

Carmine Maletta

PERSONAL INFORMATION



Date of birth: -----

Nationality: Italian

Affiliation

University of Calabria
Department of Mechanical Energy and Management Engineering
P. Bucci 44C, 87036 Rende (CS) - Italy

Contacts

http://infodimeg.unical.it/associate_professor/card/166

WORK EXPERIENCE

12/2017 – present

Associate professor, University of Calabria, Rende (IT)

10/2019 – present

Chief Executive Officer (Co-founder), 2SMARtEST S.r.l. (<https://2smartest.com>), Rende (IT)

Smart materials and systems

04/2016 – present

Cooperation associate, European Organization for Nuclear Research (CERN) – Geneva (CH)

01/2005 – 12/2017

Assistant professor, University of Calabria, Rende (IT)

11/2000 – 11/2002

Business consultant, Accenture S.p.A., Rome (IT)

EDUCATION AND TRAINING

11/2002-12/2005

PhD in Engineering Material and structures. University of Calabria, Rende (IT)

09/2004-12/2004

Visiting scholar, Fraunhofer Institute for Structural Durability and System Reliability, Darmstadt (DE)

09/1992-07/1999

Master Degree in Mechanical Engineering, University of Calabria, Rende (IT)

WORK ACTIVITIES

Awards

- **Best paper award**, Italian Association for Stress Analysis (AIAS), 2013.
- **Young researcher award for international mobility**, University of Calabria, 2015.

Professional membership

- **Executive committee of the Italian Group on Fracture** (<https://www.gruppofrattura.eu/about-us/exco>)
- **Technical committee of the CALEF consortium** (<http://www.consorziocalef.it/trasparenza.html>) c/o ENEA Research center Rotondella (MT)

Editorial activity

- **Editorial Board Member:**
 - Shape Memory and Superelasticity (ISSN: 2199-3858) – Springer Nature
 - Materials (ISSN: 1996-1944) – MDPI
 - AIMS Materials Science (ISSN: 2372-0484) – AIMS Press
 - Fracture and Structural Integrity (ISSN: ISSN 1971-8993) – Italian Group of Fracture
- **Section editor:** Shape Memory Alloy Engineering 2nd Ed (ISBN: 9780128192672) Elsevier
- **Guest editor:** Procedia Structural Integrity (ISSN: 2452-3216), Vol 33 (2021), Elsevier
- **Reviewer:** reviewer for more than 30 International journals

Invited presentations

- **On the Role of Local Transformation Phenomena on Fatigue Damage and Crack Growth in NiTi Alloys**
12th European Symposium on Martensitic Transformations, Ankara (TR), 2022;
- **Fracture mechanics of shape memory alloys: modeling and experimental approaches**
11th European Symposium on Martensitic Transformations, Metz (FR), 2018;
- **Shape memory alloys: experimental characterization and numerical modeling**
University of Applied Science, Bochum (DE), 2007;
- **NiTi based Shape Memory Alloys**
University of Southampton, Southampton (UK), 2008;
- **Applications of NiTi based Shape Memory Alloys**

R&D Projects/Grants

- University of Applied Science Bochum (DE), 2008;
- **Fatigue and fracture properties of pseudoelastic SMAs**
Associazione Italiana di Metallurgia, Milano (Italy); 2016;
 - **Shape Memory Alloy (SMA)-based technologies and their applications in Ultra High Vacuum (UHV) systems of particle accelerators (2014- present)**
Funding organization/program: European Center for Nuclear Research (CERN), Geneva (CH)
Role: Technical/scientific coordinator of the Unical Research Unit
 - **Memorandum of Understanding (MoU) on the Future Circular Collider (FCC), (2017 - Present)**
Funding organization/program: European Center for Nuclear Research (CERN), Geneva (CH)
Role: Technical/scientific coordinator of the Unical Research Unit
 - **Framework Collaboration Agreement (2015- present)**
Funding organization/program: European Center for Nuclear Research (CERN), Geneva (CH)
Role: Technical/scientific coordinator of the Unical Research Unit
 - **InSPiRATION - Integrate and Sustainable Processes and mATerials for smarT ON demand laseradditive manufacturing) (2022 - present)**
Funding organization/program: Ministry of University and Research (MUR), PON "R&I" 2014- 2020
Role: Scientific coordinator of the Unical Research Unit
 - **ARIA – Active Responsive Intelligent Aerodynamics, (2019 - 2022)**
Funding organization/program: Ministry of University and Research (MUR), PON "R&I" 2014- 2020
Role: Scientific coordinator of the Unical Research Unit
 - **THALASSA – TechNology And materials for safe Low consumption And low life cycle cost veSSels And crafts, (2019 - 2022)**
Funding organization/program: Ministry of University and Research (MUR), PON "R&I" 2014- 2020
Role: Scientific coordinator of the Unical Research Unit
 - **NEXTOWER - Advanced materials solutions for next generation high efficiency concentrated solar power (CSP) tower systems (2016-2020)**
Funding organization/program: European commission (HORIZON 2020 - Call: H2020-NMBP-2016-2017)
Role: Scientific coordinator of the Unical Research Unit.
 - **2SMARtEST – Shape Memory Alloy -based Smart Engineering Solutions and Technologies (2020-2022)**
Funding organization/program: Regione Calabria, bando spinoff & startup (Asse:1/ Azione:1.4.1./FESR)
Role: Scientific coordinator of the project.

Publications

Total number of publications in peer-reviewed journals/book series: 91

Total number of citations: 1802

H index: 25

(Scopus 04/2023)

Selected journal papers (last five years):

- [1] Mohammad Hashemi, Y., Kadkhodaei, M., Sgambitterra, E., Maletta, C. (2023). On the characterization of the compressive response of shape memory alloys using bending, *Smart Materials and Structures*, 32(3), 035033
- [2] Magarò, P., Alaimo, G., Carraturo, M., Sgambitterra, E., Maletta, C. (2023), A novel methodology for the prediction of the stress–strain response of laser powder bed fusion lattice structure based on a multi-scale approach, *Materials Science and Engineering A*, 863, 144526
- [3] Renzo, D.A., Maletta, C., Sgambitterra, E., Furguele, F., Berto, F. (2022), Surface roughness effect on multiaxial fatigue behavior of additively manufactured Ti6Al4V alloy, *International Journal of Fatigue*, 163, 107022
- [4] Niccoli, F., Giovinco, V., Garion, C., Maletta, C., Chiggiato, P. (2022), A simplified analytical model to simulate martensite reorientation and plasticity in shape memory alloy ring couplers, *Journal of Intelligent Material Systems and Structures*, 33(12), pp. 1497–1512
- [5] Niccoli, F., Giovinco, V., Garion, C., Maletta, C., Chiggiato, P. (2022), NiTi shape memory alloy pipe couplers for ultra-high vacuum systems: Development and implementation, *Smart Materials and Structures*, 31(6), 065014
- [6] Rodinò, S., Curcio, E.M., Renzo, D.A., Brandizzi, M., Maletta, C. (2022), Shape Memory Alloy—Polymer Composites: Static and Fatigue Pullout Strength under Thermo-Mechanical Loading, *Materials*, 15(9), 3216
- [7] Ritacco, T., Di Cianni, W., Perziano, D., Sanz De León, A., Giocondo, M. (2022), High-Resolution 3D Fabrication of Glass Fiber-Reinforced Polymer Nanocomposite (FRPN) Objects by Two-Photon Direct Laser Writing, *ACS Applied Materials and Interfaces*, 14(15), pp. 17754–17762
- [8] Perrone, D., Rodinò, S., Curcio, E., Maletta, C., Brandizzi, M. (2022), Numerical and Experimental Characterization of Active Grille Shutter Loads for Automotive Applications, *SAE Technical Papers*

- [9] Renzo, D.A., Sgambitterra, E., Magarò, P., Fiocchi, J., Tuissi, A. (2021), Multiaxial fatigue behavior of additively manufactured Ti6Al4V alloy: Axial-torsional proportional loads, *Material Design and Processing Communications*, 3(6)
- [10] Faraji, A.H., Maletta, C., Barbieri, G., Cognini, F., Bruno, L. (2021). Numerical modeling of fluid flow, heat, and mass transfer for similar and dissimilar laser welding of Ti-6Al-4V and Inconel 718 (2021) *International Journal of Advanced Manufacturing Technology*, 114 (3-4), pp. 899-914.
- [11] Shamsolhodaie, A., Razmpoosh, M.H., Maletta, C., Magaro, P., Zhou, Y.N. (2021) A comprehensive insight into the superelasticity measurement of laser welded NiTi shape memory alloys. *Materials Letters*, 287, art. no. 129310
- [12] Renzo, D.A., Sgambitterra, E., Maletta, C., Furguele, F., Biffi, C.A., Fiocchi, J., Tuissi, A. (2021) Multiaxial fatigue behavior of SLM Ti6Al4V alloy under different loading conditions. *Fatigue and Fracture of Engineering Materials and Structures*, In press
- [13] Sgambitterra, E., Magarò, P., Niccoli, F., Furguele, F., Maletta, C. (2021) Fatigue Crack Growth in Austenitic and Martensitic NiTi: Modeling and Experiments. *Shape Memory and Superelasticity*, In press
- [14] Carraturo, M., Alaimo, G., Marconi, S., Negrello, E., Sgambitterra, E., Maletta, C., Reali, A., Auricchio, F. (2021) Experimental and Numerical Evaluation of Mechanical Properties of 3D-Printed Stainless Steel 316L Lattice Structures. *Journal of Materials Engineering and Performance*, In press
- [15] Furguele, F., Magarò, P., Maletta, C., Sgambitterra, E. (2020) Functional and Structural Fatigue of Pseudoelastic NiTi: Global Vs Local Thermo-Mechanical Response. *Shape Memory and Superelasticity*, 6(2), pp.242-255
- [16] Giovinco, V., Kotak, P., Cichella, V., Maletta C., Lamuta, C. (2020). Dynamic model for the tensile actuation of thermally and electro-thermally actuated twisted and coiled artificial muscles (TCAMs). *Smart Materials and Structures*, 29(2), 025004
- [17] Magarò, P., Marino, A.L., Di Schino, A., Testani, C., Tului, M. (2019) Effect of process parameters on the properties of Stellite-6 coatings deposited by Cold Gas Dynamic Spray. *Surface and Coatings Technology*, 377, 124934
- [18] Sgambitterra, E., Magarò, P., Niccoli, F., Renzo, D., Maletta, C. (2019). Novel insight into the strain-life fatigue properties of pseudoelastic NiTi shape memory alloys. *Smart Materials and Structures*, 28(10), 10LT03
- [19] Sgambitterra, E., Maletta, C., Magarò, P., Furguele, F., Sehitoglu, H. (2019). Effects of Temperature on Fatigue Crack Propagation in Pseudoelastic NiTi Shape Memory Alloys. *Shape Memory and Superelasticity*, 5(3), pp.278-291
- [20] Scalet, G., Niccoli, F., Garion, C., Maletta, C., Auricchio, F. (2019). A three-dimensional phenomenological model for shape memory alloys including two-way shape memory effect and plasticity. *Mechanics of Materials*, 136, 103085
- [21] Niccoli, F., Garion, C., Maletta, C., Danzeca, S., Chiggiato, P. (2019). Particle radiation effects on shape memory alloy couplers for ultra-high vacuum sealing: A preliminary study. *Smart Materials and Structures*, 28(8), 085023
- [22] Sgambitterra, E., Magarò, P., Niccoli, F., Renzo, D., Maletta, C. (2019). Low-to-high cycle fatigue properties of a NiTi shape memory alloy. *Procedia Structural Integrity*, 18, pp.908-913
- [23] Renzo, D.A., Sgambitterra, E., Magarò, P., Fiocchi, J., Tuissi, A. (2019). Multiaxial fatigue behavior of additive manufactured Ti-6Al-4V under in-phase stresses. *Procedia Structural Integrity*, 18, pp.914-920
- [24] Dattola, E., Parrotta, E.I., Scalise, S., Di Fabrizio, E., Cuda, G. (2019). Development of 3D PVA scaffolds for cardiac tissue engineering and cell screening applications. *RSC Advances*, 9(8), pp.4246-4257.
- [25] Magarò P., Marino A.L., Maletta C., Tului M., Di Schino A. (2018) Tribological properties of wear-resistant coatings obtained by cold gas dynamic spray. *Procedia Structural Integrity* 9, PP. 287-294
- [26] Sgambitterra, E., Maletta, C., Furguele, F., Sehitoglu, H. (2018). Fatigue crack propagation in [0 1 2] NiTi single crystal alloy. *International Journal of Fatigue*, 112, pp. 9-20
- [27] Corigliano, P., Crupi, V., Guglielmino, E., Maletta, C., Sgambitterra, E., Barbieri, G., Caiazzo, F. (2018). Fatigue assessment of Ti-6Al-4V titanium alloy laser welded joints in absence of filler material by means of full-field techniques. *Frattura ed Integrità Strutturale*, 12 (43), pp. 171-181
- [28] Marrelli, M., Vertucci, V., Amantea, M., Maletta, C., Codispoti, B., Gargari, M., Tatullo, M. (2018). Multiparametric evaluation of fitting accuracy for different combinations of implant-abutment coupling at marginal interface. *ORAL and Implantology*, 11 (1), pp. 77-86.