

EUROPEAN CURRICULUM VITAE FORMAT



PERSONAL INFORMATION

Name
Telephone
Mobile Phone
E-mail

Nationality
Date of birth

PIERRO ELENA

elena.pierro@unibas.it

WORK EXPERIENCE

- Dates
 - Name and address of the company
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- 03/05/2021 - current
Università degli Studi della BASILICATA
Scuola di Ingegneria (SI-UniBas), Potenza
University
Associate Professor - SSD ING-IND/13
Teacher of the Course “Applied Mechanics” and “Advanced Method for Mechanical System Modeling”.
Research activities on the topics: contact mechanics, structural vibrations and vehicle dynamics.
- Dates
 - Name and address of the company
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- 23/12/2011 – 02/05/2021
Università degli Studi della BASILICATA
Scuola di Ingegneria (SI-UniBas), Potenza
University
Assistant Professor - SSD ING-IND/13
Teacher of the Course “Applied Mechanics”.
Research activities on the topics: contact mechanics and structural vibrations.
- Dates
 - Name and address of the company
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- 14/06/2011 - 14/12/2011
Politecnico di Bari
Facoltà di Ingegneria, Dipartimento di Ingegneria Meccanica e Gestionale (DIMEG)
University
Temporary Researcher
Research activity on the project: “Studio teorico-sperimentale della resistenza al peeling e al distacco di adesivi biomimetici micro- e nano- strutturati”
- Dates
 - Name and address of the company
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- 22/11/2010 - 22/05/2011
Politecnico di Bari
Facoltà di Ingegneria, Dipartimento di Ingegneria Meccanica e Gestionale (DIMEG)
University
Temporary Researcher
Research activity on the project: “Analisi delle proprietà tribologiche e adesive di superfici micro- e nano- tramite l'utilizzo della seguente strumentazione: sistema di nanoindentazione e microscratch, tribometro e microscopio a forza atomica (AFM)”

- Dates 06/09/2010 - 06/09/2011
- Name and address of the company Consiglio Nazionale delle Ricerche (CNR) - Istituto IOM di Trieste
 - Type of business or sector Research Institute
 - Occupation or position held Research fellow
- Main activities and responsibilities Research activity on the project: "Studio teorico sperimentale dei fenomeni dinamici e di contatto in micro-strutture meccaniche"

- Dates 08/06/2010 -| 08/09/2010
- Name and address of the company Politecnico di Bari
 - Type of business or sector Facoltà di Ingegneria, Dipartimento di Ingegneria Meccanica e Gestionale (DIMEG)
 - Occupation or position held University Temporary Researcher
- Main activities and responsibilities Research activity on the project: "Analisi dinamico-vibrazionale di cantilever per microscopio a forza atomica (AFM) in presenza di contatto intermittente e/o interazioni non lineari con il substrato"

- Dates 06/10/2008 – 28/05/2010
- Name and address of the company IVECO S.p.a. (FIAT Group)
 - Type of business or sector Trucks and Commercial Vehicles – Lungo Stura Lazio 49, Turin, Italy
 - Occupation or position held Engineering industry Employed – 6° level (open-ended contract)
- Main activities and responsibilities Structural calculations, NVH, durability in light commercial vehicles (Innovation & Advanced Development - Computations & Statistics – LCV)

- Dates 27/03/2008 – 07/06/2008
- Name and address of the company Istituto Tecnico Industriale "Guglielmo Marconi", Piazza Poerio 2, 70126 Bari, ITALY
 - Type of business or sector Senior High School
 - Occupation or position held Teacher
- Main activities and responsibilities Teacher of the Course: "Mechanical Systems"

- Dates 10/09/2007 – 07/03/2008
- Name and address of the company LMS International, Researchpark Z1, Interleuvenlaan 68, 3001 Leuven (Belgium)
 - Type of business or sector Measurement and Systems - Engineering Innovation of Software and Hardware Systems for Noise and Vibration applications
 - Occupation or position held Stage in the RTD group
- Main activities and responsibilities
 - 1) Modal testing, through LMS Test.Lab 8A, on a fuselage panel made of composite material: comparison of the effects of different measure techniques on the data quality (UNVICO-2 PROJECT);
 - 2) Vibro-acoustic modal analysis of the helicopter EUROCOPTER EC-135, through LMS Test.Lab 8A (FRIENDCOPTER Project)

EDUCATION AND TRAINING

- Dates 2014
- Title of qualification awarded National Academic Qualification
- Level in national classification Associate Professor

- Dates
 - Name and type of organisation providing education and training
 - Type of training
 - Dates
 - Name and type of organisation providing education and training
 - Type of training
 - Dates
 - Name and type of organisation providing education and training
 - Type of training
 - Dates
 - Name and type of organisation providing education and training
 - Type of training
 - Dates
 - Name and type of organisation providing education and training
 - Type of training
 - Dates
 - Name and type of organisation providing education and training
 - Type of training
 - Dates
 - Name and type of organisation providing education and training
 - Type of training
 - Dates
 - Name and type of organisation providing education and training
 - Type of training
 - Dates
 - Name and type of organisation providing education and training
 - Level in national classification
 - Principal subjects/occupational skills covered
 - Dates
 - Title of qualification awarded
 - Dates
 - Name and type of organisation providing education and training
- 17 – 28 January 2011
 Technical University of Denmark, Mechanical Engineering Department
Winter School "Nano – Tribology"
- 2 – 4 November 2010
 Politecnico di Bari, Facoltà di Ingegneria, Dipartimento di Ingegneria Meccanica e Gestionale (DIMEG)
Complete course of training on Scanning Probe Microscope - Ntegra Prima
- 20 – 24 April 2009
 CRF – FIAT Group, Orbassano (Turin)
CANTOR Advanced Course - NVH in Transportation Industry
- 15 – 17 April 2009
 Altair Engineering Srl, Turin
Altair Optistruct Optimization
- 18 – 19 September 2008
 K.U.Leuven Department of Mechanical Engineering, PMA, Leuven (Belgium)
Seminar on Advanced Techniques in Applied and Numerical Acoustics (ISAAC19)
- 16 – 20 June 2008
 CISM (International Centre for Mechanical Sciences), Udine (Italy)
Advanced Nonlinear Strategies for Vibration Mitigation and System Identification
- 18 – 19 September 2007
 K.U.Leuven Department of Mechanical Engineering, PMA, Leuven (Belgium)
Course on Modal Analysis: Theory and Practise (ISMA 32)
- 18 – 19 July 2007
 LMS Italy, Novara (Italy)
LMS Virtual.Lab Motion Training
- 19 June 2006
 Ancona (Italy), Facoltà di Ingegneria dell'Università Politecnica delle Marche
Course on Vibration Measurements By Laser Techniques
- 01 June 2006
 Politecnico di Bari, Facoltà di Ingegneria, Dipartimento di Ingegneria Meccanica e Gestionale (DIMEG).
 Winner of the PhD course scholarship in "Mechanical and Biomechanical Design"
 Ø Topic of the research: "Noise and Mechanical Vibrations in the Design Process of Machines";
 Ø Research group: Applied Mechanics;
- 01/2006
Qualification as Engineer, Italian Association Engineers
- 2000 – 2005
 Politecnico di Bari, Facoltà di Ingegneria, Corso di Laurea in Ingegneria Meccanica

- Title of qualification awarded
- Level in national classification
 - Thesis
- Dates
- Name and type of organisation providing education and training
 - Title of qualification awarded
- Level in national classification

MSc in "Mechanical Engineering"

110/110 cum laudae

- Ø Subject: Mechanical vibrations
- Ø Title: "Study and dynamic characterization of a microelectromechanical system"
- Ø Supervisors: Prof. Ing. Tommaso CONTURSI, DdR. Ing. Giuseppe CARBONE, DdR. Ing. Leonardo SORIA

1995 – 2000

Di Cagno Abbrescia, Secondary high school

Diploma in scientific studies

100/100

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE

OTHER LANGUAGES

- Reading skills
- Writing skills
- Verbal skills

SKILLS AND COMPETENCES

_____:

ACADEMIC SERVICE

Academic Teaching

Teacher of the Courses:

Applied Mechanics (9CFU), for the academic years: 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018-2019;

Applied Mechanics (6CFU), for the academic years: 2019-2020, 2020-2021, 2021-2022, 2022-2023, 2023-2024;

Advanced Methods for Mechanical System Modeling (6 of 9 CFU), for the academic years: 2017-2018, 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023, 2023-2024;

Participation in Evaluation Commissions

Public Evaluation for 1 RTDA position (Temporary Assistant Professor) in Applied Mechanics - Università degli Studi di Napoli Federico II (2017)

Public Evaluation for 1 RTDA position (Temporary Assistant Professor) in Applied Mechanics - Università degli Studi di Napoli Federico II (2019)

Public Evaluation for of 1 RTDA position extension (Temporary Assistant Professor) in Applied Mechanics – Università degli Studi di Napoli Federico II (2020)

Public Evaluation for of 1 RTDA position (Temporary Assistant Professor) in Applied Mechanics – Università degli Studi di Napoli Federico II (2021)

EDITORIAL ACTIVITIES

Reviewer of the Scientific Journals

Beilstein Journal of Nanotechnology

Journal of Applied Physics

Mechanical Systems and Signal Processing

Journal of Mechanical Science and Technology

Shock and Vibration

Meccanica

Material and Design

Guest Editor of the Scientific Journals

Guest Editor of the Special Issue: "Dynamical Response of Biological Systems and Biomaterials" - Biomimetics – MDPI AG.

Guest Editor of the Special Issue: "Mechanical Characterization of Biomaterials" - Biomimetics - MDPI AG.

Guest Associate Editor of the Research Topic "Nano Structures for Biological Features

Detection", *Frontiers in Mechanical Engineering*.

FUNDED PROJECTS

Reviewer of Proposals to Funded Projects

"Futuro in Ricerca" - MIUR - 2013;

"FONDECYT - National Fund for Scientific and Technological Development" - Chilean National Commission for

Scientific and Technological Research (CONICYT) - 2019;

Participation in Funded Projects

Scientific Manager of the Project "Alleggerimento e Ottimizzazione di un Telaio di Semirimorchio SCAF" - RIB-LIGHT -

2014-2015 (signed with "AREA di ricerca scientifica e tecnologica di Trieste");

PON - Programma Operativo Nazionale 2014-2020: "Sistemi Integrati e Collaborativi per la Fabbrica Intelligente" -

ICOSAF - ARS01_00861;

PON - Programma Operativo Nazionale 2014-2020: "Piattaforma decisionale manutenzione processo e prodotto" -

PROMPT - ARS01_01046;

Project "Sistemi Innovativi per Motori a Pistoni Aeronautici" - SIMPA, 2017-2020 (signed with "C.M.D. (Costruzioni Motori Diesel) SPA").

ADDITIONAL INFORMATION

PUBLICATIONS

International Journals:

1. E. Pierro, E. Mucchi, L. Soria, A. Vecchio: "On the vibro-acoustical operational modal analysis of a helicopter cabin"- *Mechanical Systems and Signal Processing*, Volume 23, Issue 4, May 2009, Pages 1205-1217.
2. L. Soria, E. Pierro, G. Carbone, T. Contursi: "Tuning fork microgyrometers: Narrow gap vs. wide gap design" – *Journal of Sound and Vibration*, Volume 322, Issues 1-2, 24 April 2009, Pages 78-97.
3. G. Carbone, E. Pierro, S. N. Gorb, "Origin of the superior adhesive performance of mushroom shaped microstructured surfaces", *Soft Matter*, Volume 7, Issue 12, Pages 5545-5552, 2011.
4. G. Carbone, E. Pierro "Sticky Bio-inspired Micropillars: Finding the Best Shape", *Small* Volume 8, Issue 9, Pages: 1449-1454, May 7 2012.
5. G. Carbone, E. Pierro, "Effect of interfacial air entrapment on the adhesion of bio-inspired mushroom-shaped micro-pillars", *Soft Matter*, Volume 8, Issue 30, Pages 7904-7908, 2012.
6. G. Carbone, E. Pierro, "The Influence of the Fractal Dimension of Rough Surfaces on the Adhesion of Elastic Materials", *Journal of Adhesion Science and Technology*, 2555-2570, 2012.
7. G. Carbone, Elena Pierro, "A review of adhesion mechanisms of mushroom-shaped microstructured adhesives", *Meccanica*, 2013.
8. L. Heepe, G. Carbone, E. Pierro, A. E. Kovalev, S. N. Gorb, "Adhesion Tilt-Tolerance in Bio-Inspired Mushroom-Shaped Adhesive Microstructure", *Applied Physics Letters*, 104, 011906, 2014.
9. G. Carbone, E. Pierro, G. Recchia, "Loading-unloading hysteresis loop of randomly rough adhesive contacts", *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics*, Volume 92, Issue 6, 2015.
10. E. Pierro, F. Bottiglione, G. Carbone, "Thermal Fluctuations and Dynamic Modeling of a dAFM Cantilever", *Advanced Theory and Simulations*, DOI: 10.1002/adts.201900004, 2019.
11. E. Pierro, L. Afferrante, G. Carbone, "On the peeling of elastic tapes from viscoelastic substrates: Designing materials for ultratough peeling", *Tribology International*, DOI: 10.1016/j.triboint.2019.106060, 2020.
12. E. Pierro, "Damping control in viscoelastic beam dynamics", *Journal of Vibration and Control*, <https://doi.org/10.1177/1077546320903195>, 2020.
13. E. Pierro, A. D'Angola, G. Carbone, "Road vehicles travelling with time-dependent speed: theoretical study on the directional stability", *Vehicle System Dynamics*, DOI: 10.1080/00423114.2020.1741654, 2020.
14. E. Pierro, G. Carbone, "A new technique for the characterization of viscoelastic materials: Theory, experiments and comparison with DMA", *Journal of Sound and Vibration*, 515(10):116462, 2021.

15. E. Pierro, G. Carbone, "Effect of the shape and size of interfacial micro-cavities on the adhesion of elastic solids", Tribology International, Volume 190, 109019, 2023.

16. E. Pierro, "Effect of an axial pre-load on the flexural vibrations of viscoelastic beams", Journal of Vibration and Control, 30(1-2):76-87, 2024.

PERSONAL DATA

I hereby authorize the use of my personal data in accordance to the GDPR 679/16 - "European regulation on the protection of personal data".

Date 06/06/2024