

# GERMAK Alessandro Franco Lidia

## CURRICULUM VITAE

### 1. Personal information:

- Address: Strada Bricco Sossi 3, 14017 Valfenera (AT)
- E-mail: a.germak@inrim.it
- Nationality: Italian
- Date of Birth: 17/12/1962
- Marital Status: married with two daughters

### 2. Education:

- In 2000, University, Master's degree in Computer Science at the University of Turin (Italy)
- In 1982, high diploma in TC-IT at Technical Training Centre for Information Technology, Turin (Italy)
- In 1981, dipl. Eng. in mechanics at the “E. Agnelli” Technical School of Turin (Italy)

### 2. Present position at INRIM (Istituto Nazionale di Ricerca Metrologica)

- Elected member of the Scientific Council
- Head of “Mass and related quantities” Scientific Sector of the “Applied metrology and engineering” Division
- Head of Force, Hardness and gravimetry Project
- Responsible for the primary standards of force, hardness and absolute gravimetry

### 3. Years within the firm:

- 38 (INRIM and formerly CNR-IMGC)

### 4. Personal skills and competencies:

- *Language skills:*
  - Italian: mother language
  - English: good spoken / written (C1)
  - French, Spanish, Portuguese: basic understanding
- *Interpersonal skills and competences:*

In the context of my educational, professional and extra-professional experience, I have acquired an aptitude for teamwork but also the ability to work independently. Strong flexibility, listening skills, aptitude for planning, project management skills, predisposition to the pursuit of established objectives, compliance with project deadlines and excellent willingness to deal with any problems that arise.
- *Organizational skills and competences:*

As part of my educational, professional and extra-professional experience, I have acquired skills in organization and leadership (currently responsible for several national and European research projects and chairman of national and international technical committees and working groups).
- *Technical skills and competences:*

Relevant understanding of quality control processes (quality manager in my field, ACCREDIA technical assessor and teacher in ISO 9000 and ISO 170125 quality courses). Excellent knowledge of the main PC software applications for automation, programming, calculation and simulation.
- *artistic skills and competences:*

Skills in music (plays piano and guitar) and in drawing.
- *Other skills and competences:*

I enjoys sailing, downhill skiing, swimming, and occasionally other sports (tennis, canoeing, cycling, etc.).

### 5. Membership of professional bodies

- *Committee for Mass and related quantities (CCM) (Comité International des Poids et Mesures - CIPM):*

- Member of several Working Groups:
  - WG on Hardness (Chairman from 1998 to 2014),
  - WG on Gravimetry (Chairman from 2014 to 2018),
  - WG on Force,
  - WG on Strategy.
- Technical expert, since 2002, for attending the CCM meetings.
- *European Association of National Metrology Institutes (EURAMET):*
  - Member of Technical Committees Mass (TC-M), Sub-Committee Force.
  - Member of the TC-M Working Group on Strategy
  - Reviewer of Technical Committees Mass (TC-M) for the Calibration Measurement Capabilities in the field of Hardness and Gravimetry,
  - 2007-2020, Contact Person for TC-AUV Sub-Committee Acceleration and Vibration.
- *International Measurement Confederation (IMEKO):*
  - Italian representative since 2005,
  - Member and secretary of the Advisory Board,
  - Member of Technical Committees TC3 – Force/Torque and TC5 – Hardness.
- *Standardization:*
  - Italian delegate from UNI (national standardization body) at ISO-TC164/SC3 (Mechanical Testing of Metals - Hardness and Force),
  - 2005-2018, vice-president of UNIMET (affiliate to the Italian standardization body - UNI),
  - Since 2001, president of Joint Subcommittee UNIMET/UNSIDER - "Methods of mechanical testing of metallic materials".
- *International Association of Geodesy (IAG):*
  - 2003-2014, member of the SG 2.1: Comparisons of Absolute Gravimeters,
  - 2008-2017, Member of IC-WG 2.1 on Absolute Gravimetry,
  - 2007-2017, Member of the JWG 2.1: Techniques and Metrology in Absolute Gravimetry (Joint with the IGFS),
  - 2012-2016, Member of JWG 2.1: Techniques and Metrology in Absolute Gravimetry,
  - 2012-2016, Corresponding member of JWG 2.2: Absolute Gravimetry and Absolute Gravity Reference System,
  - 2015-2018, Member of the SG 2.1.1: Techniques and metrology in terrestrial (land, marine, airborne) gravimetry,
  - 2016-2018, Corresponding member of JWG 2.1.1: Establishment of a global absolute gravity reference system,
  - Since 2018, Corresponding member of JWG 2.1.1: Establishment of the International Gravity Reference Frame.
- *European Geosciences Union (EGU):*
  - Since 2018, Regular Member of EGU - European Geosciences Union.

## 6. Teaching and tutoring

- National Academic Qualification as Associate Professor SECTOR 09/E4, Measurements (until 27/11/2023)
- *Polytechnic (Technical University) of Turin:*
  - Since 2001/02, adjunct professor at the Polytechnic of Turin for the course "*Experimental Statistics and mechanical measurements*",
  - Since 2001/02 invited Member of the College of Mechanical, Aerospace, Automotive and Production Engineering.
  - In 2002/03, adjunct professor for the course "*General Mechanical Metrology*",
  - In 2011, member of the PhD boarding school in Metrology,
  - In 2003/04, 2004/05, 2005/06, tutor of a PhD. student in Metrology with a thesis on "Development and metrological characterization of a new transportable absolute gravimeter",
  - In 1999/2000 and 2000/01, course tutor "*Measurements and quality control in manufacturing engineering*",

- In 1987-88, 1988-89 and 1990-91, assistant to the exercises of the course "*General Metrology and Mechanical Measurements*".
- *Extensive experience teaching in postgraduate courses in mechanical metrology and Quality on measurements:*
  - from 2012 by TÜV Italia Akademie (ISO/IEC 17025 and ISO/IEC 9001)
  - in 1999-2005 by EMITLAS (Milan) (hardness measurements)
  - in 2001-2002 by ATS (Turin) (Metrology in production)
  - in 1991, 1992 and 1998 by COREP (Turin) (uncertainty in measurements)

## 7. Professional experiences

- *Italian National Institute of Metrological Research (INRIM) (formerly Institute of Metrology "G. Colonnetti" (IMGC) of CNR):*
  - working since 1983, currently as "*primo tecnologo*" (First Technologist),
  - from February 2019, head of Mass and related quantities Scientific Sector
  - from February 2019, head of Force, Hardness and gravimetry Projects
  - from April 2018 to January 2019, head of Head Mechanics Programme of Innovation and Metrology Services
  - Jun 2007 – Apr 2015, head of the Dynamometry Programme,
  - Jan 2006 - Jun 2007, head of Dynamometry Section,
  - May 2005 - Dec 2005, head of CNR "*Commessa*" (SP. P09. 003) "*Innovative measurement methods and applications (tools and stations) for dynamometric metrology*" (formerly "*Dynamometry Division*" of IMGC-CNR),
  - Apr 2005 - Dec 2005, research group leader on force and torque, hardness, vibration and absolute gravity measurements,
  - 1999 - Mar 2005 research group leader "*Special Mechanical Measurements* " (hardness, gravimetry and vibration),
  - 1995 - 1998 research group leader of "hardness measurements",
  - Since 2005, responsible of Force national primary standards,
  - Since 1996, responsible of Hardness national primary hardness scales,
  - Responsible in several research contracts with public and private bodies in the field of force, hardness, vibration and gravity acceleration measurements.
- *Several experiences in abroad National Metrology Institutes (NMIs):*
  - 1995 and 2000 (one month each), at CSIRO (Australia) for a cooperation in hardness field
  - 1996, 1998, 2000, 2005 (two-three weeks each) at INMETRO (Brazil) for organizing the traceability system in hardness measurements and to install a new lab with primary hardness standard machines,
  - 1992 (one month) at NIST (USA) to develop the new USA national primary hardness machine,
  - 1990 (three months) in "*Mario Zucchelli*" Base (Terra Nova Bay-Antarctica) to perform the first absolute gravity measurement in Antarctic region.
- *Several experiences on absolute gravity measurements (in Italy, Greece, Germany, Antarctica, Panama).*
- *Peer reviewer activity in other NMIs:*
  - 2014 and 2019, at force, torque and hardness laboratories of National Metrology Institute - INMETRO (Brazil),
  - 2015 and 2018, at hardness and gravimetry laboratories of National Metrology Institute - CENAM (Mexico),
  - 2016 at force and torque laboratories of National Metrology Institute - IPQ (Portugal),
  - 2011 at force laboratory of National Metrology Institute – CEM (Spain).
- *Technical expert in the assessment of laboratories for national accreditation bodies:*
  - Since 1995, for the Italian accreditation body-ACCREDIA for the assessment of calibration Laboratories in the field of hardness, force and torque,
  - Since 2019 for the Emirates International Accreditation Centre (EIAC) for the assessment of several laboratories in the field of force, torque and hardness,
  - Since 2014 for the Israeli accreditation body (ISRAC) for the assessment of several laboratories in the field of force, torque and hardness,

- In 2010, 2011, 2014, 2018, for the Turkish accreditation body (TURKAK) for the assessment of UME laboratories in the field of force and hardness,
- In 2013, for the Romanian accreditation body (BAS) for the assessment of a laboratory accredited in the field of force and hardness,
- In 2004, 2005 and 2006, for the UK accreditation body (UKAS) for the assessment of NPL laboratory accredited in the field of hardness.

## 8. Key qualifications:

- responsible of force and hardness national scales,
- responsible of primary measurement of acceleration due to gravity in Italy,
- technical Expert for the Italian accreditation body (ACCREDIA, formerly SIT) for hardness, force and laboratories (since 1994),
- chairman of the CCM-Working Group on Gravimetry (CCM-WGG) (from 2014 to 2019),
- chairman of the CCM-Working Group on Hardness (CCM-WGH) (from 1998 to 2014),
- adjunct Professor at Polytechnic of Turin (University of Turin) “Experimental Statistics and mechanical measurements” (since 2001),
- adjunct Professor at Polytechnic of Turin (University of Turin) “General mechanical metrology” (2003),
- Lecturer at Polytechnic of Turin (University of Turin) “Quality measurement and control in mechanical production” (2000),

## 9. Other relevant information:

- *Contracts:*
  - 2019-2023: INRIM responsible an EMRP research contract “Force Metrology - Force Traceability within the Meganewton Range”
  - 2019: INRIM responsible for the Know-how license agreement with EASYDUR Company for the industrial application of a multicomponent hexapod shaped force transducer (royalties)
  - 2017: INRIM responsible for the Know-how license agreement with LTF Company for the realization of a hardness primary machine (royalties)
  - 2015-2017: INRIM responsible for an EMPIR research contract “EMPIR Strength-ABLE (Metrology for length-scale engineering of materials)”
  - 2013-2016: INRIM responsible and WP leader for an EMRP research contract “Force Metrology - Force Traceability within the Meganewton Range”
  - 2012-2016: INRIM responsible for a MIUR research contract “NO FALLS”
  - 2011-2015: INRIM responsible of Operative Unit of the SWAD Project SWAD (Liguria Region)
  - 2011-2013: INRIM responsible for an EMRP research contract “MEPROVISC - dynamic mechanical properties and long-term deformation behaviour of viscous materials”
  - 2005-2007: IMGC-CNR responsible for several contracts (Polytechnic University of Marche, SMI, OMECO) for the “Metrological Characterisation of the Primary Force Standard”
  - 2004-2007: IMGC-CNR responsible for an industrial contract (Società Cooperativa Bilanciai) for the “evaluation of the metrological characteristics and the stability of the Lever Amplification Force Machine – 600 kN and of the Dead-Weight Force Standard Machines OF 12 kN AND 1 kN”
  - 2006: IMGC-CNR responsible for an industrial contract (LTF), for the “Characterisation of a Primary Hardness Standards for UME (Turkey), NIM (China), NCM (Bulgaria)
  - 2005: IMGC-CNR responsible for an industrial contract (LTF) for the “Realization and characterisation of a Primary Hardness Standard for INMETRO (Brazil)
  - 2003: IMGC-CNR responsible of a contract with the public Institute Osservatorio Vesuviano, section of Naples of the Istituto Nazionale di Geofisica e Vulcanologia (INGV) for “Absolute measurements of gravity acceleration”
  - 1996-99: IMGC-CNR responsible for a EU contract “Mechanical tests for advanced technical ceramics (CERANORM)”
  - 2001: IMGC-CNR responsible for an industrial contract (COORD3) for the “Development of a new control of an absolute gravimeter”
  - 1996-98: IMGC-CNR responsible for an EU contract “Worldwide unified scales: Rockwell hardness test with conical indenter”
  - *Scientific cooperation:* - 1996-2000: responsible for the Italy-USA cooperation project (CNR / IMGC-NIST) on the comparison and development of national hardness scales
  - 1997: collaboration with the National Institute of Technology (INT) of Rio de Janeiro for training activities of Brazilian technicians in hardness field
  - 1998-2002: consultant for t hardness measurement reference system for the Instituto Nacional de Metrologia, Normalização and Qualidade Industrial (INMETRO), Rio de Janeiro (Brazil)

- 2002: consultant at the Metrological Institute of Turkey (UME) for the design and construction of new hardness sample machines
- 2004: independent expert of the European Community for the revision of the technical specifications of the Phare tender BG 0201.12.03 "Supply of Equipment for Standardization and Metrology in Bulgaria"
- 2010: INRIM responsible in a project with IMETRO (Brazil) for the construction of a new force-testing machine
- In the gravimetry field, he develops several formal collaborations with national and foreign institutes for measuring campaigns and for the development of new absolute gravimeters:
  - National Institute of Geophysics and Volcanology, sections of Rome, Naples and Catania
  - Panamanian Metrological Institute (CENAMEP)
  - Bureau International des Poids et Mesures (BIPM),
  - D.I. Mendeleev Institute for Metrology, of Russia (VNIIM)
  - Center Européen de Géodynamique et de Séismologie (ECGS), Luxembourg
- *Review and editor:*
  - he has worked as a reviewer for Academic Press Limited, Metrologia, Measurement, IEEE Instrumentation and Measurement Society, the European Physical Journal, Measurement Science and Technology, the International Association of Geodesy Symposia Journal, Journal of Geophysics and ACTA-IMEKO
  - TC Event Editor of ACTA-IMEKO and session editor of TGSMM Proceedings books.
- **306 publications** (more than 70 on ISSN Journals, 4 books, more than 120 on chapter of books and Conference proceedings).

Citation indices	Google Scholar	Scopus	Web of Science/Publons
Citations	1392	654	519
h-index	20	15	13

<https://publons.com/researcher/2784266/alessandro-germak/>  
<https://www.scopus.com/authid/detail.uri?authorId=6603156940>  
<https://orcid.org/0000-0003-4985-9118>  
[https://app.webofknowledge.com/author/record/1073273,31664120?lang=en\\_US](https://app.webofknowledge.com/author/record/1073273,31664120?lang=en_US)

Torino, 22/09/2021

