

## ALBERTO CORIGLIANO

**Born in Milano (Italy), 1963**  
**married, one daughter, one son.**



### EDUCATION

**July 1982:** High School degree of Scientific studies, (60/60).

**April 1988:** *Laurea* (Master of Sciences), (100/100 with honours), in Structural Engineering. Thesis: *Elasto-plastic structural response to cyclic loadings: shakedown analysis, a priori bounds, evolutive analysis.*

### POSITION

**From May 1991 until October 1998:** *ricercatore* (assistant professor) of Structural Engineering at Politecnico di Milano, Italy.

**From November 1998 until August 2002:** *professore associato* (associate professor) of Structural Engineering at Politecnico di Milano, Italy.

**From September 2002:** *professore straordinario* (full professor) of Structural Engineering at Politecnico di Milano, Italy.

**From September 2005:** *professore ordinario* (full professor with tenure) of Structural Engineering at Politecnico di Milano, Italy.

**From January 2009 to December 2012:** deputy Head of Department of Structural Engineering at Politecnico di Milano, Italy.

### TEACHING ACTIVITIES

Courses of Strength of Materials, Structural Mechanics, Finite Elements, Computational Mechanics, Limit Analysis, Theory of Plasticity, Micro Electro Mechanical Systems for undergraduates; Advanced Fracture Mechanics, Micro Electro Mechanical Systems for PhD students.

### OTHER WORK EXPERIENCES

**July 1988 - October 1989:** service as Lieutenant in the Military Engineering Corps.

**December 1991 - November 1992:** research activity at the Laboratoire de Mécanique et Technologie Cachan - France with a CNR (Italian National Research Council) grant.

**July 1996, February 1997, July 1999, May 2006:** Visiting Professor at the Ecole Normale Supérieure Cachan, working at the Laboratoire de Mécanique et Technologie.

**July-August 2004:** Visiting scholar at the Department of Mechanical Engineering, Northwestern University, Evanston, IL, USA.

### AWARDS

February 2006: Bruno Finzi Prize for Rational Mechanics, Istituto Lombardo Accademia di Scienze e Lettere.

July 2015: appointed Euromech Fellow by the European Mechanics Society.

July 2018: member of Istituto Lombardo Accademia di Scienze e Lettere.

### PLENARY AND SEMI-PLENARY LECTURES

- **2010** Semi-plenary lecture “Modelling of spontaneous Adhesion phenomena in Microsystems” ECCM 2010 Paris, 16-21 May 2010.
- **2012** Sectional Lecture “Microsystems and mechanics” at the Congress ICTAM 2012, Beijing, 19-24 August 2012.
- **2013** Plenary Lecture “Recent advances in computational methods for microsystems” at the Congress SMART 2013, Torino, 24-26 June 2013.
- **2015** Plenary lecture “Non-linear mechanics and numerical simulations in microsystems: recent advances and applications”. APM 15, S. Petersburg, 22-27 June 2015.
- **2017** Plenary lecture “Metamaterials with auxetic and ultra-wide band gap properties”. APM 17, S. Petersburg, 22-26 June 2017.
- **2019** Plenary lecture “Recent advances in Microsystems and printed sensors”. APM 17, S. Petersburg, 24-29 June, 2019.

### SCIENTIFIC ASSOCIATIONS

Member of the Executive Congress Committee of the IUTAM

President of the 25<sup>th</sup> ICTAM 2020 (postponed to ICTAM2020+1) from 2016 to 2021.

Chairman of the European Solid Mechanics Conference Committee (ESMCC) from 2013 to 2018.

Member of the IUTAM (International Union of Theoretical and Applied Mechanics) Symposia Panel for Solid Mechanics from 2012 to 2016.  
Member AIMETA (Italian Association of Theoretical and Applied Mechanics) from 1988.  
Member GIMC (Italian Group of Computational Mechanics) from 1988.  
Member EUROMECH (European Mechanics Society) from 1995.  
Member IGF (Italian Group of Fracture) from 1996.  
Member of Eurosim Technical Committee (Thermal, Mechanical and Multiphysics Simulation and Experiments in Micro-Electronics and Micro-Systems) from 2003.  
Member IEEE from 2013.

### **JOURNAL EDITORIAL ACTIVITIES**

Associate Editor of European Journal of Mechanics A/Solids from 2006.  
Associate Editor of Advanced Modeling and Simulation in Engineering Sciences from 2012.  
Associate Editor of Frontiers in Materials – Mechanics of materials from 2014.  
Member of the Editorial Board of: S-Nature Applied Sciences; MDPI Micromachines, Sci, Sensors, Applied Sciences.

### **REFeree ACTIVITIES**

Reviewer for: Italian Agency for Evaluation of University and Research (Anvur); Italian Ministry of Research (MUR); Italian Universities; European ERC; French AERES; French ANR; German DFG, Israel Science Foundation; UK EPSRC; Romania Nat. Res. Council; Kentucky SEF; Tech. Univ. of Denmark (DTU), Dutch KU-Leuven, European Science Foundation.  
Reviewer for more than 100 international journals. Reviewer of national and international books.

### **CURRENT RESEARCH ACTIVITIES**

MEMS: design of on chip test devices for the mechanical characterization of polysilicon at the scale of micron. Fracture and fatigue at the micro scale. Multi-physics and multi-scale modelling. Micro energy harvesters. Micro gyroscopes. Micro Piezo Ultrasound Transducers, Micro-speakers.  
Metamaterials: phononic crystals, auxetic materials, smart metamaterials.  
Deep and reinforcement learning applied to materials and Structural Mechanics

### **LIST OF THESES TUTORED BY ALBERTO CORIGLIANO**

#### **1. PhD Theses**

- 1 M. Ricci. Simulazione di fenomeni di delaminazione in compositi a matrice polimerica. Politecnico di Milano. (1997).
- 2 S. Mariani. Simulation of ductile fracture: material models, computational aspects and parameter identification. Politecnico di Milano. (1998).
- 3 R. Giampieretti. Parameter identification of constitutive models for composites and laminates via homogenisation. Politecnico di Milano. (1999).
- 4 F. Cacchione, Mechanical characterization and simulation of fracture processes in polysilicon Micro Electro Mechanical Systems (MEMS). Politecnico di Milano. (2007).
- 5 G. Salerno, Damage analysis of composite laminates subject to low velocity impacts. Politecnico di Milano. (2009).
- 6 L. Baldassarre, Adhesion in poly-silicon MEMS: experimental characterization and numerical modelling. Politecnico di Milano. (2011).
- 7 E. Bertarelli, Bio-MEMS for microscale fluid transport: design, simulation and prototyping. Politecnico di Milano. (2011).
- 8 F. Confalonieri, A domain decomposition approach for the simulation of fracture phenomena in polycrystalline microsystems. Politecnico di Milano (2013).
- 9 Roberto Martini. Study of crack propagation for the fabrication of ultra-thin silicon solar cells. KU Leuven. (2014)
- 10 Mehrdad Bagherinia. MEMS Sensors for measuring the earth magnetic field: mechanical aspects. Politecnico di Milano (2014).
- 11 Martino Dossi. Combined Model Order Reduction and Domain Decomposition strategies for the solution of non-linear and multi-physics structural problems. Politecnico di Milano. To be discussed January (2015).
- 12 Giacomo Gafforelli. Piezoelectric Vibration Micro Energy Harvesters. Politecnico di Milano-MIT. To be discussed March (2015).
- 13 Valentina Zega. MemS sensors for the measurement of angular velocity: mechanical and structural issues. Politecnico di Milano. February (2017).
- 14 Luca D'Alessandro. Piezoelectric transducers and phononic crystals in microsystems. March (2018).
- 15 Gianluca Massimino. Multi-physics modelling and simulation of piezoelectric micro ultrasound transducers (PMUT). March (2020).
- 16 Y. S. A. Fouad Farshchi. Modelling and simulation of wafer to wafer bonding processes. April (2020).

- 17 Jacopo M. De Ponti. Smart materials and metamaterials. April (2021).
- 18 Luca Rosafalco. Blending physics and data in structural health monitoring. May (2022).
- 19 Michele Rosso. Mechanics of intentional and inherent nonlinearities in piezoelectric vibration energy harvesting. January (2023)
- 20 Chiara Gazzola. Design, Multiphysics modeling and experimental characterization of a piezoelectric MEMS loudspeaker for in-ear applications. June (2023).
- 21 Omer Abdalla. To be discussed (2025).
- 22 Filippo Perli. To be discussed (2026).
- 23 Emad Panhai. To be discussed (2027).

## 2. Laurea (Master) Theses

- 1 M. Chiumenti. Simulazione numerica di propagazione di fessure in materiali duttili. Politecnico di Milano. (1994).
- 2 S. Mariani. Meccanica della frattura elasto-plastica: parametri geometrici e loro impiego nello studio di condotte in pressione. Politecnico di Milano. (1995).
- 3 F. Carenini e M. Soffietti. Analisi per elementi finiti di fratture quasi fragili con modelli a discontinuità di spostamento su interfacce ed attraverso elementi. Politecnico di Milano. (1995).
- 4 S. Testolina. Meccanica della frattura duttile in condotte e recipienti in pressione. Politecnico di Milano. (1996).
- 5 A. Parolini. Analisi micromeccanica e macromeccanica di un elemento strutturale tubolare realizzato in materiale composito. Politecnico di Milano. (1997).
- 6 B. Orsatti. Applicazione della tecnica del filtro di Kalman discreto all'identificazione di parametri del modello di Gurson in processi di frattura duttile. Politecnico di Milano. (1998).
- 7 I. Schiavi e M. Savioli. Caratterizzazione sperimentale e simulazioni analitico-numeriche del comportamento meccanico di un composito a sandwich in vetroresina e schiuma sintattica. Politecnico di Milano. (1998).
- 8 M. Carli e R. Moroni. Resistenza a delaminazione in un composito a matrice termoplastica: identificazione sperimentale di modelli costitutivi e analisi numerica. Politecnico di Milano. (1999).
- 9 M. Molteni. Simulazione di processi di frattura in polimeri e compositi a matrice polimerica. Politecnico di Milano. (1999).
- 10 D. Buzzi. Studio di un modello macroscopico per compositi fibrosi mediante una tecnica di interferometria laser. Politecnico di Milano. (2000).
- 11 I. Mornati. Resistenza trasversale di materiali compositi periodici a fibre lunghe: influenza dell'interfaccia fibra-matrice. (2001).
- 12 P. Missaglia. Calcolo evolutivo elastoplastico di una ruota di treno veloce. Politecnico di Milano. (2001).
- 13 M. Iacchetti. Caratterizzazione meccanica del materiale e calcoli elasto-plastici evolutivi di una ruota di treno veloce. Politecnico di Milano. (2001).
- 14 D. Camagni. Elementi finiti e modelli costitutivi di interfaccia per lo studio di elementi strutturali rinforzati con lamine in composito. Politecnico di Milano. (2001).
- 15 A. Villa. Caratterizzazione meccanica del polisilicio epitassiale nella tecnologia Mems. Politecnico di Milano. (2002).
- 16 S. Bianchi. Frattura per delaminazione in un composito a matrice termoplastica: simulazione numerica ed identificazione della legge di interfaccia. Politecnico di Milano. (2002).
- 17 M. Binci. Modello numerico di un motore ultrasonico piezoelettrico. Politecnico di Milano. (2003).
- 18 R. Barbato e M. Camagni. Modellazione numerica del comportamento post-elastico di un composito alluminio-polietilene per imballaggi alimentari. Politecnico di Milano. (2003).
- 19 C.A. Limonta. Simulazione numerica del processo di apertura di un tappo a vite per imballaggi alimentari in composito alluminio-polietilene. Politecnico di Milano. (2003).
- 20 M. Epis. Studio di fenomeni di delaminazione in materiali compositi stratificati. Politecnico di Milano. (2003).
- 21 P. Redaelli. Programma per la discretizzazione spaziale di domini bidimensionali mediante elementi finiti triangolari ed elementi di interfaccia: uso dell'algoritmo di Delaunay. Politecnico di Milano. (2003).
- 22 S. Kashbur. Identificazione parametrica mediante tecnica del filtro di Kalman discreto in dinamica strutturale esplicita. Politecnico di Milano. (2003).
- 23 M. Carta. Tecniche di filtraggio applicate a problemi di identificazione parametrica in dinamica strutturale. Politecnico di Milano. (2003).
- 24 F. M. Zoia. Strutture multimedie compatte: analisi e confronto. (2003).
- 25 F. Cacchione. Caratterizzazione delle proprietà meccaniche del polisilicio sottile prodotto con il processo Thelma™. Politecnico di Milano. (2003).
- 26 G. B. Ferri, M. Merli. Studio sul comportamento meccanico di adesivi per l'edilizia. Politecnico di Milano. (2004).
- 27 G. Sacco. Analisi ad elementi finiti tridimensionali di pavimentazione a rivestimento ceramico. Politecnico di Milano. (2004).
- 28 A. Larcán. Progettazione di prove a fatica per silicio policristallino mediante micro dispositivi elettromeccanici (MEMS). Politecnico di Milano. (2004).

- 29 W. Mondelli. Un modello costitutivo elasto-plastico a danneggiamento per lamine di composito fibro-rinforzato. Politecnico di Milano. (2005).
- 30 A. Giampieri, A. Mencarelli. Procedura di calcolo ad elementi finiti di guscio per la simulazione del processo di formatura di contenitori in laminato sottile. Politecnico di Milano. (2005).
- 31 L. Domenella. Attuatori elettro-termo-meccanici per microsistemi. Politecnico di Milano. (2005).
- 32 B. Jacques. Valutazione dei criteri di verifica di condotte sottomarine in campo post-buckling, Tesi, Ing. Civile, Politecnico di Milano. (2006).
- 33 M. Cremonesi. Implementazione di tecniche di parallelizzazione e di un metodo lagrangiano a particelle di fluido finalizzati allo sviluppo di un codice di calcolo ad elementi finiti per problemi di interazione fluido-struttura. Tesi, Ing. Matematica Politecnico di Milano. (2006).
- 34 G. Negrisoni. Caratterizzazione meccanica di adesivi per l'edilizia. Tesi, Ing. Civile, Politecnico di Milano. (2006).
- 35 Emanuele Greco. Metodi per la valutazione della dissipazione viscosa nei MEMS. Tesi, Ing. Matematica Politecnico di Milano. (2007).
- 36 Leonardo Baldassarre. Metodi computazionali per la soluzione di problemi accoppiati in micro sistemi elettro meccanici (MEMS). Tesi, Ing. Civile, Politecnico di Milano. (2007).
- 37 Alberto Capsoni. Modellazione numerica di processi di frattura in materiali poli-cristallini per micro-sistemi. Tesi, Ing. Civile, Politecnico di Milano. (2008).
- 38 Cesare Compri. Analisi e ottimizzazione di un accelerometro capacitivo uni assiale MEMS. Tesi primo livello, Ing. Matematica, Politecnico di Milano. (2008).
- 39 Mahael Fedele. Dynamic response of subsea free spanning pipelines subject to "pull-over" of bottom trawl equipment. Tesi, Ing. Civile, Politecnico di Milano. (2008).
- 40 Carlo Guerini. Analisi di strutture tridimensionali composte da elementi di trave e lastra-piastra: teorie strutturali ed elaborazione di un codice di calcolo agli elementi finiti. Tesi, Ing. Civile, Politecnico di Milano. (2009).
- 41 Ouafou Soh. Problemi di instabilità strutturale in travi e telai. Tesina, Ing. Civile, Politecnico di Milano. (2009).
- 42 Andrea Padoa. Towards the simulation of buckling driven delamination in a multi scale domain decomposition framework. Tesina, Ing. Civile, Politecnico di Milano. (2009).
- 43 Alessandro Beccaluva, Maria Giulia De Donno. Micro-accelerometri capacitivi e risonanti: problemi di progettazione e di modellazione numerica. Tesi, Ing. Civile, Politecnico di Milano. (2009).
- 44 Federica Confalonieri. Metodi di decomposizione di domini per problemi di dinamica strutturale. Tesi, Ing. Civile, Politecnico di Milano. (2009).
- 45 Danilo Roncoroni. Metodi di decomposizione di dominio applicati a problemi di meccanica di solidi e strutture. Tesi, Ing. Civile, Politecnico di Milano. (2010).
- 46 Daniele Arosio. Modellazione e simulazione di fenomeni di adesione in microsistemi. Tesi, Ing. Matematica, Politecnico di Milano. (2010).
- 47 Stefano Ambrosi, Domenico Briganti. Modellazione e simulazione di dispositivi per la perforazione di pozzi petroliferi. Tesi, Ing. Civile, Politecnico di Milano. (2010).
- 48 Martino Dossi, Matteo Gornati, Metodi di decomposizione dei domini applicati alla soluzione di problemi elettro-meccanici. Tesi, Ing. Civile, Politecnico di Milano. (2011).
- 49 Amaury Courard, Fenomeni dissipativi in micro risonatori. Tesi, Ing. Civile, Politecnico di Milano. (2011).
- 50 Giacomo Gafforelli, Microattuatori elettrostatici e piezoelettrici per la realizzazione di micro pompe. Tesi, Ing. Civile, Politecnico di Milano. (2011).
- 51 Francesco Rizzini, Modelli semplificati e ad elementi finiti per la simulazione di fenomeni di adesione in microsistemi. Tesi, Ing. Matematica, Politecnico di Milano (2012).
- 52 Alessandro Bugada, Marco Martello, Modellazione e simulazione di fenomeni dissipativi in microsistemi. Tesi, Ing. Matematica, Politecnico di Milano (2012).
- 53 Salvatore Barbara, Applicazione della teoria flessionale inestensionale delle piastre sottili alla tecnica di curvatura a freddo di pannelli di vetro. Tesi, Ing. Civile, Politecnico di Milano. (2012).
- 54 Andrea Morbio, Alessandro Pepe, Modellazione e sperimentazione di elementi strutturali compositi piezoelettrici. Tesi, Ing. Civile, Politecnico di Milano (2013).
- 55 Valentina Zega, Risonatore torsionale per microsistemi: modellazione, sperimentazione, applicazioni. Tesi, Ing. Matematica, Politecnico di Milano (2013).
- 56 Giulia Saraceno, Design charts for composite laminated beams. Tesi, Ing. Civile, Politecnico di Milano - McGill University, Montreal (2014).
- 57 Giuseppe Russo, Modellazione e simulazione di un micro-giroscopio piezoelettrico Tesi, Ing. Civile, Politecnico di Milano (2014).
- 58 Roberto Guinand, A weakly-intrusive multi-scale coupling method for dynamic analysis Extension to the Newmark schemes. Tesi, Ing. Civile, Politecnico di Milano - LMT Cachan (2014).
- 59 Mauro Terraneo, Metodo di decomposizione dei domini applicato a problemi termo-elastici. Tesi, Ing. Civile, Politecnico di Milano (2015).

- 60 Parya Keyvani, Polymer Piezolaminated Micro Actuator for Drug Delivery. Tesi, Materials Engineering and nanotechnologies, Politecnico di Milano (2015).
- 61 Nystha Baishya, Auxetic structures for microsystems: study, modelling and 3D printing. Tesina Materials Engineering and nanotechnologies, Politecnico di Milano (2015).
- 62 Karan Afshar Ghassemi, Frequency up conversion for energy harvesting: Piezoelectric Beam and Magnetic Forces. Tesina, Materials Engineering and nanotechnologies, Politecnico di Milano (2015).
- 63 Y. S. A. Fouad Farshchi, Preliminary design and 3-D modelling and simulation of a piezoelectric micropump, Tesi, Materials Engineering and nanotechnologies, Politecnico di Milano (2016).
- 64 Gianluca Massimino, Modellazione e simulazione di un micro trasduttore ultrasonico piezoelettrico, Tesi, Ing. Civile, Politecnico di Milano (2016).
- 65 Massimiliano Milan, Micro-Systems for micro and nano-mechanical testing, Tesi, Ing. Civile, Politecnico di Milano (2016).
- 66 Milena Doti, Alessandro Garatti, Comportamento dinamico non lineare in microstrutture: modellazione e validazione sperimentale. Tesi, Ing. Civile, Politecnico di Milano (2016).
- 67 Chang Qu, Piezoelectric vibration energy harvester actuated by seismic excitation. Tesi, Ing. Civile, Politecnico di Milano (2016).
- 68 Marco Paroni, Modelling and characterization of piezoelectric materials for microsystems. Tesina, Materials Engineering and nanotechnologies, Politecnico di Milano (2016).
- 69 Paolo De Pol, Modellazione ad elementi finiti di piastre composite stratificate. Tesina, Ing. Civile, Politecnico di Milano (2016).
- 70 Jacopo Carraro, Multi-physics modelling and design of a new piezoelectric micro-gyroscope. Tesi, Materials Engineering and nanotechnologies, Politecnico di Milano (2016).
- 71 Andrea Castiglioni, Design, fabrication and modelling of three-dimensional microlattice structures. Tesi, Ing. Civile, Politecnico di Milano (2017).
- 72 Alessandro Colombo, Modellazione multi-fisica ad elementi finiti di piastre stratificate con attuazione piezoelettrica per l'emissione di segnali ad Ultrasuoni. Tesi, Ing. Civile, Politecnico di Milano (2017).
- 73 Alessandro Sergio Stoppato, Design, fabrication and analysis of a 3D-printed triaxial accelerometer. Tesi, Materials Engineering and nanotechnologies, Politecnico di Milano (2018).
- 74 Luca Rosafalco, Selective mass scaling approach coupled to a domain decomposition technique for the solution of linear an non-linear structural problems. Tesi, Ing. Civile, Politecnico di Milano (2018).
- 75 Mirko Damino, Modellazione e simulazione di processi di delaminazione e fatica in film metallici sottili. Tesi, Ing. Civile, Politecnico di Milano (2018).
- 76 Matteo Rossi, Reti neurali applicate allo studio parametrico di problemi elastici lineari. Tesina, Ing. Civile, Politecnico di Milano (2018).
- 77 Marco Bollati, Modelling, Simulation and Design of an electro-thermal microactuator for on-chip dynamic testing. Tesi, Materials Engineering and nanotechnologies, Politecnico di Milano (2018).
- 78 Nadia Paderno, 3D metastructures for the manipulation of mechanical waves and Energy Harvesting. Tesi, Materials Engineering and nanotechnologies, Politecnico di Milano (2018).
- 79 Ruixue Zhao, 3D Printed Metamaterials for Vibration Isolation. Tesina, Materials Engineering and nanotechnologies, Politecnico di Milano (2019).
- 80 Giulio Tinacci, Ottimizzazione geometrica di microspecchi. Tesi, Ing. Civile, Politecnico di Milano (2019).
- 81 Stefano Fanizzi, Artificial Neural Networks applied to problems in structural Mechanics and thermo-Mechanics. Tesi, Ing. Civile, Politecnico di Milano (2019).
- 82 Javier Ramirez, Metamaterials for vibration control: an application for isolation of railway-induced vibrations. Tesi, Ing. Civile, Politecnico di Milano (2019).
- 83 Leonardo dalla Rosa, Structural Health monitoring of a concrete tunnel lining under complex in situ loading. Tesi, Ing. Civile, KTH Stockholm-Politecnico di Milano (2019).
- 84 Michele Rosso, Microstrutture piezoelettriche per applicazione di energy harvesting in ambito industriale. Tesi, Ing. Civile, Politecnico di Milano (2019).
- 85 Elia Scattolo, Optimization and production of chemo-resistive gas sensors based on ultra-low power consumption silicon microheater. Tesi, Materials Engineering and nanotechnologies. FBK-Trento, Politecnico di Milano (2019).
- 86 Jacopo Musumeci, Numerical Model of a piezoelectric actuated inkjet printhead. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2019).
- 87 Matteo Baiardi, Reliability of an electromagnetically actuated micromirror. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2019).
- 88 Pietro Aceti, Sistemi di energy Harvesting per sensori e dispositivi portatili, basati sull'uso di materiali piezoelettrici. Tesi, Ing. Aeronautica, Politecnico di Milano (2019).
- 89 Matteo Torzoni, modelli di ordine ridotto e reti neurali artificiali per il monitoraggio strutturale: analisi dell'influenza della temperatura nella localizzazione del danneggiamento. Tesi, Civil Engineering. Politecnico di Milano (2020).

- 90 Davide Brignoli. Studio di “metapiastra” per attenuazione di vibrazioni in microsistemi. Tesi, Civil Engineering. Politecnico di Milano (2020).
- 91 Borka Lazarova. Experimental characterization of piezoelectric micromachined ultrasound transducer – PMUT. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2020).
- 92 Dario Spreafico. Oscillatori piezoelettrici per la raccolta e conversione di energia da vibrazione. Tesi, Civil Engineering. Politecnico di Milano (2020).
- 93 Riccardo Canavese. Modellazione e simulazione di microspeakers piezoelettrici per applicazioni in-ear. Tesina, Materials Engineering and nanotechnologies, Politecnico di Milano (2020).
- 94 Marco Antonacci. Phononic crystal based lenses for focusing and energy harvesting. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2020).
- 95 Luca Martinelli. 3D-Printed Titanium Accelerometers. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2020).
- 96 Davood Hatami e Hosseinabadi Hossein Nouri. Additive Manufactured Piezopolymer-based Inertial sensor. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2020).
- 97 Omer Mohamed Osman Abdalla. Design, Modeling and Simulation of an Ultrasound-Based Stress Monitoring Application for Steel Structural Joints. Tesi, Ing. Civile. Politecnico di Milano (2020).
- 98 Matteo Furlan. Modelling simulation and design of micro-testing machines for microsystem fracture characterization. Tesi, Ing. Civile. Politecnico di Milano (2021).
- 99 Matteo Birondi. Modelling, simulation and design of MEMS for adhesion testing. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2021).
- 100 Luca Iorio. Rainbow trapping and reflection in elastic waveguides. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2021).
- 101 Matteo Colosio. Design Modelling and Mechanical/Acoustic Experimental Characterization of Piezoelectric Micro-Ultrasound Transducers. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2021).
- 102 Giorgia Colombera. Enhancing Structural Health Monitoring via Deep Learning: a generative adversarial network to forecast the transient response of damaged structures. Tesi, Ing. Civile. Politecnico di Milano (2021).
- 103 Yeqi Pan. Modelling and Simulation of A Printable Capacitive Pressure Sensor. Tesina, Materials Engineering and nanotechnologies. Politecnico di Milano (2021).
- 104 Alessandro Perlongo. Long-term thermo-hydro-mechanical behaviour modelling of double walled containment vessels: Application to the Vercors mock-up. Tesi, Ing. Civile. Politecnico di Milano (2021).
- 105 Eugenio Chini. Experimental Set-Up Development for a New Mechanical Reliability Approach. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2021).
- 106 Cristina D’Argenzio. Modeling and Experimental characterization of cross-talk effects in PMUT arrays. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2022).
- 107 Fabio Nistri. Mitigation of ground-borne vibrations using metabarriers. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2022).
- 108 Joo Wang Kim. Attention mechanism-based optimization of structural health monitoring systems. Tesi, Ing. Civile. Politecnico di Milano (2022).
- 109 Daniele Marchini. Modelling and simulation of piezoelectric microspeakers. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2022).
- 110 Kubilay Kahn Bachecki. Modeling and simulation of ultrasonic backscattering effects as intrabody communication application based on PMUT arrays. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2022).
- 111 Stefano Biemmi. Innovative Metaplate for Vibration Isolation of Resonant Microsystem. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2022).
- 112 Andrea Merlati. Convolutional Auto-Encoders and Markov Transition Fields for Structural Health Monitoring. Tesina, Ing. Civile. Politecnico di Milano (2022).
- 113 Andrea Ceresoli. Soldering effects on integrated circuits: Development of a comprehensive predictive tool. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2022).
- 114 Alessia Baronchelli. Nonlinear mechanical behavior of microsystems simulated with deep learning and model order reduction. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2023).
- 115 Michele Verdelli. Simulations and measurements of piezoelectric MEMS microspeakers. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2023).
- 116 Simone Martini. Particle Finite Element Method applied to sediment transport and erodible surfaces. Tesi, Mathematical Engineering. Politecnico di Milano (2023).
- 117 Syed Yusuf. Optimal Truss Design using Reinforcement Learning. Tesina, Civil Engineering. Politecnico di Milano (2023).
- 118 Santiago Camacho. Multi-material topology optimisation exploiting artificial intelligence. Tesina, Civil Engineering. Politecnico di Milano (2023).
- 119 Gabriele Garayalde. DYNUTOP: Dynamically Updating Topology Optimization Prediction using Artificial Intelligence. Tesi, Civil Engineering. Politecnico di Milano (2023).

- 120 Emmanuel Denis Manoni. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2023).
- 121 Mohamad Maamoun Jamal. Piezoelectric MEMS Microspeakers for In-Ear Applications. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2023).
- 122 Lingzhi Chen. Modelling and simulation of micro-resonators dynamics with focus on damping sources. Tesi, Civil Engineering for risk mitigation. Politecnico di Milano (2023).
- 123 Mamaghani Mohammad Omid. Vibration-based Structural Health Monitoring by using machine learning. Tesina, Civil Engineering for risk mitigation. Politecnico di Milano (2023).
- 124 Lorenzo Di Giovanni. Non-linear dynamics of a micro-gyroscope. Tesi, Civil Engineering. Politecnico di Milano (2023).
- 125 Walter Gubinelli. ScAlN Resonators for Internet of Things Applications. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2023).
- 126 Giulia Mecca. Inkjet printing of multi-material piezoelectric sensor for large strain applications. Tesi, Materials Engineering and nanotechnologies. Politecnico di Milano (2023).
- 127 Sleem Mohamed Sleem Ismail. Unsupervised Machine Learning Approaches for Anomaly Detection in Structural Long-term Monitoring Data. Tesina, Civil Engineering for risk mitigation. Politecnico di Milano (2023).

## LIST OF PUBLICATIONS OF ALBERTO CORIGLIANO

### Bibliometrical data

	Google Scholar	Scopus
Number of documents	410	255
Total number of citations	7489	5358
h-index	45	39
i-10 index	134	114

### 1. International Journals

- I.1 C. Comi, A. Corigliano, G. Maier. Extremum properties of finite-step solutions in elastoplasticity with nonlinear mixed hardening. *Int. J. Solids Structures*, **27**, 965-981 (1991)
- I.2 C. Comi, A. Corigliano. Dynamic shakedown in elastoplastic structures with general internal variable constitutive laws. *Int. J. of Plasticity*, **7**, 679-692 (1991).
- I.3 A. Corigliano, U. Perego. Generalized mid-point finite element dynamic analysis of elastoplastic systems. *Int. J. Num. Meth. Engng.*, **36**, 361-383 (1993).
- I.4 C. Comi, A. Corigliano, G. Maier. Dynamic analysis of elastoplastic-softening discretized structures. *ASCE J. Eng. Mech.*, **118** (12), 2352-2375 (1992).
- I.5 A. Corigliano. Formulation, identification and use of interface models in the numerical analysis of composite delamination. *Int. J. Solids Structures*, **30**, 2779-2811 (1993).
- I.6 A. Corigliano. Numerical analysis of discretized elasto-plastic systems using the generalized mid-point time integration. *Engineering Computation*, **11**, 389-411 (1994).
- I.7 O. Allix, P. Ladevèze e A. Corigliano. Damage analysis of interlaminar fracture specimens. *Composite Structures*, **31**, 61-74 (1995).
- I.8 A. Corigliano, G. Maier, S. Pycko. Dynamic shakedown analysis and bounds for elastoplastic structures with nonassociative, internal variables constitutive laws. *Int. J. Solids Structures*, **32**, 3145-3166 (1995).
- I.9 O. Allix, A. Corigliano. Modeling and simulation of crack propagation in mixed-modes interlaminar fracture specimens. *Int. J. Fracture*, **77**, 111-140 (1996).
- I.10 C. Comi, A. Corigliano. On uniqueness of the dynamic finite-step problem in gradient-dependent softening plasticity. *Int. J. Solids Structures*, **33**, 26, 3881-3902 (1996).
- I.11 G. Bolzon, A. Corigliano. A discrete formulation for elastic solids with damaging interfaces. *Comp. Methods Appl. Mech. Engng.*, **140**, 329-359 (1997).
- I.12 A. Corigliano, S. Mariani, G. Maier. Analysis of ductile fracture of pipelines by means of geometric parameters. *Engineering Structures*, **21**, 10, 924-936 (1999).
- I.13 O. Allix, A. Corigliano. Geometrical and interfacial non-linearities in the analysis of delamination in composites. *Int. J. Solids Structures*, **36**, 2189-2216 (1999).
- I.14 A. Corigliano, O. Allix. Some aspects of interlaminar degradation in composites. *Comp. Meth. Appl. Mech. Engng.*, **185**, 203-224 (2000).
- I.15 E. Rizzi, E. Papa, A. Corigliano. Mechanical behaviour of a syntactic foam: experiments and modeling. *Int. J. Solids Structures*, **37/40**, 5773-5794 (2000).
- I.16 A. Corigliano, M. Ricci. Rate-dependent interface models: formulation and numerical applications. *Int. J. Solids Structures*. **38/4**, 547-576. (2001).
- I.17 S. Mariani, A. Corigliano. Anisotropic behaviour of porous-ductile media. *Int. J. Solids Structures*. **38/14**, 2427-2451 (2001).

- I.18 G. Bolzon, A. Corigliano. Finite elements with embedded displacement discontinuity: a generalized variable formulation. *I. J. Num. Meth. Engng.*, **49**, 10, 1227-1266 (2000).
- I.19 A. Corigliano, S. Mariani, B. Orsatti. Identification of Gurson-Tvergaard material model parameters via Kalman filtering technique – I. Theory. *I. J. Fracture*, **104**, 349-373 (2000).
- I.20 A. Corigliano, E. Rizzi, E. Papa. Experimental characterization and numerical simulations of a syntactic-foam/glass-fibre composite sandwich. *Composites Science and Technology*, **60**, 2169-2180 (2000).
- I.21 A. Corigliano, S. Mariani. Parameter identification of a time-dependent elastic-damage interface model for the simulation of debonding in composites. *Composites Science and Technology*. **61/2**, 191-203 (2001).
- I.22 A. Corigliano, S. Mariani. Identification of a constitutive model for the simulation of time-dependent interlaminar debonding processes in composites. *Comp. Meth. Appl. Mech. Engng.* **191**, 1861-1894 (2002).
- I.23 E. Papa, A. Corigliano, E. Rizzi. Mechanical behaviour of a syntactic foam-glass fibre composite sandwich: experimental results. *Struct. Eng. and Mech.*, **12**, 2, 169-188 (2001).
- I.24 A. Corigliano, S. Mariani. Simulation of damage in composites by means of interface models: parameter identification. *Composites Science and Technology*. **61**, 2299-2315 (2001).
- I.25 A. Corigliano, S. Mariani, A. Pandolfi. Numerical modeling of rate-dependent debonding processes in composites. *Composite Structures*. **61/1**, 39-50, (2003).
- I.26 A. Corigliano, B. De Masi, A. Frangi, A. Comi, A. Villa, M. Marchi. Mechanical characterization of polysilicon through on chip tensile tests. *J. of Microelectromechanical Systems*, **13**, 2, 200-219 (2004).
- I.27 A. Corigliano, E. Papa, A. Pavan. Study of the mechanical behaviour of a macroscopic glass-polyester composite by ESPI method and numerical simulations. *Composites Science and Technology* **64**, 1829-1841 (2004).
- I.28 A. Corigliano, S. Mariani. Parameter identification in explicit structural dynamics: performance of the extended kalman filter. *Comp. Meth. Appl. Mech. Engng.* **193**, 3807-3835, (2004).
- I.29 S. Bianchi, A. Corigliano, R. Frassine, M. Rink. Modelling of interlaminar fracture processes in composites using interface elements. *Composites Science and Technology*. **66**, 255-263, (2006).
- I.30 A. Frangi, A. Corigliano, M. Binci, P. Faure. Numerical modelling of a rotating piezoelectric ultrasonic motor. *J. of Ultrasonics*. **43**, 747-755 (2005).
- I.31 A. Corigliano, S. Mariani, A. Pandolfi. Numerical analysis of rate-dependent dynamic composite delamination. *Composites Science and Technology*, **66**, 766-775 (2006).
- I.32 S. Mariani, A. Corigliano. Impact induced composite delamination: state and parameter identification via joint and dual extended Kalman filters. *Comp. Meth. Appl. Mech. Engng.* **194**, 5242-5272, (2005).
- I.33 F. Cacchione, B. De Masi, A. Corigliano, M. Ferrera. Rupture tests on polysilicon films through on-chip electrostatic actuation. *Sensor Letters*. **4**, 38-45 (2006).
- I.34 A. Corigliano, F. Cacchione, B. De Masi, C. Riva. On-chip electrostatically actuated bending tests for the mechanical characterization of polysilicon at the micro scale. *Meccanica*. **40**, 485-503, (2005).
- I.35 Y. Zhu, A. Corigliano, H.D. Espinosa. A thermal actuator for nanoscale *In-Situ* microscopic testing: design and characterization. *J. Micromechanics Microengineering*, **16**, 242-253 (2006).
- I.36 F. Cacchione, A. Corigliano, B. De Masi, C. Riva. Out of plane vs. in plane flexural behaviour of thin polysilicon films: mechanical characterization and application of the Weibull approach. *Microelectronics Reliability*, **45**, 1758-1763, (2005).
- I.37 F. Cacchione, A. Corigliano, B. De Masi, M. Ferrera. Out of plane flexural behaviour of thin polysilicon films: mechanical characterization and application of the Weibull approach. *Sensor Letters*. **4**, 184-190 (2006).
- I.38 A. Corigliano, L. Domenella, H. D. Espinosa, Y. Zhu. Electro-thermal actuator for on-chip nanoscale tensile tests: analytical modelling and multi-physics simulations. *Sensor Letters*, **5**, 592–607 (2007).
- I.39 A. Corigliano, F. Cacchione, A. Frangi, S. Zerbini. Numerical modelling of impact rupture in polysilicon microsystems. *Comput. Mech.*, **42** (2), 251-259, (2008).
- I.40 A. Corigliano, F. Cacchione, A. Frangi, S. Zerbini. Numerical simulation of impact-induced rupture in polysilicon MEMS. *Sensor Letters*, **6**, 35–42 (2008).
- I.41 S. Mariani, A. Ghisi, A. Corigliano, S. Zerbini. Multi-scale Analysis of MEMS Sensors Subject to Drop Impacts. *Sensors*, **7**, 1817-1833, (2007).
- I.42 R. Ardito, C. Comi, A. Corigliano, A. Frangi. Solid damping in Micro Electro Mechanical Systems. *Meccanica*, **43**, 419-428, (2008).
- I.43 S. Mariani, A. Ghisi, F. Fachin, F. Cacchione, A. Corigliano, S. Zerbini. A three-scale FE approach to reliability analysis of MEMS sensors subject to impacts. *Meccanica*, **43**, 469-483, (2008).
- I.44 G. Langfelder, A. Longoni, F. Zaraga, A. Corigliano, A. Ghisi, A. Merassi. A new on-chip test structure for real time fatigue analysis in polysilicon MEMS. *Microelectronics reliability*. **49**, 120–126, (2009).
- I.45 A. Ghisi, S. Kalicinski, S. Mariani, I. De Wolf and Alberto Corigliano. Polysilicon MEMS accelerometers exposed to shocks: numerical-experimental investigation. *J. of Micromechanics and Microengineering*. **19**, 3 035023 (12pp), (2009).



- I.46 S. Mariani, A. Ghisi, A. Corigliano, S. Zerbini. Modeling Impact-induced Failure of Polysilicon MEMS: a Multi-scale Approach. *Sensors*, **9**, 556-567, (2009).
- I.47 A. Corigliano, L. Domenella, G. Langfelder. On chip mechanical characterization using an electro-thermo-mechanical actuator. *Experimental Mechanics*, **50**, 695-707, (2010).
- I.48 S. Mariani, R. Martini, A. Ghisi, A. Corigliano, B. Simoni. Monte Carlo simulation of micro-cracking in polysilicon MEMS exposed to shocks. *Int. J. Fract.* **167**, (1), 83-101 (2011).
- I.49 A. Corigliano, A. Ghisi, G. Langfelder, A. Longoni, F. Zaraga, A. Merassi. A microsystem for the fracture characterization of polysilicon at the micro scale. *European J. of Mechanics*, **30**, 127-136 (2011).
- I.50 C. Comi, A. Corigliano, G. Langfelder, A. Longoni, A. Tocchio, B. Simoni. A resonant microaccelerometer with high sensitivity operating in an oscillating circuit. *J. of Microelectromechanical Systems* **19**, 5, 1140-1152, ISSN: 1057-7157, DOI 10.1109/JMEMS.2010.2067437 (2010).
- I.51 R. Ardito, A. Corigliano, A. Frangi. Multiscale finite element models for predicting spontaneous adhesion in MEMS. *Mécanique & Industries*. **11**, 177-182, (2010).
- I.52 E. Bertarelli, A. Corigliano, A. Greiner, J. G. Korvink. Design of high stroke electrostatic micropumps: a charge control approach with ring electrodes micropumps. *Microsystem Technologies*, **17**, 165-173, (2011).
- I.53 E. Bertarelli, R. Ardito, A. Corigliano, R. Contro. Pull-in instability in electrostatically actuated micropump diaphragms: an analytical and computational study. *Int. J. Applied Mechanics*, **3**, 1, 1-19 (2011).
- I.54 M. Kaminski, A. Corigliano. Sensitivity, probabilistic and stochastic analysis of the thermo-piezoelectric phenomena in solids by the stochastic perturbation technique. *Meccanica*, **47** (4), 877-891 (2012).
- I.55 R. Ardito, A. Frangi, A. Corigliano, B. De Masi, G. Cazzaniga. The effect of nano-scale interaction forces on the premature pull-in of real-life Micro-Electro-Mechanical Systems. *Microelectronics Reliability*, **52**, 271-281 (2012).
- I.56 E. Bertarelli, R. Ardito, E. Bianchi, K. Laganà, F. Procopio, L. Baldo, A. Corigliano, G. Dubini, R. Contro. A computational study for design optimization of an electrostatic micropump in stable and pull-in regime. *AES Technical Reviews, Part B: IJAMAIM* **1**, 19-25 (2010).
- I.57 R. Ardito, L. Baldassarre, A. Corigliano. Numerical assessment of simplified formulas for electrostatic simulation and design of Micro-Electro-Mechanical Systems (MEMS), *Asigurarea Calitatii*, **41**, 21-28, (2010).
- I.58 A. Tocchio, C. Comi, G. Langfelder, A. Corigliano, A. Longoni. Enhancing the Linear Range of MEMS Resonators for Sensing Applications. *IEEE Sensors Journal* **11** (12), art. no. 5871672, 3202-3210 (2011).
- I.59 S. Mariani, R. Martini, A. Ghisi, A. Corigliano, M. Beghi. Overall elastic properties of polysilicon films: A statistical investigation of the effects of polycrystal morphology. *International Journal for Multiscale Computational Engineering* **9** (3), 327-346, (2011).
- I.60 S. Mariani, R. Martini, A. Corigliano, M. Beghi. Overall elastic domain of thin polysilicon films. *Computational Materials Science* **50** (10), 2993-3004, (2011).
- I.61 F. Confalonieri, A. Corigliano, M. Dossi, M. Gornati. A domain decomposition technique applied to the solution of the coupled electro-mechanical problem. *Int. J. Numer. Meth. Engng* **93** (2), 137-159, (2013).
- I.62 S. Mariani, A. Ghisi, R. Martini, A. Corigliano, B. Simoni. Two-scale simulation of drop-induced failure of polysilicon MEMS sensors. *Sensors*, **11** (5), 4972-4989 (2011).
- I.63 A. Ghisi, S. Mariani, A. Corigliano, S. Zerbini. Physically-based reduced order modelling of a uni-axial polysilicon MEMS accelerometer. *Sensors* **12** (10), 13985-14003 (2012).
- I.64 R. Ardito, A. Corigliano, A. Frangi. Modelling of spontaneous adhesion phenomena in Micro-Electro-Mechanical Systems. *European J. of Mechanics*, **39**, 144-152 (2013).
- I.65 R. Ardito, E. Bertarelli, A. Corigliano, G. Gafforelli. On the application of piezolaminated composites to diaphragm micropumps. *Composite Structures*, **99**, 231-240 (2013).
- I.66 A. Corigliano, R. Ardito, C. Comi, A. Frangi, A. Ghisi, S. Mariani. Microsystems and Mechanics. *Procedia IUTAM* **10**, 138 – 160 (2014).
- I.67 A. Corigliano, M. Dossi, S. Mariani. Domain decomposition and model order reduction methods applied to the simulation of multiphysics problems in MEMS. *Computers & Structures*, **122**, 113-127 (2013).
- I.68 G. Salerno, S. Mariani, A. Corigliano, F. Caimmi, L. Andena, R. Frassine. Experimental-numerical assessment of impact-induced damage in cross-ply laminates. *Advanced Structured Materials* **1** (1), 493-504 (2012).
- I.69 F. Confalonieri, G. Cocchetti, A. Ghisi, A. Corigliano. A Domain Decomposition Method for the Simulation of Fracture in Polysilicon MEMS. *Microelectronics Reliability*, **53** (8), 1045-1054 (2013).
- I.70 C. Comi, A. Corigliano, A. Ghisi, S. Zerbini. A resonant micro accelerometer based on electrostatic stiffness variation. *Meccanica*, **48**, 8 (2013), 1893-1900 (2013).
- I.71 R. Ardito, L. Baldassarre, A. Corigliano, B. de Masi, A. Frangi, L. Magagnin. Experimental evaluation and numerical modeling of adhesion phenomena in polysilicon MEMS. *Meccanica*, **48**, 8, 1835-1844 (2013).
- I.72 A. Caspani, C. Comi, A. Corigliano, G. Langfelder, A. Tocchio. Compact biaxial micromachined resonant accelerometer. *J. of Micromechanics and Microengineering*. **23** (10), art. no. 105012, doi:10.1088/0960-1317/23/10/105012 (2013).

- I.73 A. Corigliano, M. Dossi, S. Mariani. Recent advances in computational methods for microsystems. *Advanced materials research*, 745, 13-25 (2013).
- I.74 S. Mariani, A. Corigliano, F. Caimmi, M. Bruggi, P. Bendiscioli, M. De Fazio. MEMS-based surface mounted health monitoring system for composite laminates. *Microelectronics Journal* 44 (7), 598-605, (2013).
- I.75 R. Ardito, A. Corigliano, A. Frangi, F. Rizzini. Advanced models for the calculation of capillary attraction in axisymmetric configurations. *European J. of Mechanics A/Solids*, 47, 298-308 (2014).
- I.76 M. Bagherinia, M. Bruggi, A. Corigliano, S. Mariani, E. Lasalandra. Geometry optimization of a Lorentz force, resonating MEMS magnetometer. *Microelectronics reliability*, 54 (6-7), 1192-1199 (2014).
- I.77 F. Confalonieri, A. Ghisi, G. Cocchetti, A. Corigliano. A domain decomposition approach for the simulation of fracture phenomena in polycrystalline microsystems. *Comp. Meth. Appl. Mech. Engng*, 277, 180, 218 (2014).
- I.78 M. Bagherinia, M. Bruggi, A. Corigliano, S. Mariani, D.A. Horsley, Mo Li, E. Lasalandra. An efficient earth magnetic field MEMS sensor: modeling, experimental results and optimization. *J. of Microelectromechanical Systems*. 24, 4, 887-895 (2015).
- I.79 A. Corigliano, M. Dossi, S. Mariani. Model order reduction and domain decomposition strategies for the solution of the dynamic elasto-plastic structural problem. *Comp. Meth. Appl. Mech. Engng*, 290, 127-155 (2015).
- I.80 G. Gafforelli, R. Xu, A. Corigliano, S.G. Kim. Modeling of a bridge-shaped nonlinear piezoelectric energy harvester. *Energy Harvesting and Systems*. 1(3-4), 179–187, DOI:10.1515/ehs-2014-0005 (2014).
- I.81 A. Ghisi, S. Mariani, A. Corigliano, G. Allegato, L. Oggioni. A three-scale approach to the numerical simulation of metallic bonding for MEMS packaging. *Microelectronics Reliability*. 54, 2039-2043 (2014).
- I.82 A. Caspani, C. Comi, A. Corigliano, G. Langfelder, V. Zega, S. Zerbini. Dynamic non-linear behaviour of torsional resonators in MEMS. *J. of Micromechanics and Microengineering*. 24 (2014) 095025 (9pp). DOI: doi:10.1088/0960-1317/24/9/095025 (2014).
- I.83 M. Kaminski, A. Corigliano. Numerical solution of the Duffing equation with random coefficients. *Meccanica*, 50 (7), 1841-1853 (2014).
- I.84 G. Gafforelli, R. Xu, A. Corigliano, S.G. Kim. Experimental verification of a bridge-shaped, nonlinear vibration energy harvester. *Applied Physics Letters*, 105, 20, 203901-4 (2014).
- I.85 S.H. Nitzan, V. Zega, M. Li, C. H. Ahn, A. Corigliano, T.W. Kenny, D.A. Horsley. Self-induced parametric amplification arising from nonlinear elastic coupling in a micromechanical resonating disk gyroscope. *Scientific Reports*, 5, 9036, DOI: 10.1038/srep09036 (2015).
- I.86 V. Zega, S. Nitzan, M. Li, C. Ahn, E. Ng, V. Hong, Y. Yang, T. Kenny, A. Corigliano, D. Horsley. Predicting the Closed-Loop Stability and Oscillation Amplitude of Nonlinear Parametrically-Amplified Oscillators. *Applied Physics Letters*, 106, 23, 233111 (2015).
- I.87 G. Gafforelli, R. Ardito, A. Corigliano. Improved one-dimensional model of piezoelectric laminates for energy harvesters including three dimensional effects. *Composite Structures*, 127, 369-381 (2015).
- I.88 R. Ardito, A. Frangi, F. Rizzini, A. Corigliano. Evaluation of adhesion in microsystems using equivalent rough surfaces modeled with spherical caps. *European J. of Mechanics A/Solids*, 57, 121-131, (2016).
- I.89 C. Comi, A. Corigliano, V. Zega, S. Zerbini. Non linear response and optimization of a new z-axis resonant micro-accelerometer. *Mechatronics*, 40, 235-243, (2016).
- I.90 C. Comi, A. Corigliano, G. Langfelder, V. Zega, S. Zerbini. Sensitivity and temperature behavior of a novel z-axis differential resonant micro accelerometer. *J. of Micromechanics and Microengineering*. 26, DOI: 10.1088/0960-1317/26/3/035006 (2016).
- I.91 A. Corigliano, M. Dossi, S. Mariani. Coupled Domain Decomposition – Proper Orthogonal Decomposition methods for the simulation of quasi-brittle fracture processes. *Advanced Modelling and Simulation in Engineering Sciences*, 3:28, DOI 10.1186/s40323-016-0081-9 (2016).
- I.92 R. Ardito, A. Corigliano, G. Gafforelli, C. Valzasina, F. Procopio, R. Zafalon. Advanced Model for Fast Assessment of Piezoelectric Micro Energy Harvesters. *Frontiers in Materials* 3:17. doi: 10.3389/fmats.2016.00017 (2016).
- I.93 M. Bruggi, V. Zega, A. Corigliano. Synthesis of auxetic structures using a micropolar material model. *Structural and multidisciplinary optimization*, 55, 1 (2017).
- I.94 L. D'Alessandro, E. Belloni, R. Ardito, A. Corigliano, F. Braghin. Modeling and experimental verification of an ultra-wide bandgap in 3D phononic crystals, *Applied Physics Letters*, 109 (22), 221907 (2016).
- I.95 N. Robuschi, F. Braghin, A. Corigliano, A. Ghisi, A. Tasora. On the Dynamics of a High Frequency Oscillator for Mechanical Watches. *Mechanism and Machine Theory*, 117, 276-293, (2017).
- I.96 L. D'Alessandro, E. Belloni, R. Ardito, F. Braghin, A. Corigliano. Mechanical low-frequency filter via modes separation in 3D periodic structures. *Applied Physics Letters*, 111, (23), 231902 (2017).
- I.97 V. Zega, C. Credi, R. Bernasconi, G. Langfelder, L. Magagnin, M. Levi, A. Corigliano. The first 3D-printed z-axis accelerometers with differential capacitive sensing. *IEEE Sensors*, 18, 1, 53-60. (2018).
- I.98 J. Zhang, Y. Wang, V. Zega, Y. Su, A. Corigliano. Nonlinear dynamics of a differential resonant accelerometer under varying temperature *J. of Micromechanics and Microengineering*. 28(7),075004 (2018).

- I.99** G. Salerno, S. Mariani, A. Corigliano. Reduced order modeling of composite laminates through solid-shell coupling. *Journal of Aerospace Technology and Management*. 9(3), 397-403 (2017).
- I.100** L. D'Alessandro, V. Zega, R. Ardito, A. Corigliano. 3D auxetic single material periodic structure with ultra-wide tunable bandgap *Scientific Reports*, 8 (1), 2262 (2018).
- I.101** G. Massimino, A. Colombo, L. D'Alessandro, F. Procopio, R. Ardito, M. Ferrera, A. Corigliano. Multiphysics modelling and experimental validation of an air-coupled array of PMUTs with residual stresses. *J. of Micromechanics and Microengineering*. 28 (5), 054005 (2018).
- I.102** R. Ramachandramoorthy, M. Milan, Z. Lin, A. Corigliano, H. Espinosa. Design of Piezo-MEMS for High Strain Rate Nanomechanical Experiments. *Extreme mechanics Letters*. 20, 14-20 (2018).
- I.103** V. Zega, C. Comi, P. Minotti, G. Langfelder, L. Falorni, A. Corigliano. A new MEMS three-axial frequency-modulated (FM) gyroscope: a mechanical perspective. *European J. of Mechanics A/Solids*. 70, 203-212 (2018).
- I.104** M. Bruggi, A. Corigliano. Optimal 2D auxetic micro-structures with band gap. *Meccanica*, 54(5), 1-27 (2019).
- I.105** L. D'Alessandro, R. Ardito, F. Braghin, A. Corigliano. Low frequency 3D ultra-wide vibration attenuation via elastic metamaterial. *Scientific Reports*, 9(1),8039 (2019).
- I.106** V. Zega, M. Invernizzi, R. Bernasconi, F. Cuneo, G. Langfelder, L. Magagnin, M. Levi, A. Corigliano. The first 3D-printed and wet metallized three-axis accelerometer with differential capacitive sensing. *IEEE Sensors Journal* 19(20),8744267, 9131-9138, (2019).
- I.107** V. Zega, A. Nastro, M. Ferrari, R. Ardito, V. Ferrari, A. Corigliano. Design, fabrication and experimental validation of a MEMS periodic auxetic structure. *Smart Materials and Structures* 28(9),095011, (2019).
- I.108** J.M. De Ponti, N. Paderno, R. Ardito, F. Braghin, A. Corigliano. Experimental and numerical evidence of comparable levels of attenuation in periodic and a-periodic metastructures. *Applied Physics Letters*, 115(3), 031901, (2019).
- I.109** S. A. F. Farshchi Yazdi, A. Corigliano, R. Ardito. 3-D Design and Simulation of a Piezoelectric Micropump. *Micromachines*, 10(4),259, (2019).
- I.110** C. Comi, V. Zega, A. Corigliano. Non-linear mechanics in resonant inertial micro sensors. *Int. J. of Non-Linear Mechanics*, 120,103386, (2020).
- I.111** G. Massimino, A. Colombo, R. Ardito, F. Quaglia, A. Corigliano. On the Effects of Package on the PMUTs Performances - Multiphysics Model and Frequency Analyses. *Micromachines*, 11, 307, (2020).
- I.112** J.M. De Ponti, A. Colombi, R. Ardito, F. Braghin, A. Corigliano, R.V. Craster. Graded elastic metasurface for enhanced energy harvesting. *New Journal of Physics* 22(1), 013013, (2020).
- I.113** J.M. De Ponti, E. Riva, R. Ardito, F. Braghin, A. Corigliano. Wide low frequency bandgap in imperfect 3D modular structures based on modes separation. *Mech. Res. Comm.*, 105, April, 103512, (2020).
- I.114** Z. Yao, R. Zhao, V. Zega, A. Corigliano. A metaplate for complete 3D vibration isolation. *European J. of Mechanics A/Solids*. 84,104016, (2020).
- I.115** L. Rosafalco, A. Manzoni, S. Mariani, A. Corigliano. Fully Convolutional Networks for Structural Health Monitoring through Multivariate Time Series Classification. *Advanced Modeling and Simulation in Engineering Sciences*. 7(1), 38, (2020).
- I.116** L. D'Alessandro, A.O. Krushynska, R. Ardito, N.M. Pugno, A. Corigliano. A design strategy to match the band gap of periodic and aperiodic metamaterials. *Scientific Reports*, 10(1), 16403, (2020).
- I.117** Z. Yao, V. Zega, Y. Su, Y. Zhou, J. Ren, J. Zhang, A. Corigliano. Design, fabrication and experimental validation of a metaplate for vibration isolation in MEMS. *JMEMS*, 29, 5, 1401-1410, (2020).
- I.118** G. Massimino, F. Quaglia, A. Corigliano, A. Frangi. Model Order Reduction for the Analysis of Large Arrays of PMUTs in Water. *Applied Acoustics*, 182, 108231 (2021).
- I.119** J. M. De Ponti, A. Colombi, E. Riva, R. Ardito, F. Braghin, A. Corigliano, R.V. Craster. Experimental investigation of amplification, via a mechanical delay-line, in a rainbow-based metamaterial for energy harvesting. *Applied Physics Letters*, 117(14), 143902, (2020).
- I.120** G. Massimino, A. Colombo, R. Ardito, F. Quaglia, A. Corigliano. Piezo-Micro-Ultrasound-Transducers for air-coupled arrays: modelling and experiments in the linear and nonlinear regimes. *Extreme Mechanics Letters*, 40, 100968, (2020).
- I.121** G. Massimino, B. Lazarova, F. Quaglia, A. Corigliano. Air-coupled PMUTs Array with Residual Stresses: Experimental Tests in the Linear and Non-Linear Dynamic Regime. *Int. J. of Smart and Nano Materials*, 11(4), 387-399, (2020).
- I.122** Y. Deng, Z. Li, H. Zhang, A. Corigliano, A.C.C. Lam, C. Hansapinyo, Z. Yan. Experimental and analytical investigation on flexural behaviour of RC beams strengthened with NSM CFRP prestressed concrete prisms. *Composite Structures* 257, 113385, (2021).
- I.123** S. A. F. Farshchi Yazdi, M. Garavaglia, A. Ghisi, A. Corigliano. A New Approach for the Control and Reduction of Warpage and Residual Stresses in Bonded Wafer. *Micromachines*, 12(4), 361 (2021).
- I.124** D. Faraci, A. Ghisi, S. Adorno, A. Corigliano. Top-down, multi-scale numerical simulation of MEMS microphones under guided free fall tests. *Microelectronics Reliability* 121, 114129, (2021).

- I.125** L. Rosafalco, M. Torzoni, A. Manzoni, S. Mariani, A. Corigliano. Online Structural Health Monitoring by Model Order Reduction and Deep Learning Algorithm. *Computers and Structures*, 255, 106604, (2021).
- I.126** C. Gazzola, S. Caverni, A. Corigliano. From Mechanics to Acoustics: Critical Assessment of a Robust Metamaterial for Acoustic Insulation Application. *Applied Acoustics*, 183, 108311, (2021).
- I.127** V. Zega, L. Martinelli, R. Casati, E. Zappa, G. Langfelder, A. Cigada, A. Corigliano. A 3D printed Ti6Al4V alloy uniaxial capacitive accelerometer. *IEEE Sensors Journal*, 21(18), 19640-19646, (2021).
- I.128** L. Rosafalco, A. Manzoni, S. Mariani, A. Corigliano. An Autoencoder-based Deep Learning Approach for Load Identification in Structural Dynamics. *Sensors*, 21(12), 4207, (2021).
- I.129** A. Nastro, N. Pienazza, M. Baù, P. Aceti, M. Rouval, R. Ardito, M. Ferrari, A. Corigliano, V. Ferrari. Wearable Ball-Impact Multi-Converter Piezoelectric Harvesters to Scavenge Energy from Human Motion, *Sensors*, 22(3), 772, (2022).
- I.130** J. M. De Ponti, L. Iorio, E. Riva, R. Ardito, F. Braghin, A. Corigliano. Selective mode conversion and rainbow trapping via graded elastic waveguides. *Physical Review Applied*, 16(3), 034028, (2021).
- I.131** M. Rosso, A. Corigliano, R. Ardito. Numerical and Experimental Evaluation of the Magnetic Interaction for Frequency up-Conversion in Piezoelectric Vibration Energy Harvesters. *Meccanica*, 57(5), 1139-1154 (2022).
- I.132** J.M. de Ponti, L. Iorio, E. Riva, F. Braghin, A. Corigliano, R. Ardito. Enhanced Energy Harvesting of Flexural Waves in Elastic Beams by Bending Mode of Graded Resonators. *Frontiers Materials*, 8, 745141, (2021).
- I.133** V. Zega, L. Pertoldi, T. Zandrini, R. Osellame, C. Comi, A. Corigliano. Microstructured Phononic Crystal Isolates from Ultrasonic Mechanical Vibrations, *Applied Sciences (Switzerland)*, 12(5), 2499 (2022).
- I.134** M. Torzoni, L. Rosafalco, A. Manzoni, S. Mariani, A. Corigliano. SHM under varying environmental conditions: An approach based on model order reduction and deep learning. *Computers & Structures*, 266, 106790, (2022).
- I.135** M. Antonacci, E. Riva, A. Frangi, A. Corigliano, V. Zega. Planar GRIN lenses: numerical modelling and experimental validation. *J. of Sound and Vibration*, 537, 117217 (2022).
- I.136** R. Bernasconi, D. Hatami, H. N. Hosseinabadi, V. Zega, A. Corigliano, R. Suriano, M. Levi, G. Langfelder, L. Magagnin. Hybrid Additive Manufacturing of a Piezopolymer-Based Inertial Sensor. *Additive Manufacturing* 59,103091, (2022).
- I.137** C. Gazzola, S. Caverni, A. Corigliano. Design and Modeling of a Periodic Single-Phase Sandwich Panel for Acoustic Insulation Applications. *Frontiers in Materials*, 9,1005615 (2022).
- I.138** O.O.M. Abdalla, G. Massimino, Alessandro S. Savoia, F. Quaglia, A. Corigliano. Efficient Modelling and Simulation of PMUT Arrays in Various Ambients. *Micromachines*, 13(6), 962. <https://doi.org/10.3390/mi13060962>, (2022).
- I.139** A. Ghisi, D. Faraci, S. Adorno, A. Corigliano. The role of anchor imposed motion in the failure of MEMS microphones under free fall tests. *Microelectronics Reliability*, 135, 114584 (2022).
- I.140** M. Rosso, A. Nastro, M. Baù, M. Ferrari, V. Ferrari, A. Corigliano, R. Ardito. Piezoelectric energy harvesting from low-frequency vibrations based on magnetic plucking and indirect impacts. *Sensors* 22(15), 5911, (2022).
- I.141** M. Kaminsky, A. Corigliano, Shannon entropy in stochastic analysis of some MEMS. *Energies*, 15(15), 5483 (2022).
- I.142** F. Gatti, L. Rosafalco, G. Colombera, S. Mariani, A. Corigliano. Multi-storey shear type buildings under earthquake loading: adversarial learning-based prediction of the transient dynamics and damage classification. *Soil Dynamics and Earthquake Engineering*, 173, 108141 (2023).
- I.143** J.M. De Ponti, L. Iorio, G. J. Chaplain, A. Corigliano, R.V. Craster, R. Ardito. Tailored topological edge waves via chiral hierarchical rainbow metamaterials. *Phys. Rev. Appl.* 19, 034079 (2023).
- I.144** S. A. F. Farshchi Yazdi, M. Garavaglia, A. Ghisi, A. Corigliano. An Experimental and Numerical Study on Glass Frit Wafer-to-Wafer Bonding. *Micromachines*, 14(1),165 (2023).
- I.145** O.M.O. Abdalla, G. Massimino, F. Quaglia, M. Passoni, A. Corigliano. PMUTs Arrays for Structural Health Monitoring of Bolted-Joints. *Micromachines*, 14(2), 311, [doi.org/10.3390/mi14020311](https://doi.org/10.3390/mi14020311) (2023).
- I.146** E. Riva, J. M. De Ponti, J. Marconi, F. Braghin, R. Ardito, A. Corigliano. Adiabatic limit for scattering-free waveguiding in space-graded arrays of micro-resonators. *European J. of Mechanics A/Solids*, 105162. *In press* (2023).
- I.147** L. Rosafalco, J. M. De Ponti, L. Iorio, R. Ardito, A. Corigliano, Optimised graded metamaterials for mechanical energy confinement and amplification via reinforcement learning. *European J. of Mechanics A/Solids*, 99, 104947 (2023).
- I.148** P. Aceti, M. Rosso, R. Ardito, N. Pienazza, A. Nastro, M. Baù, M. Ferrari, M. Rouvala, V. Ferrari, A. Corigliano. Optimization of an Impact-Based Frequency Up-Converted Piezoelectric Vibration Energy Harvester for Wearable Devices. *Sensors*, 23(3),1391 (2023).
- I.149** C. Gazzola, V. Zega, F. Cerini, S. Adorno, A. Corigliano. On the design and modeling of a full-range piezoelectric MEMS speaker for in-ear applications, *JMEMS*, 32, 6, 626-637, DOI: 10.1109/JMEMS.2023.3312254, (2023).

- I.150** F. Maspero, J. M. De Ponti, L. Iorio, A. Esposito, R. Bertacco, A. di Matteo, A. Corigliano, R. Ardito. Phononic graded meta-MEMS for elastic wave amplification and filtering. *JMEMS*, 32, 6, 522-528, DOI: 10.1109/JMEMS.2023.3320198, (2023).
- I.151** L. Rosafalco, J. M. De Ponti, L. Iorio, R. V. Craster, R. Ardito, A. Corigliano. Reinforcement learning optimisation for graded metamaterial design using a physical-based constraint on the state representation and action space. *Scientific Reports*, 13(1), 21836, (2023).
- I.152** A. Corigliano. Discovering kirigami patterns. *Nature Computational Science, News & Views – Invited*, DOI: 10.1038/s43588-023-00452-z, (2023).
- I.153** L. Iorio, J. M. De Ponti, A. Corigliano, R. Ardito. Bandgap widening and resonator mass reduction through wave locking. *Mechanics Research Communications*, 134,104200, (2023).
- I.154** O. M. O. Abdalla, G. Massimino, C. D’Argenzio, M. Colosio, M. Soldo, F. Quaglia, A. Corigliano. An Experimental and Numerical Study of Crosstalk Effects in PMUT Arrays. *IEEE Sensors Journal*, 23, 23, 29029-29041, DOI: 10.1109/JSEN.2023.3324202, (2023).
- I.155** L. Rosafalco, S. E. Azam, S. Mariani, A. Corigliano. System identification via unscented Kalman filtering and model class selection. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, A: Civil Engng. 10(1), 04023063* (2024).
- I.156 G. Garayalde, M. Torzoni, M. Bruggi, A. Corigliano. Real-time topology optimization via learnable mappings. *Submitted* (2023).
- I.157 M. Rosso, E. Kohtanen, A. Corigliano, R. Ardito, A. Erturk. Nonlinear phenomena in magnetic plucking of piezoelectric vibration energy harvesters. *Sensors and Actuators: A. Physical*. 362, 114667 (2023).
- I.158 C. Gazzola, V. Zega, A. Corigliano, P. Lotton, M. Melon, A reduced-order-model-based equivalent circuit for piezoelectric MEMS loudspeakers modeling. *The Journal of the Acoustical Society of America. To appear* (2024).

## 2. Patents and patents pending

- P.1 C. Comi, A. Corigliano, B. Simoni. Accelerometro risonante MEMS con migliorate caratteristiche elettriche. Politecnico di Milano (50%) co-shared with STMicroelectronics (50%). Patent deposit n° TO2009A000687. Submitted 7 September (2009). Patent n° 0001395419. International extension (MEMS resonant accelerometer having improved electrical characteristics), U.S. Patent n° 12/875000, submitted 2 September (2010). Patent n° US 8516889 B2.
- P.2 C. Comi, A. Corigliano, S. Zerbinì. Struttura di accelerometro biassiale risonante di tipo microelettromeccanico (Resonant biaxial accelerometer structure of the microelectromechanical type). Politecnico di Milano (50%) co-shared with STMicroelectronics (50%). Patent deposit n° TO2010A000944. Submitted 26 November (2010).
- P.3 C. Comi, A. Corigliano, S. Zerbinì. Struttura di rilevamento perfezionata per un accelerometro risonante ad asse z. Politecnico di Milano (50%) co-shared with STMicroelectronics (50%). Patent n° TO2011A000782, Submitted 31 August (2011). International extension (Improved detection structure for a z-axis resonant accelerometer), n° PCTIB2012054497, submitted 31 August (2012).
- P.4 A. Corigliano, B. De Masi, A. Merassi. Sensore microelettromeccanico con massa di rilevamento non conduttiva e metodo di rilevamento mediante un sensore microelettromeccanico. Politecnico di Milano (50%) co-shared with STMicroelectronics (50%). Patent deposit n° TO2011A000881, Submitted 3 October (2011). Internazionale extension (Microelectromechanical sensor with non-conductive sensing mass, and method of sensing through a microelectromechanical sensor), U.S. Patent n° 13/612583, submitted 12 September, China Patent deposit n° 201210385131.7, submitted 8 October (2012).
- P.5 L. Baldassarre, C. Comi, A. Corigliano. Struttura integrata di rilevamento risonante di accelerazione e velocità angolare e relativo dispositivo sensore mems. Politecnico di Milano (50%) co-shared with STMicroelectronics (50%). Patent deposit n° TO2012A000855, submitted 28 September (2012).
- P6 R. Ardito, A. Corigliano, G. Gafforelli, F. Procopio, C. Valzasina. Trasduttore piezoelettrico per un sistema di raccolta dell’energia e metodo per la raccolta di energia mediante un trasduttore piezoelettrico. Politecnico di Milano (50%) co-shared with STMicroelectronics (50%). Patent deposit n° TO2013A000652, submitted 31 July (2013).
- P7 A. Corigliano, F. Procopio. Sensore piezoelettrico integrato per il rilevamento di forze agenti in piano, quali urti, accelerazioni, forze rotazionali. Politecnico di Milano (50%) co-shared with STMicroelectronics (50%). Patent deposit n° 102015902349412, submitted April 30 (2015).
- P8 A. Corigliano, R. Ardito, E. Bertarelli, M. Ferrera. Micropompa con attuazione elettrostatica. Politecnico di Milano. Patent filed, (2015).
- P.9** A. Corigliano, R. Ardito; F. Braghin, L. D’Alessandro, E. Belloni. Dispositivo a modulo per l’isolamento di vibrazioni a bassa frequenza e ad ampio spettro, e relativa struttura periodica. Politecnico di Milano. Patent filed, n° 102017000113264 submitted October 09 (2017).
- P.10** L. D’Alessandro, V. Zega, E. Riva, R. Ardito, F. Braghin, A. Corigliano. Dispositivo a modulo per l’isolamento vibro-acustico a bassa frequenza e ad ampio spettro, e relativa struttura periodica. Politecnico di Milano. Patent filed, n° 102018000001510 submitted January 19 (2018).

- P.11** Zhichao Yao, Valentina Zega, Yan Su, Jing Zhang, Alberto Corigliano. Dispositivo MEMS con piastra d'isolamento da vibrazioni. MEMS device with vibration-insulating plate. Domanda di brevetto depositata, (2020).
- P.12** R. Ardito, A. Corigliano, F. Braghin, J. De Ponti, R. Craster, A. Colombi. Dispositivo multi-risonatore per uso in sistemi di raccolta energia o in un sistema di azionamento. Domanda di brevetto depositata, (2021).
- P.13** F. Braghin, G. Capellari, S. Caverni, A. Corigliano, L. D'Alessandro, C. Gazzola. Modulo di connessione per dispositivi di schermatura del rumore. Domanda di brevetto depositata (2022).

### 3. Books

- B.1 G. Maier, C. Comi, A. Corigliano, U. Perego, H. Hübel. Bounds and estimates on inelastic deformations: a study of their practical usefulness. EUR 16555 EN, *European Commission, Nuclear Science and Technology*, ISBN 92-827-5006-X. Par. 5.4, pagg. 101-110; Ch. 7-8, pp. 133-174, App. B pp. 235-278 (1996).
- B.2 G. Maier, C. Comi, A. Corigliano, U. Perego, S. Pycko, P. White. Simplified inelastic analysis methods in structural dynamics: a study of their practical usefulness. Rapporto Finale contratto ETNU-92-0055-I; Commissione Europea. Directorate for Science, Research and Development; Working Group Codes and Standards AG 2, (1996).
- B.3 A. Corigliano, A. Taliercio. Computational Mechanics. Solution of the linear elastic problem. (In Italian). Progetto Leonardo, Bologna, ISBN 88-7488-188-6, (2005).
- B.4 A. Corigliano, R. Ardito, C. Comi, A. Frangi, A. Ghisi, S. Mariani. Mechanics of Microsystems. 424 pag., Wiley, ISBN 978-1-119-05383-5, (2018).

### 4. Italian Scientific Academies

- A.1 C. Comi, A. Corigliano. Su certe delimitazioni in dinamica elastoplastica con incrudimento non lineare. *Rend. Sc. Istituto Lombardo*, **A 123**, 67-97 (1989).
- A.2 C. Comi, A. Corigliano. Estensione di un teorema sull'adattamento in dinamica elastoplastica. *Rend. Mat. Acc. Lincei*, **1(9)**, 151-159 (1990).
- A.3 A. Corigliano, C. Comi. Estensione a leggi costitutive a variabili interne dei teoremi di inadattamento in dinamica strutturale elastoplastica. *Rend. Mat. Acc. Lincei*, **1(9)**, 265-273 (1990).
- A.4 A. Corigliano, U. Perego. Unconditionally stable mid-point integration in elastic-plastic dynamics. *Rend. Mat. Acc. Lincei* **1(9)**, 367-376 (1990).
- A.5 A. Corigliano, G. Maier e S. Pycko. Kinematic criteria of dynamic shakedown extended to nonassociative constitutive laws with saturation non-linear hardening. *Rend. Mat. Acc. Lincei*, s. 9, **6**, 55-64 (1995).
- A.6 A. Corigliano, S. Mariani. Un metodo semplificato per la simulazione di prove frattura. *Rend. Sc. Istituto Lombardo*, **A 130**, 143-162, (1996).

### 5. Paper on books.

- V.1 C. Comi, A. Corigliano, G. Maier. Delimitazioni nell'adattamento dinamico e teoremi di estremo per passo finito olonomo in elastoplasticità con incrudimenti non lineari cinematico ed isotropo. *Omaggio a Giulio Ceradini*, Università di Roma La Sapienza, 237-248 (1988).
- V.2 C. Comi, A. Corigliano, G. Maier. Convergence of the Newton-Raphson method in elastic-plastic-softening structural dynamics. *The finite element method in the 1990's*, E. Oñate, J. Periaux, A. Samuelsson, (eds.), CIMNE Barcelona & Springer-Verlag, 258-265 (1991).
- V.3 A. Corigliano, Elasto-plastic interface law for non-homogeneous materials: formulation, sensitivity analysis, parameter identification. B.L. Karihaloo (Ed.), Proceedings IUTAM Symposium: Analytical and computational fracture mechanics of non-homogeneous materials. Cardiff 18-22 June 2001, 233-242, KluwerAc Publishers, (2002).
- V.4 L.J. Ernst, W. Van Driel, O. V. d. Sluis, A. Corigliano, A.A.O. Tay, N. Iwamoto, H. Fan, M M. F. Yuen. Fracture and delamination in microelectronic devices. In *Smart systems integration and reliability*. B. Michel, K.D. Lang Eds, Goldenbogen, Dresden, 634-663, (2010), ISBN 978-3-932434-77-8.

### 6. Chapters on international books

- CH.1 A. Corigliano. Damage and Fracture Mechanics Techniques for Composite Structures. *Comprehensive Structural Integrity*, I. Milne, R.O. Ritchie, B. Karihaloo (editors), Vol. 3, Ch. 9, ISBN 0-08-044158-0, Elsevier Science, 459-539, (2003).
- CH.2 A. Corigliano, F. Cacchione, A. Frangi, S. Zerbini, M. Ferrera. Mechanical characterization of polysilicon at the micro-scale through on-chip tests. In *Advances in Multiphysics Simulation and Experimental Testing of MEMS*, A. Frangi, N. Aluru, C. Cercignani, S. Mukherjee (editors), Ch. 12, 427-454, ISBN-13 978-1-86094-862-6, Imperial College Press, London, (2008).
- CH.3 A. Corigliano, F. Cacchione, S. Zerbini. Mechanical characterization of low dimensional structures through on-chip tests. In *Micro and Nano Mechanical Testing of Materials and Devices*, F. Yang, J.C.M. Li, (editors), Ch. 13, 349-383, ISBN 978-0-387-78700-8, Springer, (2008).

- CH.4 G. Salerno, S. Mariani, A. Corigliano, F. Caimmi, L. Andena, R. Frassine. Experimental-numerical investigation of impact-induced failure in layered composites. In "Computer Methods in Mechanics – Lectures of the CMM 2009", edited by M. Kuczma and K. Wilmanski, 493-504, Springer-Verlag Berlin, Heidelberg, (2010), ISBN 978-3-642-05240-8.
- CH.5 S. Mariani, A. Ghisi, R. Martini, A. Corigliano, B. Simoni. Multi-scale simulation of shock-induced failure of polysilicon MEMS. In Advances in Electrical Engineering Research. Volume 1. Ch. 8, 267-291, Nova Science publishers (2011), ISBN 978-1-61728-496-0.
- CH.6 L. Rosafalco, A. Manzoni, S. Mariani, A. Corigliano. Combined Model Order Reduction Techniques and Artificial Neural Network for Data Assimilation and Damage Detection in Structures. *Intelligent Systems, Control and Automation: Science and Engineering*, In: *Computational Sciences and Artificial Intelligence in Industry*, Editors: T. Tuovinen, J. Periaux, P. Neittaanmäki, 76, 247-259, Springer, (2022).
- CH.7 L. Rosafalco, M. Torzoni, A. Manzoni, S. Mariani, A. Corigliano. A Self-adaptive Hybrid Model/data-Driven Approach to SHM Based on Model Order Reduction and Deep Learning, In: *Structural Health Monitoring Based on Data Science Techniques*, Editors: A. Cury, D. Ribeiro, F. Ubertini, M. Todd, 165-184, Springer, (2021).
- CH.8 C. Comi, A. Corigliano, A. Frangi, V. Zega. Linear and nonlinear mechanics in MEMS. In: *Silicon Sensors and Actuators. The Feynman roadmap*. Editors: B. Vigna, P. Ferrari, F.F. Villa, E. Lasalandra, S. Zerbini. 389-437, Springer, (2022).
- CH.9 A. Corigliano, A. Ghisi, S. Mariani, V. Zega. Mechanics of microsystems: A recent journey in a fascinating branch of mechanics. In: *50+ Years of AIMETA: A Journey Through Theoretical and Applied Mechanics in Italy*. 419-435, Springer, (2022).

## 7. Editing of special issues of International Journals

- E.1 A. Corigliano, N. Pugno. Micro- or Nano Mechanics. *Meccanica*, 48, 8, 1817-1818, (2013).

## 8. International conferences

- CI.1 G. Maier, C. Comi, A. Corigliano. Extremum properties of holonomic finite-step solutions in elasto-plasticity with nonlinear kinematic and isotropic hardening. *Advances in Plasticity 1989, Proc. 2nd Int Symp. on Plasticity and Its current Applications*, A. Khan, M. Tokuda, eds. Tsu, Japan, 31 July – 4 August, Pergamon Press, 99-102 (1989).
- CI.2 A. Corigliano, U. Perego. Convergent and unconditionally stable finite-step dynamic implicit analysis of elastoplastic structures. *Proceedings European Conference on New Advances in Computational Structural Mechanics*, Giens (France), 2-5 April, 577-584, (1991).
- CI.3 A. Corigliano, G. Bolzon. Numerical simulation of debonding phenomena in composites materials. Invited contribution at COMPLAS IV, 3-6 April 1995, Barcelona 1179-1190 (1995).
- CI.4 G. Bolzon, A. Corigliano. Simulation of quasi-brittle fracture based on embedded cracks and interface variables. *Proceedings: Joint Conference of Italian Group of Computational Mechanics and Ibero-Latin American Association of Computational Methods in Engineering*, Padova 25-27 September (1996).
- CI.5 A. Corigliano, G. Maier, S. Mariani, S. Testolina. Simulation of ductile crack processes based on geometrical parameters. *Proceedings: Joint Conference of Italian Group of Computational Mechanics and Ibero-Latin American Association of Computational Methods in Engineering*, Padova 25-27 September (1996).
- CI.6 G. Bolzon, A. Corigliano. An embedded-crack finite element approach to quasi-brittle fracture. *Proceedings IXth International Conference on Fracture*, Sidney, April 1-5 (1997).
- CI.7 A. Corigliano, M. Ricci, R. Contro. - Rate dependent delamination in polymer-matrix composites. Invited presentation at COMPLAS V, 17-20 March 1997, Barcelona (1997).
- CI.8 G. Bolzon, A. Corigliano - An interface variable formulation for embedded-crack finite elements. Invited presentation at COMPLAS V, 17-20 March 1997, Barcelona (1997).
- CI.9 A. Corigliano, G. Maier, S. Mariani. - Numerical simulation of ductile crack processes based on geometrical parameters. *Proceedings COMPLAS V*, 17-20 March 1997, Barcelona (1997).
- CI.10 U. Perego, G. Maier, A. Corigliano, S. Mariani. - Abaqus applications for research at the department of structural engineering of the Politecnico of Milan. *Proceedings Abaqus, user's conference*, 4-6 June, Milano (1997).
- CI.11 A. Corigliano, R. Frassine, M. Ricci. Rate-dependent interface models for the analysis of delamination and debonding in polymer-matrix composites. *Proceedings 1<sup>st</sup> Int. Conf. On Damage and Failure of Interfaces*. DFI-1. Vienna 22-24 September 1997. In: H.P. Rossmanith (ed.), *Damage and failure of interfaces*, Balkema, Rotterdam, (1997), 139-146.
- CI.12 A. Corigliano, R. Frassine, M. Ricci. Rate-dependent fracture properties in the delamination of polymer-matrix composites. *Proceedings: WCCM-4 on CD*, part III, section 6, paper 7, 29 June-2 July, Buenos Aires, (1998).
- CI.13 A. Corigliano, S. Mariani. Constitutive models for metals containing non-spherical voids. *Proceedings: WCCM-4 on CD*, part II, section 1, paper 8, 29 June-2 July, Buenos Aires, (1998).

- 
- CI.14 A. Corigliano, G. Maier, S. Mariani. A comparison of geometrical parameter and Gurson's model approaches to simulations of ductile fracture in pipelines. Proceedings: ECF 12, 14-18 September, Sheffield, 927-932 (1998).
- CI.15 S. Mariani, A. Corigliano. Effective properties of non-linear orthotropic porous ductile materials. Proceedings ICCM 12. 5-9 July, Paris (1999).
- CI.16 A. Corigliano, S. Mariani. Parameter identification of interface models for the simulation of debonding in composites. Proceedings ECCM '99 31 August- 3 September, Munich (1999).
- CI.17 S. Mariani, A. Corigliano. Micromechanical modeling of ductile tearing phenomena. Proceedings ECF 13, San Sebastian, 6-9 September 2000.
- CI.18 S. Mariani, A. Corigliano. Numerical simulation of ductile fracture phenomena: model calibration. Proceedings ECCOMAS 2000 (Complas 2000), Barcelona, 11-14 September 2000.
- CI.19 A. Corigliano, E. Papa, E. Rizzi. On the use of a syntactic foam as core for sandwich panels and as external coating for pressurised pipelines. Proceedings ECCOMAS 2000 (Complas 2000), Barcelona, 11-14 September 2000.
- CI.20 R. Giampieretti, A. Corigliano, G. Maier. Constitutive modelling of composites and laminates via homogenisation and parameter identification. Proceedings FRC 2000, New Castle upon Tyne 13-15 September 2000.
- CI.21 R. Giampieretti, C.G. Guida, A. Corigliano, S. Mariani, A. Catenacci. Cyclic bending tests on fiberglass, high strength, structural composites for electrical transmission lines. Proceedings FRC 2000, New Castle upon Tyne 13-15 September 2000.
- CI.22 A. Corigliano, Elasto-plastic interface law for non-homogeneous materials: formulation, sensitivity analysis, parameter identification. Proceedings: IUTAM Symposium: Analytical and computational fracture mechanics of non-homogeneous materials. Cardiff 18-22 June 2001.
- CI.23 A. Corigliano, Parameter identification of interface laws. Proceedings: WCCM V - Vienna, 7-12 July 2002, ISBN 3-9501554-0-6.
- CI.24 A. Corigliano, S. Mariani, A. Pandolfi. Rate-dependent interface models and dynamic delamination processes. Proceedings: *Third Joint Conference of Italian Group of Computational Mechanics and Ibero-Latin American Association of Computational Methods in Engineering*, Giulianova 24-26 June, (2002).
- CI.25 A. Corigliano, S. Mariani. Parameter identification of interface models for delamination analysis in the presence of dynamic loading. Proceedings: *Third Joint Conference of Italian Group of Computational Mechanics and Ibero-Latin American Association of Computational Methods in Engineering*, Giulianova 24-26 June, (2002).
- CI.26 A. Corigliano, U. Perego. Numerical evaluation of residual stresses in high speed train wheels. Proceedings Workshop IGF: Rolling Contact Fatigue, 163-170, Brescia 15 November 2002.
- CI.27 A. Villa, B. De Masi, A. Corigliano, A. Frangi, C. Comi. Mechanical characterization of epitaxial polysilicon in MEMS. Proceedings: *Second MIT Conference on Computational Fluid and Solid Mechanics*, Boston, June 2003, K.J. Bathe ed., vol. 1, pp. 722-726, Elsevier, (2003).
- CI.28 A. Corigliano, S. Mariani. The extended Kalman filter for model identification in impact dynamics. Proceedings: Complas 2003, Barcelona, 7-10 April (2003).
- CI.29 B. De Masi, A. Villa, A. Corigliano, A. Frangi, C. Comi, M. Marchi. On chip tensile test for epitaxial polysilicon. Proceedings: MEMS04, Maastricht, 25-29 January (2004).
- CI.30 F. Cacchione, B. De Masi, A. Corigliano, M. Ferrera. Rupture tests on polysilicon films through on-chip electrostatic actuation. Proceedings: Eurosime04, Brussels, 9-12 May (2004).
- CI.31 V. Carvelli, A. Corigliano. Transversal resistance of long fibre composites: influence of the fibre-matrix interface. Proceedings ECCM 11, Rhodes (Greece), May 31- June 3, (2004).
- CI.32 A. Corigliano, S. Mariani. Identification of laminate mechanical properties via extended Kalman filter. Proceedings: ICF11, Torino, March 20-25, (2005).
- CI.33 F. Cacchione, B. De Masi, A. Corigliano, M. Ferrera. Material characterization at the micro scale through on-chip tests. Proceedings: ICF11, Torino, March 20-25, (2005).
- CI.34 L. Andena, A. Corigliano, R. Frassine, S. Mariani. Mixed-mode crack growth in toughened PMMA. Proceedings: ICF11, Torino, March 20-25, (2005).
- CI.35 F. Cacchione, A. Corigliano, B. De Masi, M. Ferrera. Out of plane flexural behaviour of thin polysilicon films: mechanical characterization and application of the Weibull approach. Proceedings: Eurosime05, Berlin, 18-20 April (2005).
- CI.36 A. Frangi, A. Corigliano, G. Spinola. On the evaluation of damping forces in MEMS. Atti Eurosime05, Berlin, 18-20 April (2005).
- CI.37 F. Cacchione, B. De Masi, A. Corigliano, M. Ferrera, A. Vinay. In-plane and out-of-plane mechanical characterization of thin polysilicon. Proceedings: NSTI Nanotech, Anaheim, CA, U.S.A., May 8-12 (2005).
- CI.38 A. Corigliano, A. Ghisi, S. Mariani. Parameter identification of nonlinear constitutive laws by an unscented Kalman filter. Proceedings: Complas 2005, Barcelona, 5-8 September (2005).



- 
- CI.39 A. Corigliano, A. Ghisi, S. Mariani, Impact induced composite delamination: state and parameter identification via unscented kalman filter. Proceedings: ECF16, Alexandroupoulos, 3-7 July (2006).
- CI.40 A. Corigliano, F. Cacchione, A. Frangi, S. Zerbini, Micro-scale simulation of impact rupture in polysilicon Mems. Proceedings: ECF16, Alexandroupoulos, 3-7 July (2006).
- CI.41 A. Corigliano, F. Cacchione, A. Frangi, S. Zerbini. Simulation of Impact Rupture in Polysilicon Mems. Proceedings: Eurosime06, Como, 24-26 April (2006).
- CI.42 A. Ghisi, F. Fachin, S. Mariani, A. Corigliano, S. Zerbini. Multi-scale modeling of shock induced failure of polysilicon MEMS. Proceedings: Eurosime07, London, 16-18 April (2007).
- CI.43 F. Cacchione, A. Corigliano, S. Zerbini. Parametric study of fracture properties in polycrystalline MEMS. Proceedings: Eurosime07, London, 16-18 April (2007).
- CI.44 R. Ardito, C. Comi, A. Corigliano, A. Frangi – Intrinsic dissipation in microelectromechanical systems, Proceedings *Eurosime08* 20-23 April, Freiburg, Germany, 505-512, (2008).
- CI.45 Ghisi, A., Kalicinski, S., Mariani, S., De Wolf, I., Corigliano, A.. Numerical-experimental comparison of low-g and high-g tests on a polysilicon MEMS accelerometer. *Proceedings Eurosime08*, 20-23 April, Freiburg, April, (2008).
- CI.46 S. Mariani, A. Ghisi, A. Corigliano, S. Zerbini. Failure analysis of polysilicon mems sensors exposed to shocks. Proceedings *Eurosensors08*, Dresda, 8-10 September, (2008).
- CI.47 R. Ardito, A. Corigliano, B. De Masi, A. Frangi, S. Zerbini. An Experimental Assessment of Casimir Force Effect in Micro-electromechanical Systems. IEEE Sensors 2008, 26-29 ottobre, Lecce, (2008).
- CI.48 G. Langfelder, A. Longoni, F. Zaraga, A. Corigliano, A. Ghisi, A. Merassi. A Polysilicon Test Structure for Fatigue and Fracture Testing in Micro Electro Mechanical Devices. IEEE Sensors 2008, 26-29 ottobre, Lecce, (2008).
- CI.49 R. Ardito, L. Baldassarre and A. Corigliano. On the Numerical Evaluation of Capacitance and Electrostatic Forces in MEMS. Proceedings *Eurosime09*, 27-29 aprile, Delft, (2009).
- CI.50 R. Ardito, A. Corigliano, A. Frangi. On the Analysis of Spontaneous Adhesion in MEMS Proceedings *Eurosime09*, 27-29 aprile, Delft, (2009).
- CI.51 S. Mariani, A. Ghisi, R. Martini, A. Corigliano, B. Simoni. A Multiscale-Stochastic Finite Element Approach to Shock-induced Polysilicon MEMS Failure. Proceedings *Eurosime09*, 27-29 aprile, Delft, (2009).
- CI.52 G. Salerno, S. Mariani, A. Corigliano. Impact-induced composite failure: an experimental-numerical investigation. 2<sup>nd</sup> Eccomas thematic conference on mechanical response of composites. 1-3 aprile, London (2009).
- CI.53 E. Bertarelli, R. Ardito, M. Cioffi, K. Laganà, F. Procopio, L. Baldo, A. Corigliano, R. Contro, G. Dubini. Numerical analysis for design optimization of an electrostatic micropump. Proceedings Coupled problems 2009, 8-10 June, Ischia, (2009).
- CI.54 E. Bertarelli, R. Ardito, M. Cioffi, K. Laganà, F. Procopio, L. Baldo, A. Corigliano, R. Contro, G. Dubini. Design optimization of an electrostatic micropump: a multi-physics computational approach. 2<sup>nd</sup> South-East European conference on computational Mechanics. 22-24 June, Rodi, (2009).
- CI.55 C. Comi, A. Corigliano, A. Merassi, B. Simoni. A surface micromachined resonant accelerometer with high resolution. 7th European Solid Mechanics Conference, 7-11 September, Lisbon, (2009).
- CI.56 E. Bertarelli, R. Ardito, E. Bianchi, K. Laganà, A. Corigliano, G. Dubini, R. Contro. A multi-physics framework for the geometric optimization of a diaphragm electrostatic micropump. COMSOL International Conference, Milano, 14-16 Ottobre, (2009).
- CI.57 C. Comi, A. Corigliano, G. Langfelder, A. Longoni, A. Tocchio, B. Simoni. A new two-beam differential resonant micro accelerometer. IEEE Sensors 2009, 25-28 October, Christchurch, New Zealand, (2009).
- CI.58 G. Langfelder, A. Longoni, F. Zaraga, A. Corigliano, A. Ghisi, A. Merassi. Real-time monitoring of the fatigue damage accumulation in polysilicon microstructures at different applied stresses. IEEE Sensors 2009, 25-28 October, Christchurch, New Zealand, (2009).
- CI.59 C. Comi, A. Corigliano, G. Langfelder, A. Longoni, A. Tocchio, B. Simoni. A high sensitivity uniaxial resonant accelerometer. MEMS2010, Hong Kong, 24-28 January 2010.
- CI.60 S. Mariani, A. Ghisi, R. Martini, A. Corigliano, B. Simoni. Two-scale vs three-scale FE analyses of shock-induced failure in polysilicon MEMS. *Proceedings Eurosime10*, 26-28 aprile, Bordeaux, Ch. 23, (2010), ISBN: 978-1-4244-7025-9.
- CI.61 Raffaele Ardito, Alberto Corigliano and Attilio Frangi. Finite Element Modelling of Adhesion Phenomena in MEMS. *Proceedings Eurosime10*, 26-28 aprile, Bordeaux, Ch. 3, (2010), ISBN: 978-1-4244-7025-9.
- CI.62 R. Ardito, B. de Masi, A. Frangi, A. Corigliano. An *On-Chip* Experimental Assessment of Casimir Force Effect in Micro-Electromechanical Systems. *Proceedings Eurosime10*, 26-28 aprile, Bordeaux, Ch. 3, (2010), ISBN: 978-1-4244-7025-9.
- CI.63 Ardito R., Corigliano A., Frangi A. Multiscale Finite Element models for predicting spontaneous adhesion in MEMS. 9e Colloque en Calcul Des Structures, Giens, France, 25-29 May, 191-197, (2009).
- CI.64 Bertarelli E., Ardito R., Corigliano A., Contro R. Static and dynamic behaviour of electrostatic diaphragm micro-pumps. *Proceedings of ECCM 2010*, CD-ROM (4 pp.) – Paris (France), May 14-21.

- CI.65 S. Mariani, A. Ghisi, R. Martini, A. Corigliano, B. Simoni. Analysis of shock-induced polysilicon MEMS failure: a multiscale finite element approach. *DTIP 2010, Symposium on Design, Test, Integration & Packaging of MEMS/MOEMS*, Seville (Spain), 5-7 May 2010.
- CI.66 Ardito R., Bertarelli E., Contro R., Corigliano A. Static and dynamic analyses of actuation devices in electrostatic micropumps *Proceedings of ECT 2010*, CD-ROM (11 pp.) – Valencia (Spain), September 14-17.
- CI.67 C. Comi, A. Corigliano, G. Langfelder, A. Longoni, A. Tocchio, B. Simoni. A new biaxial silicon resonant microaccelerometer. *MEMS2011*, Cancun, 23-27 January 2011.
- CI.68 R. Ardito, L. Baldassarre, A. Corigliano, B. De Masi, A. Frangi, A. Raygani, L. Magagnin. Adhesion Properties of Real Rough Surfaces in Silicon MEMS. *Proceedings Smart Systems Integration*, 22-23 March, Dresden, (2011).
- CI.68 C. Comi, A. Corigliano, G. Langfelder, A. Longoni, A. Tocchio. On the nonlinear behaviour of MEMS resonators. *Proceedings Eurosim11*, 18-20 April, Linz, (2011), ISBN 978-1-4577-0105-4.
- CI.69 E. Bertarelli, R. Ardito, A. Greiner, J. G. Korvink, A. Corigliano. Design issues in electrostatic microplate actuators: device stability and post pull-in behaviour. *Proceedings Eurosim11*, 18-20 April, Linz, (2011).
- CI.70 M. Bocciairelli, A. Corigliano, S. Mariani, C. Molinari and P. Monti. Structural integrity assessment of a pipeline subjected to an underwater explosion. *Proceedings 30th international conference on ocean, offshore and arctic engineering OMAE*, Rotterdam, The Netherlands, 19 – 24 June (2011).
- CI.71 R. Ardito, L. Baldassarre, A. Corigliano, B. De Masi, A. Frangi, L. Magagnin. Experimental and numerical assessment of adhesion in real-life MEMS. *Proceedings Eurosim12*, 16-18 April, Lisboa, (2012), ISBN 978-1-4673-1512-8.
- CI.72 F. Confalonieri, G. Cocchetti, A. Ghisi, A. Corigliano. A domain decomposition method for the simulation of fracture in polysilicon MEMS. *Proceedings Eurosim12*, 16-18 April, Lisboa, (2012), ISBN 978-1-4673-1512-8.
- CI.73 S. Mariani, A. Corigliano, F. Caimmi, S. Eftekhar Azam, M. Bruggi, P. Bendiscioli, M. De Fazio. Health monitoring of flexible composite plates: a MEMS-based approach. *Proceedings TechConnect World*, 18-21 June, Santa Clara (CA), (2012).
- CI.74 P. Barbante, A. Frezzotti, L. Gibelli, P. Legrenzi, A. Corigliano, A. Frangi. A kinetic model for capillary flows in MEMS. *Proceedings 28TH INTERNATIONAL SYMPOSIUM ON RAREFIED GAS DYNAMICS 2012*, AIP, 9-13 July, Zaragoza (Spain) (2012).
- CI.75 R. Ardito, A. Corigliano, A. Frangi, L. Magagnin, F. Rizzini. Computation of adhesive forces due to van der Waals and capillary effects on realistic rough surfaces. *Proceedings WCCM10*, 8-13 July, San Paolo, (2012).
- CI.76 F. Confalonieri, A. Ghisi, G. Cocchetti, A. Corigliano. Simulation of dynamic fracture processes in polycrystalline silicon microsystems by means of a multi-step, domain decomposition method. *Proceedings ECCOMAS 2012*, 10-14 September, Vienna (2012).
- CI.77 A. Corigliano, M. Bagherinia, M. Bruggi, S. Mariani, E. Lasalandra. Optimal design of a resonating MEMS magnetometer: A multi-physics approach. *Proceedings Eurosim13*, 15-17 April, Wroclaw (2013), ISBN 978-1-4673-6137-8.
- CI.78 A. Ghisi, A. Corigliano, S. Mariani, G. Allegato. A multi-scale approach to wafer to wafer metallic bonding in MEMS. *Proceedings Eurosim13*, 15-17 April, Wroclaw (2013), ISBN 978-1-4673-6137-8.
- CI.79 G. Gafforelli, R. Xu, A. Corigliano, S. G. Kim. Modelling of a bridge-shaped nonlinear piezoelectric energy harvester. *Proceedings PowerMEMS 2013*, 3-6 December, London. *Journal of Physics: Conference Series* 476, 012100, IOP Publishing, 481-485, DOI: 10.1088/1742-6596/476/1/012100, (2013).
- CI.80 G. Salerno, S. Mariani, A. Corigliano. Reduced order modeling of composite laminates through solid-shell coupling. *Proceedings 68th ABM International Congress*, Belo Horizonte (Brazil), (2013).
- CI.81 M. Bagherinia, A. Corigliano, S. Mariani, D. A. Horsley, Mo Li, E. Lasalandra. An efficient earth magnetic field MEMS sensor: modelling and experimental results. *Proceedings IEEE MEMS2014*, San Francisco, 26-30 January 2014.
- CI.82 G. Gafforelli, R. Ardito, A. Corigliano, C. Valzasina, F. Procopio. Numerical simulations of piezoelectric MEMS energy harvesters. *Proceedings Eurosim 2014*, Ghent, 7-9 April 2014.
- CI.83 D. Eckhaut, E. Bertarelli, D. Acconcia, G. Cocchetti, A. Corigliano. Thermo-electrical and structural coupled simulations of buckling beam microprobes in high temperature/high current conditions. *Proceedings Eurosim 2014*, Ghent, 7-9 April 2014.
- CI.84 M. Bagherinia, S. Mariani, A. Corigliano, E. Lasalandra. Stochastic effects on the dynamics of a resonant MEMS magnetometer: a Monte Carlo investigation. *Proceedings 1st International Electronic Conference on Sensors and Applications*. 1-16 June 2014.
- CI.85 A. Ghisi, S. Mariani, A. Corigliano, G. Allegato, L. Oggioni. A top-down, three-scale numerical analysis of wafer-to-wafer metallic bonding. *Proceedings 1st International Electronic Conference on Sensors and Applications*. 1-16 June 2014.
- CI.86 A. Corigliano, M. Dossi, S. Mariani. Combined domain decomposition and model order reduction methods for the solution of coupled and non-linear problems. *Proceedings 11th World Congress on Computational Mechanics*, Barcelona, July 20-25, (2014).

- CI.87 A. Caspani, C. Comi, A. Corigliano, G. Langfelder, V. Zega, S. Zerbini. A differential resonant micro accelerometer for out-of-plane measurements. Proceedings Eurosensors 2014, Brescia, September 7-10 (2014). *Procedia Engineering*, 87, 640-643 (2014).
- CI.88 A. Corigliano, A. Ghisi, S. Mariani, G. Allegato. A three-scale approach to the numerical simulation of metallic bonding for MEMS packaging. Proceedings ESREF Berlin, September 29-October 2 (2014) (published on microelectronics reliability).
- CI.89 G. Gafforelli, R. Xu, A. Corigliano, S.G. Kim. Experimental verification of a bridge-shaped, non-linear vibration energy harvester. Proceedings IEEE Sensors, Valencia, November 3-5 (2014).
- CI.90 R. Ardito, A. Corigliano, B. De Masi, A. Frangi. Experimental evidence of the effect of nano-scale interaction forces in MEMS/NEMS. In Proceedings of the Int. Seminar on NEMS-Nano Mechanical Systems. (2014).
- CI.91 E. Bertarelli, A. Colnago, R. Ardito, G. Dubini, A. Corigliano. Modelling and characterization of circular microplate electrostatic actuators for micropump applications. Proceedings Eurosime15, Budapest, April 20-22, (2015).
- CI.92 C. Comi, A. Corigliano, V. Zega, S. Zerbini. Optimal design and nonlinearities in a z-axis resonant accelerometer. Proceedings Eurosime15, Budapest, April 20-22, (2015).
- CI.93 R. Ardito, A. Corigliano, G. Gafforelli. Multi-physics simulation of laminates with piezoelectric layers for energy harvesters. Proceedings 5th ECCOMAS Thematic Conference on mechanical response of composites, Bristol, 7-9 September (2015).
- CI.94 R. Ardito, A. Corigliano, G. Gafforelli. An highly efficient simulation technique for piezoelectric energy harvesters. Proceedings PowerMEMS 2015, *J. of Physics: Conference Series* 660, 012141, doi: 10.1088/1742-6596/660/1/012141, Boston, December 1-4, (2015).
- CI.95 M. Bruggi, V. Zega, A. Corigliano. Optimization of Auxetic structures for MEMS applications. Proceedings Eurosime16, Montpellier, April 18-20, (2016).
- CI.96 C. Comi, A. Corigliano, M. Doti, A. Garatti, G. Langfelder, V. Zega. Torsional microresonator in the nonlinear regime: experimental, numerical and analytical characterization. DOI: 10.1016/j.proeng.2016.11.309, 333-336. In *Procedia Engineering* – ISSN: 1877-7058, 168C. Eurosensors 2016, September 4-6, Budapest, (2016).
- CI.97 G. Massimino, L. D'Alessandro, F. Procopio, R. Ardito, M. Ferrera, A. Corigliano. Multiphysics analysis and experimental validation of an air coupled piezoelectric micromachined ultrasonic transducer with residual stresses. DOI: 10.1016/j.proeng.2016.11.289, 852-855. In *Procedia Engineering* – ISSN: 1877-7058, 168C. Eurosensors 2016, September 4-6, Budapest, (2016).
- CI.98 S. Mariani, G. Capellari, A. Corigliano, S. Eftekhari Azam. Adaptive POD-based reduced order modeling and identification of nonlinear structural systems. Proceedings Simai, Milano, 2016, ISBN: 978-88-6493-035-0.
- CI.99 C. Comi, A. Corigliano, V. Zega, S. Zerbini. Pull-in and nonlinear behavior of torsional microresonators. In Book of papers of 24<sup>th</sup> International Congress of Theoretical and Applied Mechanics, Montreal, 2611-2612. ISBN: NR16-127/2016.
- CI.100 G. Massimino, L. D'Alessandro, F. Procopio, R. Ardito, M. Ferrera, A. Corigliano. Air-Coupled PMUT at 100 kHz with PZT Active Layer and Residual Stresses: Multiphysics Model and Experimental Validation. Proceedings Eurosime 2017, Dresda, 3-5 aprile 2017.
- CI.101 R. Ardito, L. D'Alessandro, G. Massimino, F. Procopio, A. Corigliano. Multiphysics Analyses of the effect of package on the performances of PMUT Transducers. Proceedings COUPLED PROBLEMS 2017, 400-408, ISBN:9788494690921, 2017.
- CI.102 C. Credi, V. Zega, R. Bernasconi, G. Langfelder, A. Cigada, L. Magagnin, M. Levi, A. Corigliano. Design, fabrication and testing of the first 3D-printed and wet metallized z-axis accelerometer. Proceedings Eurosensors 2017, Paris, 2017.
- CI.103 V. Zega, P. Minotti, G. Mussi, A. Tocchio, L. Falorni, S. Facchinetti, A. Bonfanti, A. L. Lacaïta, C. Comi, G. Langfelder, A. Corigliano. The first frequency-modulated (FM) pitch gyroscope. Proceedings Eurosensors 2017, Paris, 2017.
- CI.104 L. D'Alessandro, E. Belloni, G. D'Alò, L. Daniel, R. Ardito, A. Corigliano, F. Braghin. Modelling and experimental verification of a single phase three-dimensional lightweight locally resonant elastic metamaterial with complete low frequency bandgap. Proceedings 11<sup>th</sup> Metamaterials, Marseille, August 28<sup>th</sup> – September 2<sup>nd</sup>, 8107842, 70-72, 2017.
- CI.105** V. Zega, C. Credi, M. Invernizzi, R. Bernasconi, G. Langfelder, A. Cigada, L. Magagnin, M. Levi, A. Corigliano. 3D-Printing and wet metallization for uniaxial and multi-axial accelerometers. Proceedings Eurosime 2018, Toulouse, 16-18 April 2018.
- CI.106** R. Ardito, L. D'Alessandro, F. Braghin, A. Corigliano. Single-phase engineered metamaterials for wave filtering with optimal performances. Proceedings Euronoise, Heraklion, Crete, 27-31 May 2018. 7-10, ISSN: 2226-5147. 2018.
- CI.107** V. Zega, C. Comi, P. Fedeli, A. Frangi, A. Corigliano, P. Minotti, G. Langfelder, L. Falorni, A. Tocchio. A dual-mass frequency-modulated (FM) pitch gyroscope: Mechanical design and modelling. Proceedings INERTIAL 2018. DOI:10.1109/ISISS.2018.8358128. ISBN: 9781538608944, 2018.

- CI.108** V. Zega, C. Comi, P. Minotti, G. Langfelder, L. Falorni, A. Corigliano. Frequency modulated (FM) micro-gyroscopes: recent advances. Proceedings EUROMECH Colloquium 603 Dynamics of micro and nano electromechanical systems: multi-field modelling and analysis. Porto, 5-7 September. 63-66.- ISBN:978-989-746-185-9. 2018.
- CI.109** V. Zega, C. Comi, E. Bordiga, G. Langfelder, L. Falorni, A. Corigliano. Towards 3-Axis FM MemS Gyroscopes: Mechanical Design and Experimental Validation. DOI:10.1109/TRANSDUCERS.2019.8808626. pp.1933-1936. In 2019 20th International Conference on Solid-State Sensors, Actuators and Microsystems and Eurosensors XXXIII, TRANSDUCERS 2019 and EUROSENSORS XXXIII - ISBN:978-1-5386-8104-6. (2019).
- CI.110** G. Massimino, A. Colombo, R. Ardito, F. Quaglia, F. Foncellino, A. Corigliano. Air-Coupled Array of Pmuts at 100 kHz with PZT Active Layer: Multiphysics Model and Experiments. Proceedings Eurosime 2019, Hannover, 24-27 March 2019.
- CI.111** Y. S. A. F. Farshchi, M. Garavaglia, A. Ghisi, A. Corigliano. Modelling and Simulation of Glass Frit Bonding of Silicon Wafers. Proceedings Eurosime 2019, Hannover, 24-27 March 2019.
- CI.112** L. Rosafalco, A. Corigliano, A. Manzoni, S. Mariani. Combined Model Order Reduction and Artificial Neural Network for data assimilation and damage detection in structures. Proceedings ECCOMAS Thematic Conference: Computational Science and AI in Industry (CSAI), Jyväskylä, 12-14 June 2019. (2019).
- CI.114** A. Bonanomi, E. Zappa, A. Cigada, V. Zega, A. Corigliano. High speed vision system for the dynamic characterization of 3D printed sensors. DOI:10.1088/1742-6596/1249/1/012001. 1-10. In Journal of Physics: Conference Series. - ISSN:1742-6588, 1249 (1) (2019).
- CI.115** L. Rosafalco, A. Corigliano, A. Manzoni, S. Mariani. A Hybrid Structural Health Monitoring Approach Based on Reduced-Order Modelling and Deep Learning. DOI:10.3390/ecsa-6-06585. 1-7. Proceedings 6th International Electronic Conference on Sensors and Applications. ISSN:2504-3900 vol. 42 (1). Conference date:15–30 November 2019.
- CI.116** D. Faraci, A. Ghisi, S. Adorno, A. Corigliano. Numerical Analysis of Impact Induced Failure for MEMS Membranes during Guided Free Fall Tests. Proceedings Eurosime 2020, online conference.
- CI.117** Z. Yao, V. Zega, Y. Su, A. Corigliano. A Metaplate in MEMS for innovative applications: Vibration isolation and tunable mechanical filters. Proceedings of IEEE Sensors\_ DOI:10.1109/SENSOR47125.2020.9278691. ISBN: 978-1-7281-6801-2. ISSN:1930-0395. (2020).
- CI.118** L. Rosafalco, A. Corigliano, A. Manzoni, S. Mariani. A time series autoencoder for load identification via dimensionality reduction of sensor recordings. DOI:10.3390/ecsa-7-08255. pp.1-8. In 7th International Electronic Conference on Sensors and Applications. In ENGINEERING PROCEEDINGS - ISSN:2673-4591 vol. 2, (2020).
- CI.119** L. Rosafalco, A. Corigliano, A. Manzoni, S. Mariani. A Hybrid Structural Health Monitoring Approach Based on Reduced-Order Modelling and Deep Learning. DOI:10.3390/ecsa-6-06585. pp.1-7. In 6th International Electronic Conference on Sensors and Applications. In PROCEEDINGS - ISSN:2504-3900 vol. 42 (1). (2020).
- CI.120** A. Ghisi, D. Faraci, S. Adorno, A. Corigliano. Failure of MEMS Microphones During Impact Tests: the Role of Anchor Imposed Motion. Proceedings Eurosime 2021, 9410884, online conference, (2021).
- CI.121** A. Ghisi, D. Faraci, S. Adorno, A. Corigliano. On the failure of silicon thin membranes during free fall tests for MEMS microphones. 2132-2133. In 25th International Congress of Theoretical and Applied Mechanics - ISBN:978-83-65550-31-6, (2021).
- CI.122** C. Comi, L. Pertoldi, V. Zega, T. Zandrini, R. Osellame, A. Corigliano. A prototype for vibration isolation at the microscale through two-photon polymerization. 2134-2135. In 25th International Congress of Theoretical and Applied Mechanics - ISBN:978-83-65550-31-6, (2021).
- CI.123** L. Rosafalco, A. Manzoni, S. Mariani, A. Corigliano. Parametric reduced order modelling and deep learning to accomplish pattern recognition and regression tasks. In 25th International Congress of Theoretical and Applied Mechanics - ISBN: 978-83-65550-31-6, (2021).
- CI.124** F. Foncellino, L. Barretta, E. Massera, A. Corigliano. Piezoelectric MEMS for microparticles detection. *Proceedings of IEEE Sensors*, October, (2021).
- CI.125** M. Rosso, A. Corigliano, R. Ardito. An investigation on the magnetic interaction for frequency up-converting piezoelectric vibration energy harvesters. IEEE 20th International Conference on Micro and Nanotechnology for Power Generation and Energy Conversion Applications, *PowerMEMS 2021*, 232-235, (2021).
- CI.126** L. Rosafalco, A. Manzoni, S. Mariani, M. Torzoni, A. Corigliano. Dealing with uncertainties in structural damage localization by reduced order modeling and deep learning-based classifiers. In Proceedings of SIMAI 2020+21: the XV biannual congress of SIMAI - ISBN:979-12-200-9343-9, 200-201. Conference date:30 August - 3 September 2021.
- CI.127** L. Rosafalco, A.S. Eftekhari, A. Manzoni, A. Corigliano, S. Mariani. Unscented Kalman Filter Empowered by Bayesian Model Evidence for System Identification in Structural Dynamics. DOI:10.3390/IOCA2021-10896. pp.1-9. In 1st International Electronic Conference on Algorithms vol. 2 (1). Conference date: 27 September–10 October 2021.

- CI.128** G. Colombera, L. Rosafalco, M. Torzoni, F. Gatti, S. Mariani, A. Manzoni, A. Corigliano. A Generative Adversarial Network Based Autoencoder for Structural Health Monitoring. DOI:10.3390/IOCA2021-10887. pp.1-10. In 1st International Electronic Conference on Algorithms vol. 2 (1). Conference date: 27 September–10 October 2021.
- CI.129** Rosafalco, L., Manzoni, A., Corigliano, A., Mariani, S. A Time Series Autoencoder for Load Identification via Dimensionality Reduction of Sensor Recordings. *Engineering Proceedings* 2(1), 34, (2021).
- CI.130** V. Zega, A. Nastro, M. Ferrari, R. Ardito, V. Ferrari, A. Corigliano. An Innovative Auxetic Electrically-Tunable Mems Mechanical Filter. DOI: 10.1109/MEMS51670.2022.9699733. In IEEE 35th International Conference on Micro Electro Mechanical Systems Conference (MEMS), (2022).
- CI.131** G. Massimino, C. Gazzola, V. Zega, S. Adorno, A. Corigliano. Ultrasonic Piezoelectric Mems Speakers for In-Ear Applications: Bubbles-Like and Pistons-Like Innovative Designs. Proceedings Eurosime 2022, Malta, 25-27 April, (2022).
- CI.132** V. Zega, M. Antonacci, A. Frangi, A., Corigliano, E., Riva. Planar GRIN Lenses for MEMS Energy Harvesters: A Macroscale Proof of Concept. Proceedings Joint Conf. of the European Frequency and Time Forum and IEEE Int. Frequency Control Symposium, EFTF/IFCS, (2022).
- CI.133** L. Rosafalco, J.M. De Ponti, L. Iorio, R. Ardito, A. Corigliano. Optimization of Graded Arrays of Resonators for Energy Harvesting in Sensors as a Markov Decision Process Solved via Reinforcement Learning. *Engineering Proceedings*, 27(1), 18, (2022).
- CI.134** J.W. Kim, M. Torzoni, A. Corigliano, S. Mariani. Attention Mechanism-Driven Sensor Placement Strategy for Structural Health Monitoring. *Engineering Proceedings*, 27(1), 43, (2022).
- CI.135** L. Rosafalco, A. Manzoni, S. Mariani, A. Corigliano. Enabling supervised learning in structural health monitoring by simulating damaged structure responses through physics based models. In Proceedings ECCOMAS 2022 - 8th European Congress on Computational Methods in Applied Sciences and Engineering. (2022).
- CI.136** L. Iorio, J. M. De Ponti, R. Ardito, A. Corigliano. Resonant meta-lattices for wave confinement and energy harvesting. MECSOL 2022 - Proceedings of the 8th International Symposium on Solid Mechanics. M.L. Bittencourt, J. Labaki, L.C.M. Vieira Jr. and E. Mesquita (Editors), Campinas SP, Brazil, October 17-19, (2022).
- CI.137** M. Rosso, E. Kohtanen, A. Corigliano, R. Ardito, A. Erturk. Dynamical Behavior of Frequency up-Converted Piezoelectric Vibration Energy Harvesters at Different Velocities of Magnetic Interaction. 21st Int Conf. on Micro and Nanotechnology for Power Generation and Energy Conversion Applications, PowerMEMS, 260-263, (2022).
- CI.138 O. M. O. Abdalla, G. Massimino, C. D'Argenzio, M. Colosio, M. Soldo, F. Quaglia, A. Corigliano. Numerical Simulation of Crosstalk Effects in PMUT Arrays. Proceedings Eurosime 2023, Graz, 17-19 April, (2023).
- CI.139** R. Ardito, C. Comi, V. Zega, A. Corigliano. Metamaterials and MEMS (MetaMEMS): a promising trend in Microsystems technology. Proceedings Eurosime 2023, Graz, 17-19 April, (2023).
- CI.140 C. Gazzola, V. Zega, F. Cerini, S. Adorno, A. Corigliano. A mechanically-open and acoustically closed piezoMEMS speaker for in-ear applications. Transducers2023, Kyoto, 25-29 June, (2023).
- CI.141 O. M. O. Abdalla, G. Massimino, C. D'Argenzio, M. Colosio, M. Soldo, F. Quaglia, A. Corigliano. Crosstalk Effects in PMUT Arrays. Transducers2023, Kyoto, 25-29 June, (2023).
- CI.142** O.M.O. Abdalla, R. Ardito, V. Zega, A. Corigliano. Smart materials and metamaterials for MEMS: a growing trend in microsystems technology. Smart 2023, Patras, 3-5 July 2023, Eccomas Proceedia, DOI: 10.7712/150123.9930.445137.
- CI.142 C. Gazzola, V. Zega, A. Corigliano, P. Lotton, M. Melon. Lumped-parameters equivalent circuit for piezoelectric MEMS speakers modeling. Forum Acusticum – Torino, 11-15 September, (2023).

## 9. National conferences

- CN.1 C. Comi, A. Corigliano. Estensione di teoremi sull'adattamento per un continuo in dinamica elastoplastica. Proceedings: *X Congresso AIMETA*, Pisa, 2-5 October 1990, ETS ed., **1**, 135-140 (1990).
- CN.2 A. Corigliano, U. Perego - Convergenza e stabilità incondizionata di un algoritmo di integrazione implicito per problemi di dinamica strutturale elastoplastica. *Proceedings VI Italian congress of computational mechanics*. Brescia, 23-25 October (1991).
- CN.3 A. Corigliano - Formulazione ed uso di modelli di interfaccia nell'analisi numerica di delaminazione in compositi stratificati. *Proceedings VII Italian congress of computational mechanics*. Trieste, 1-3 June (1993).
- CN.4 O. Allix, A. Corigliano e Pierre Ladevèze, - Modelisation et prevision du delaminage dans les composites stratifies. *Journées Nationales des Composites n 8*, Ecole Polytechnique, Palaiseu (France), October (1992).
- CN.5 G. Maier, A. Corigliano e U. Perego, On some effects of constitutive instabilities in structural analysis. presented at *Mecatmat '94*, Poitiers, (France) 14-17 March 1994.
- CN.6 G. Bolzon, A. Corigliano, Generalized variable formulations of interface elements. *Proceedings VIII Italian congress of computational mechanics*. Torino, 15-17 June (1994).

- 
- CN.7 A. Corigliano, G. Bolzon, A numerical study of multiple crack propagation. *Proceedings VIII Italian congress of computational mechanics*. Torino, 15-17 June (1994).
- CN.8 C. Comi, A. Corigliano, Analisi dinamiche in presenza di legami costitutivi a gradiente. *Proceedings XII Italian congress AIMETA*, Napoli 3-6 October 1995, v. 5, 123-128.
- CN.9 A. Corigliano, S. Mariani, Modelli analitici per la descrizione di prove di frattura elastica-lineare. *Proceedings XII congress of Italian group of fracture*, Parma 12-13 June, 49-58 (1996).
- CN.10 A. Corigliano, G. Maier, S. Mariani, S. Testolina. Simulation of ductile crack processes in pipe lines based on geometrical parameters. *Proceedings: 7° Congresso ABAGroup c/o C.I.S.E.*, Segrate 23-24 September (1996).
- CN.11 G. Maier, A. Corigliano, E. Papa, E. Rizzi. Mechanical behaviour of a syntactic foam/glass fibre composite sandwich: experimental results and numerical simulations. *Proceedings XIV National Congress AIMETA*, Como 6-9 October (1999).
- CN.12 A. Corigliano, S. Mariani. Constitutive models for porous-ductile media with anisotropic microstructure. *Proceedings XIV National Congress AIMETA*, Como 6-9 October (1999).
- CN.13 A. Corigliano, S. Mariani. Delamination growth in layered composites: numerical modeling and parameter identification. *Proceedings IGF 2000*, Bari, 3-5 May 2000.
- CN.14 R. Giampieretti, A. Corigliano, G. Maier. Parameter identification based on homogenisation for the constitutive modelling of composites and laminates. *Proceedings XII Italian congress of computational mechanic*. Brescia, 13-15 novembre. 111-114 (2000).
- CN.15 A. Pandolfi, C. Yu, A. Corigliano, M. Ortiz. Modelling dynamic fracture in transversely isotropic composites: a cohesive approach. *Proceedings XV AIMETA National Congress*, SS\_DAN\_09 (su CD), Taormina 26-29 September (2001).
- CN.16 A. Corigliano, E. Papa, A. Pavan, D. Buzzi. Study of a macroscopic model for fibrous composites by ESPI method. *Proceedings XVI AIMETA National Congress*, Ferrara 9-12 September (2003).
- CN.17 M. Binci, A. Frangi, P. Faure, A. Corigliano, Rotating piezoelectric ultrasonic motors: 3d Finite Element modelling. *Proceedings XVI AIMETA National Congress*, Ferrara 9-12 September (2003).
- CN.18 A. Corigliano, A. Frangi, C. Comi, B. De Masi, Mechanical properties of epitaxial polysilicon at the microscale *Proceedings XVI AIMETA National Congress*, Ferrara 9-12 September (2003).
- CN.19 A. Corigliano, S. Mariani, Parameter identification of nonlinear interface models for dynamic composite delamination. *Proceedings XVI AIMETA National Congress*, Ferrara 9-12 September (2003).
- CN.20 A. Corigliano, S. Mariani, A. Pandolfi, Time dependent fracture processes in dynamic delamination of composites. *Proceedings XVI AIMETA National Congress*, Ferrara 9-12 September (2003).
- CN.21 A. Corigliano, A. Ghisi, S. Mariani, Parameter identification in nonlinear structural dynamics by extended Kalman filter: stability and accuracy issues. *Proceedings: XV Convegno Italiano di Meccanica Computazionale*, Genova, 21-23 June (2004).
- CN.22 A. Corigliano, A. Ghisi, S. Mariani, Delamination detection in layered composites subject to impacts: an unscented Kalman filter approach. *Proceedings: XV Convegno Italiano di Meccanica Computazionale*, Genova, 21-23 June (2004).
- CN.23 L. Andena, A. Corigliano, R. Frassine, S. Mariani, Mixed-mode crack growth in toughened PMMA. *Atti 17th National Conference of Italian Group of Fracture*, Bologna, 16-18 June, (2004).
- CN.24 S. Mariani, A. Corigliano, A. Ghisi, Calibration of composite constitutive laws by a sigma-point Kalman filter. *Proceedings: XVII Congresso Nazionale AIMETA*, Firenze 11-15 September (2005).
- CN.25 F. Cacchione, A. Corigliano, B. De Masi, C. Riva, On-chip tests for the mechanical characterization of polysilicon at the micro-scale. *Proceedings: XVII Congresso Nazionale AIMETA*, Firenze 11-15 Sept. (2005).
- CN.26 A. Ghisi, F. Cacchione, S. Mariani, A. Corigliano, A decoupled three-scale approach to MEMS failure. *Proceedings: XIX Convegno Nazionale del Gruppo Italiano Frattura*, Milano, 2-4 July 2007.
- CN.27 F. Cacchione, F. Fachin, A. Ghisi, A. Corigliano, Reliability analysis of MEMS sensors subject to drop impact. *Proceedings: XVIII Congresso Nazionale AIMETA*, Brescia 11-14 September (2007).
- CN.28 R. Ardito, C. Comi, A. Corigliano, A. Frangi, Solid damping in micro electro mechanical systems. *Proceedings: XVIII Congresso Nazionale AIMETA*, Brescia 11-14 September (2007).
- CN.29 A. Corigliano, A. Ghisi, G. Langfelder, A. Longoni, F. Zaraga. Polysilicon MEMS fatigue and fracture characterization via on chip testing. *Proceedings del XIX Congresso Nazionale AIMETA*, Ancona 14-17 September (2009).
- CN.30 F. Confalonieri, G. Cocchetti, A. Corigliano. A domain decomposition approach for elastic solids with damageable interfaces. *Proceedings XVIII Convegno Italiano di Meccanica Computazionale*, Siracusa, 22-24 September (2010).
- CN.31 F. Confalonieri, G. Cocchetti, A. Ghisi, A. Corigliano. Simulation of fracture phenomena in polycrystalline microsystems by a domain decomposition approach. *Proceedings del XX Congresso Nazionale AIMETA*, Bologna 12-15 September (2011).
- CN.32 C. Comi, A. Corigliano, S. Zerbini. A new out-of-plane resonant micro accelerometer. *Proceedings del XX Congresso Nazionale AIMETA*, Bologna 12-15 September (2011).

- CN.33 R. Ardito, L. Baldassarre, A. Corigliano, B. de Masi, A. Frangi, L. Magagnin. Adhesion energy in silicon MEMS: comparison of experiments and simulations. Proceedings del XX Congresso Nazionale AIMETA, Bologna 12-15 September (2011).
- CN.34 F. Confalonieri, A. Corigliano, A. Ghisi. Domain decomposition strategies for the simulation of fracture processes in polysilicon microsystems. Proceedings del XXI Congresso Nazionale AIMETA, Torino 17-20 September (2013).
- CN.35 R. Ardito, A. Corigliano, G. Gafforelli. Numerical simulations of piezoelectric effects. Proceedings del XXI Congresso Nazionale AIMETA, Torino 17-20 September (2013).
- CN.36 V. Zega, C. Comi, A. Corigliano C. Valzasina. Integrated structure for a resonant micro-gyroscope and accelerometer. Proceedings XX Convegno Italiano di Meccanica Computazionale. Cassino, 11-13 June 2014. *Frattura e integrità strutturale*, 8, 29, 334-342 (2014).
- CN.37 V. Zega, M. Bruggi, M. Levi, A. Corigliano. Auxetic materials for MEMS: modeling, optimization and additive manufacturing. Proceedings XXII Congresso Nazionale AIMETA, Genova 14-17 September (2015).
- CN.38 V. Zega, C. Comi, P. Minotti, L. Falorni, A. Tocchio, G. Langfelder, A. Corigliano. Mechanical design of a fully-differential triaxial frequency modulated MEMS gyroscope. Proceedings XXIII Congresso Nazionale AIMETA, Salerno 4-7 September (2017).
- CN.39 M. Bruggi, A. Corigliano, V. Zega. Optimal 2D auxetic microstructures with band gap. In Book of Abstract XXII Convegno Gruppo Italiano di Meccanica Computazionale GIMC 2018 IX Riunione GMA Gruppo Materiali AIMETA. (2018).
- CN.40 L. Iorio, J.M. De Ponti, R. Ardito, A. Corigliano. Wave redirection and confinement via elastic meta-lattices. Proceedings XXV Congresso Nazionale AIMETA, Palermo 4-8 September (2022).

#### **10. Invited lectures at International Conferences, without paper**

- IL-1 A. Corigliano, Reliability of polysilicon micro electro mechanical systems (mems). Invited lecture at 17th Brazilian Congress of Mechanical Engineering, Sao Paulo, 10-14 November 2003.
- IL-2 A. Corigliano, F. Cacchione, A. Frangi. Some issues in the computational mechanics of micro electro mechanical systems. Challenges in computational mechanics, ENS-Cachan, 10-12 May (2006).
- IL-3 A. Corigliano, R. Ardito, A. Frangi. Modelling of spontaneous Adhesion phenomena in Microsystems. Semi plenary Lecture at ECCM2010, Paris, 16-21 May (2010).
- IL-4 A. Corigliano, R. Ardito, C. Coimi, A. Ghisi, A. Frangi, S. Mariani. Microsystems and mechanics. Sectional lecture al congresso ICTAM 2012, Pechino, 19-24 August (2012).
- IL-5 A. Corigliano. Non-linear mechanics and numerical simulations in microsystems: recent advances and applications. Plenary lecture at APM 15, S. Petersburg, 22-27 June (2015).
- IL-6 A. Corigliano, M. Dossi, S. Mariani. Combined Domain Decomposition and Model Order Reduction methods for the solution of multi-physics and non-linear problems in MEMS. Invited lecture at WS MOR-4-MEMS, Karlshue, 17-18 November (2015).