clinical settings,” at 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), July 17th-21th, 2018. Honolulu, Hawaii, USA.
- “Multi-sensitive FBG-based needle for both relative humidity and breathing rate monitoring,” at 2018 IEEE International Symposium on Medical Measurements and Applications (MeMeA), Rome, Italy.
- “Measurement system based on RGB camera signal for contactless breathing pattern and respiratory rate monitoring,” at 2018 IEEE International Symposium on Medical Measurements and Applications (MeMeA), Rome, Italy.
- 2017 ● “Assessment of breathing volumes and kinematics by motion capture systems: Comparison of protocols,” at 2017 IEEE International Instrumentation and Measurement Technology Conference, May 22nd-25th, 2017. Turin, Italy.

- 2016 • “Temperature monitoring during Laser Ablation by FBG sensors encapsulated within a metallic needle: Experiments on healthy swine tissue,” at IEEE International Symposium on Medical Measurements and Applications (MeMeA), May 07th-09th, 2016. Turin, Italy.
- “A novel tool and procedure for in-situ volumetric calibration of motion capture systems for breathing analysis,” at 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), August 16th-20th, 2016. Orlando, Florida, USA.
- “Design and preliminary assessment of a smart textile for respiratory monitoring based on an array of Fiber Bragg Gratings,” at 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), August 16th-20th, 2016. Orlando, Florida, USA.
- “A cost-effective, non-invasive system for pressure monitoring during epidural needle insertion: Design, development and bench tests,” at 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), August 16th-20th, 2016. Orlando, Florida, USA.
- “An in-situ tool to calibrate optical motion capture system for breathing analysis” at 22nd Congress of the European Society of Biomechanics, July 10th-13rd, 2016. Lyon, France.
- “Breathing Analysis During Exercise: Comparison Between Optoelectronic System and Breath-By Breath Analyzer,” at 22nd Congress of the European Society of Biomechanics, July 10th-13rd, 2016. Lyon, France.
- 2015 • “Design and characterization of a measurement system for monitoring pressure exerted by bronchial blockers: in vitro trials,” at 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), August 25th-29th, 2015. Milan, Italy.

#### National Congresses or Workshops

- 2019 • “Piezoresistive sensors for smart garment development” (GMMT Session, Selected paper). III FORUM NAZIONALE DELLE MISURE, September 12-14th, 2019. Perugia, Italy.
- 2018 • “Fiber optics for smart garment development” (GMMT-GMME Joint Session, Selected paper). II FORUM NAZIONALE DELLE MISURE, September 17-19th, 2018. Università degli Studi di Padova, Padova, Italy.
- 2015 • “Sonda ad ago per risonanza magnetica” (GMEE-GMMT Joint Session, Selected paper). XIV Convegno Nazionale “Gruppo di Misure Meccaniche e Termiche” (GMMT), September 10th-12nd, 2015. Politecnico di Milano, Lecco, Italy.
- 2013 • “Validazione preliminare di un simulatore dell'apparato respiratorio per l'analisi di caratteristiche metrologiche di un pletismografo optoelettronica” (Best Thesis Award). XIV Congresso Nazionale SIAMOC, September 26th-28th, 2013. Pisa, Italy.

## PARTICIPATIONS AT CONFERENCES AND WORKSHOPS

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- 2021 • 2021 IEEE International Symposium on Medical Measurements and Applications (MeMeA), June 13-15, 2021. Switzerland.
- 2021 IEEE International Summer School on Wearable Sensors in Sport - Department of Movement, Human and Health Sciences, University of Rome “Foro Italico”, Italy, June 2021.
- 2021 IEEE International Workshop on Metrology for Industry 4.0 and IoT (MetroInd4.0), June 2021. Rome, Italy.

- 2020
  - IV FORUM NAZIONALE DELLE MISURE, September 12-14th, 2020. Giardini Naxos, Italy.
  - 2020 IEEE International Conference on Flexible and Printable Sensors and Systems (FLEPS 2020), August 16-19, 2020. Manchester, UK.
  - 2020 IEEE MELECON 2020, June 16-18, 2020. Palermo, Italy.
  - 2020 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), May 26nd-28th, 2020. Dubrovnik, Croatia.
  - 2020 IEEE International Workshop on Metrology for Industry 4.0 and IoT (MetroInd4.0), June 03rd-05th, 2020. Rome, Italy.
- 2019
  - 2019 IEEE SENSORS 2019, October 27-30, 2019. Montreal, Canada.
  - III FORUM NAZIONALE DELLE MISURE, September 12-14th, 2019. Perugia, Italy.
  - Second workshop on electronics for sensors - Sponsored by IEEE Sensors Council Italy Section, September 17th, 2019. Università Campus Bio-Medico di Roma, Rome.
  - 2019 IEEE International Symposium on Medical Measurements and Applications (MeMeA), June 26th-28th, 2019. Istanbul, Turkey.
  - 2019 IEEE International Workshop on Metrology for Industry 4.0 and IoT (MetroInd4.0), June 03-05, 2019. Naples, Italy.
- 2018
  - 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), July 17th-21th, 2018. Honolulu, Hawaii, USA.
  - 2018 IEEE International Symposium on Medical Measurements and Applications (MeMeA), June 10th-13th, 2018. Rome, Italy.
- 2017
  - 2017 IEEE International Instrumentation and Measurement Technology Conference, May 22nd-25th, 2017. Turin, Italy.
- 2016
  - 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), August 16th-20th, 2016. Orlando, Florida, USA.
  - 22nd Congress of the European Society of Biomechanics, July 10th-13rd, 2016. Lyon, France.
- 2015
  - 2015 IEEE International Symposium on Medical Measurements and Applications (MeMeA), May 07th-09th, 2016. Turin, Italy.
  - 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), August 25th-29th, 2015. Milan, Italy.

## COLLABORATIONS

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### Universities (selected)

- Università Foro Italico di Roma, Roma (Italy) - Dr. Nicolò, Prof. Sacchetti
- Università La Sapienza di Roma, Roma (Italy) - Prof. Tamburrano, Prof. Sarto
- Università Roma Tre, Roma (Italy) - Prof. Sciuto, Dr. Scorza, Dr. Maiorana
- Università della Calabria (Italy) - Prof. Raffaele Gravina
- Università degli Studi di Napoli Parthenope, Napoli (Italy) Prof. Campopiano, Prof. Iadicicco
- Politecnico di Milano, Milano (Italy) - Prof. Baroni, Prof. Cerveri - Prof. Saccomandi
- Politecnico di Torino, Torino (Italy) - Prof. Vallan, Prof. Perrone
- University of Kent, United Kingdom (UK) - Dr. Winter, Dr. Dickinson
- Universidade Federal de Viçosa, Brasile - Prof. Silvatti
- Nazarbayev University, Kazakhstan - Prof. Tosi
- University of Dublin, Trinity College, Ireland - Dr. Maji
- University of Warwick, United Kingdom - Prof. Leandro Pecchia
- University of Dhaka, Bangladesh - Dr. Shekh Md Mahmudul Islam

### Research Institutes (selected)

- IRCCS Eugenio Medea, Conegliano (TV, Italy) - Dr.ssa Carraro, Dr. Conte
- ENEA Research Center, Frascati (Italy) - Dr. Caponero, Dr. Polimadei, Dr. D'Amato
- INESC-ID Lisboa (Portugal) - Dr. Lopes

**Companies (selected)**

- Lets – Webearable Solutions s.r.l.
- Integris S.p.A.
- RDS Lab s.r.l.
- RESI Informatica S.p.A.

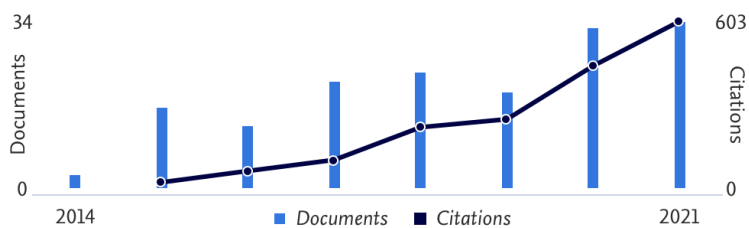
**PUBLICATIONS**

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Author of 72 papers on peer-reviewed scientific journals, 71 papers on conference proceedings and one book chapter. (Source: Scholar)

Scopus Author ID: 56230824500, ResearcherID: M-4797-2017

Scholar - Citations: 2164, H-index: 25



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Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 “Codice in materia di protezione dei dati personali”.

Date

**Rome, 10 October 2021**

Signature