

## *CV of Zaccaria Del Prete (short)*



Zaccaria Del Prete is **Full Professor of Mechanical & Thermal Measurements** at **SAPIENZA University of Rome**, and **head of the Industrial Measurements (MM&T) Lab** of the Mechanical and Aerospace Department. He is coordinating a team of about 10 persons: 2 RTD (researcher), 3 Post-Docs, 5 PhD students and 1 technician. He is also a **founder and the coordinator of the Tissue Biomechanics Lab** at the Histology and Medical Embryology Department of the same university. He is currently **supervisor or tutor** of 2 PhD students in **Tissue Biomechanics**, 3 PhD students in **Industrial and Biomedical Measurements** and of 5 MSc theses in Mechanical and Biomedical Engineering.

He serves since 3 years as **Chairman of the Clinical and Biomedical Engineering programs** at SAPIENZA University ([https://web.uniroma1.it/cdaingclinica\\_biomedica/](https://web.uniroma1.it/cdaingclinica_biomedica/)), one of the largest Biomedical Engineering Schools in Italy, with 1000+ undergraduate students in Clinical Engineering and 400+ graduate students in Biomedical Engineering. He is also on the founding committee at SAPIENZA University of the new double degree course **High Tech Medicine (Medicina HT)** (<https://corsidilaurea.uniroma1.it/it/corso/2020/30789/home>), which combines the traditional Graduate Degree in Medicine and Surgery with the Bachelor's Degree in Clinical Engineering. This unique new double degree started in year 2020 with 50 students chosen from 250+ applications.

During the past 25 years he served on many **Department and Faculty Committees** for research, teaching and administrative purposes at SAPIENZA University. He holds since 20 years the fundamental course of **Mechanical and Thermal Measurements** for both the MSc degree in Mechanical and Energy Engineering, and he founded 10 years ago the course of **Tissue Engineering and Biomechanics Lab** for the MSc degree of Biomedical Engineering. He also taught for 6 years at the Biotechnology School a graduate course about **Biologic and Engineered Tissue Characterization**. He gave **invited lectures** in leading Institutions such as CLNS-IIT in Rome, TUB in Braunschweig (DE), TUE in Eindhoven (NL), WPI and Umass Medical School in Worcester (USA), FC-Cubic in Tokyo (JP).

He graduated in Mechanical Engineering in 1990 with top marks and won in 1992 the competition for tenure-track **University Researcher** at SAPIENZA University. In year 2000 he became **Associate Professor** and in year 2010 **Full Professor in Mechanical and Thermal Measurements** at the same university. In 1996 he spent a 6 month visiting period at the Biomedical Engineering Department of the **Worcester Polytechnic Institute (USA)**, while in 1999 he was **invited researcher** for 6 months at the Neurophysiology Lab of the **Umass Medical School in Massachusetts (USA)**. He spent also shorter periods as **invited scientist** in 2007 at the FC-Cubic, Tokyo (JP) and in 2013 at the Technical University in Eindhoven (NL).

His research interests ranged over 30 years from *mechanical strain and fatigue measurements to industrial and biomedical sensor prototyping* in the **Industrial Engineering field**; from *static and dynamic characterization of Fuel Cell systems to measurement protocols for electric energy storage systems based on lithium batteries* in the **Energy Engineering field**; from *in vitro flow stream analysis through artificial cardiac valve by PIV to mechanoreceptor neurons coding mechanism and mechanical properties*

*of viscoelastic biological soft tissue, ending up with tendon and ligament bio-mechanical characterization and transgenic muscle tissue engineering in the Biomedical Engineering field.* He authored over **90 journal publications** (Scopus) and **2 Book Chapters**. He is co-inventor of **2 Patents**. He has been **PI or co-PI in several successful research grants**: 2001 from FIRB; 2003 from NIH USA; 2011 from the PNRM (FAR SEAS); 2020 from EU-PENTA (Sentinel). He received also around 15 University Research Grants and many funding from private companies and organizations for applied and industrial research. Overall, **he was involved in research projects accounting a total budget of 5+ M€**. He served as co-organizer for international congresses: **Special Session Chair of IEEE MeMeA 2016** and **General Chair of IEEE MeMeA 2018**; **TP Committee member for IEEE MetroInd4.0&IoT 2020**. He regularly serves as a **reviewer for International Conferences**, and for **15+ International Scientific Journals**. He was appointed twice to serve as a **reviewer for grant proposals** in Italy (PRIN grant). He was twice on the Committee for the **National State Exam for Engineers** (1995 and 2002). In 2018 he has been nominated in the **Commission for the National Scientific Qualification (ASN) to the functions of Full and Associate Professor, competition sector 09/E4 - Measurements**, in execution of judicial procedures. In 2018 and 2019 he served in the **Committee for the National Public Competition for 50 Engineer Professional Positions, at the Customs and Monopoly Agency (ADM) - Ministry of Finance**. He is an active member of the **IEEE-IMS Instrument and Measurement Society**.

#### **Bibliometric indicators on Dec 2020 (Scopus):**

- Journal papers: 92
- Citations: 904
- H-index: 14

#### **Publication list:**

IRIS Sapienza:

[https://iris.uniroma1.it/browse?type=author&authority=rp48312&sort\\_by=2&order=DESC#.X7-cCc1KiUk](https://iris.uniroma1.it/browse?type=author&authority=rp48312&sort_by=2&order=DESC#.X7-cCc1KiUk)

ORCID:

<https://orcid.org/0000-0001-6057-7774>

#### **Track-record**

##### **EDUCATION**

- 1983 – 1990 "Laurea" Graduate Degree (grades 110/110) in Mechanical Engineering from SAPIENZA University of Rome
- 1991 Qualified at the Engineering Practice State Exam in year 1991

##### **CURRENT POSITIONS**

- 2011 – today Full Prof of Mechanical and Thermal Measurements, SAPIENZA University of Rome

##### **PREVIOUS POSITIONS**

- 2000 – 2011 Associate Prof of Mechanical and Thermal Measurements, SAPIENZA University of Rome
- 1992 – 2000 Tenure-track Assistant Prof of Mechanical and Thermal Measurements, SAPIENZA University of Rome
- 1999 Visiting Scientist for 6 months at the Physiology Department of the "University of Massachusetts Medical School", USA
- 1996 Visiting Researcher for 6 month at the Department of Biomedical Engineering, "Worcester Polytechnic Institute" Massachusetts, USA
- 1990 – 1992 Post-doc in Clinical Engineering, Children Hospital "Bambin Gesù", Rome

##### **FELLOWSHIPS AND AWARDS**

- 2010 Finalist at PhD Student Paper Competition, 2010 Summer Bioengineering Conference ASME, Florida USA (supervised by Z Del Prete)

- 2017 Best Electronic & Mechanical Measurement Paper at the National Measurement Forum 2017, Benevento
- 2020 Best Paper Award at the IEEE International Symposium on Medical Measurements and Applications, MeMeA 2020, Bari

#### **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

- 1997 – today 3 Post-Docs ongoing (10+ completed), 5 PhD students ongoing (20+ graduated), 2 Teaching Assistants ongoing (10+ completed), 5 MSc thesis ongoing (50+ graduated, 20 with honors), 10+ visiting students supervised

#### **TEACHING ACTIVITIES**

- 2003 – today Teacher of “Mechanical and Thermal Measurements” for MSc students in Mechanical and Energy Engineering, SAPIENZA University of Rome (9 ECTS)
- 2013 – today Teacher of “Tissue Engineering and Biomechanics Lab” for MSc students in Biomedical Engineering, SAPIENZA University of Rome (6 ECTS)
- 2010 – 2018 Teacher of “Thermomechanical Measurements for Energy Systems” for MSc students in Energy Engineering, SAPIENZA University of Rome (9 ECTS)
- 2011 – 2016 Teacher of “Biologic and Engineered Tissue Characterization” for MSc students in Medical Biotechnology, SAPIENZA University of Rome (3 ECTS)
- 2005 – 2009 Teacher of “Industrial Measurements” for MSc students in Mechanical Engineering, SAPIENZA University of Rome (6 ECTS)
- 2000 – 2005 Teacher of “Mechanical and Thermal Measurements” for the old 5-years Laurea degree and, from 2003, for the BSc students in Mechanical Engineering, SAPIENZA University of Rome (5 ECTS)
- 1997 – 2000 Teacher of “Measurements and Industrial Instrumentation” for BSc students of the Mechanical Eng Diploma, SAPIENZA University of Rome (5 ECTS)
- 1992 – 1996 Instructor of Lab Seminars for the courses of “Mechanical and Thermal Measurements” and “Biomedical Instrumentation” for the old 5-years Laurea degree at SAPIENZA University of Rome

#### **ORGANISATION OF SCIENTIFIC MEETINGS**

- 2020 Program Committee member, IEEE MetroInd4.0 & IoT 2020
- 2018 General Chair of the MeMeA 2018 - IEEE International Symposium on Medical Measurements and Application
- 2016 Special Session Chair at the MeMeA 2016 - IEEE International Symposium on Medical Measurements and Application
- 2010 General Co-Chair of the MMT 2010 - VIII National Congress of Mechanical and Thermal Measurements

#### **INSTITUTIONAL RESPONSIBILITIES**

- 2017 – today Chairman of the Clinical and Biomedical Engineering Programs at SAPIENZA University of Rome, with 1000+ undergraduate and 400+ graduate students
- 2019 – today Delegate of the Civil and Industrial Engineering School for freshmen orientation on university engineering courses
- 2016 – today Head of the “Industrial Measurements Lab” (MM&T Lab) at the Department of Mechanical and Aerospace Engineering, SAPIENZA University of Rome
- 2010 – today Founder and Coordinator of the “Tissue Biomechanics Lab” at the Department of Histology and Medical Embryology, SAPIENZA University of Rome
- 2003 – today Senior member of the Faculty Board, PhD program in “Industrial and Management Engineering” at SAPIENZA University of Rome
- 2007 – 2014 Member of the Faculty Board, PhD program in “Science, Technology and Measurements in Space” at the Centre of Studies for Space Activities (CISAS) of the University of Padua
- 2013 – 2016 Chairman of the Joint Students-Teacher Board of the Civil and Industrial

- Engineering School, SAPIENZA University of Rome
- 2005 – 2011 Member of the Steering Committee of the Mechanical and Aeronautical Engineering Department at SAPIENZA University of Rome
- 2008 – 2012 Elected member of the Didactic Committee at the Engineering School, representing all the Associate Profs of the Engineering School
- 2006 – 2014 Chairman of the ERASMUS international exchange program for the Mechanical Engineering study course
- 2002 – 2010 Chairman of the Stage and External Relations Committee of the Mechanical Engineering study course
- 2004 & 2006 Elected Committee member in two national competition for Associate Profs positions, SSD ING-IND/12, at the Milan Polytechnic University and the “Biomedical Campus” University of Rome
- 1995 & 2002 Nominated twice member of the State Examinations Commission for practice of the profession of Mechanical Engineer
- 1992 – today Member of the council of the Mechanical and Aerospace Department, SAPIENZA University of Rome

#### **COMMISSIONS OF TRUST**

- 2020 – today Guest Editor, Special Issues on “Portable Systems for Diagnostics and Monitoring Applications”, Special Issue on MDPI Sensors Journal
- 2000 – 2016 Reviewer of research proposals submitted in Italy, Netherlands and USA
- 1997 – today Member of committees for awarding PhD, MSc and BSc degrees at SAPIENZA University of Rome, Universities of L’Aquila and Padua, Technical University of Eindhoven (NL), University of Massachusetts Medical School (USA)
- 1995 – today Reviewer for 15+ intl. scientific journals, including IEEE TIM TBME, Sensors, Measurements, Sensors & Actuators A, Experimental Mechanics, Experimental Techniques, Review of Scientific Instruments.

#### **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

- 1992 – today Senior member, National Mechanical and Thermal Measurements Group (MM&T)
- 2015 – today Senior Member, IEEE – IMS Instrument and Measurement Society
- 1997 – 1999 Member, IEEE – EMB Engineering in Medicine and Biology Society
- 1991 – 1998 Member, SEM Society for Experimental Mechanics