

Personal information

Surname(s) / First name(s)

Panciroli Riccardo, Ph.D

Email(s)

✉ riccardo.panciroli@unicusano.it

Nationality(-ies)

Italian

Date of birth

20/09/1983

Gender

Male

Mechanical Engineer

Experience

05/2014 - current

Università degli studi di Niccolò Cusano

RTD-A (Assistant Professor).

01/2014 - 05/2014

Università degli studi di Napoli "Parthenope"

Researcher. Research areas: Hull slamming; Fluid-structure interaction.

01/2013 - 12/2013

Polytechnic institute of the New York University

Post Doctoral fellow. Research areas: Hull slamming; Energy harvesting; Fluid-structure interaction; Underwater vibrations. Academic supervisor: Prof. Maurizio Porfiri.

01/2012-12/2012

Università di Bologna

Post Doctoral fellow. DIEM dempartment - sponsored by [Office of Naval Research \(ONR\) - Solid Mechanics Program \(Dr. Yapa Rajapakse\) - Grant N00014-12-1-0260](#) (PI)

Research Area: *Numerical and experimental investigation on slamming and water entry of deformable composite hulls.*

Academic supervisors: *Prof. Giangiacomo Minak (UniBo), Prof. Serge Abrate (SIUC)*

2010-2012

Centro Interdipartimentale di Ricerca Industriale CIRI - Advanced Applications in Mechanical Engineering & Materials Technology

Collaborator. Activity: FEM dynamic numerical simulations.

Academic activity

2014-2015

Titular of the course: *Costruzione di macchine 1 (9 cfu)* - B.Sc in Industrial Engineering - Università degli studi Niccolò Cusano - Roma.

2014-2015

Titular of the course: *Costruzione di macchine 2 (9 cfu)* - M.Sc in Mechanical Engineering - Università degli studi Niccolò Cusano - Roma.

2013-2014

Titular of the course: *Scienza delle costruzioni (9 cfu)* - B.Sc in Civil and Industrial Engineering - Università degli studi Niccolò Cusano - Roma.

2012-2013

Titular of the course: *Elementi costruttivi delle macchine LM (3 cfu module)* - Msc in Mechanical and Aeronautical Engineering - University of Bologna at Forli campus.

2009

Teaching assistant for the course: *Mechanical behavior of composite Materials*, for the international master MASSET. (course titular: Prof. Giangiacomo Minak)

2009

Teaching assistant for the course: *Costruzione di macchine* for Chemical engineering. (course titular: Prof. Giangiacomo Minak)

2009

Teaching assistant for the course: *Comportamento meccanico dei materiali* for Energetic Engineers. (course titular: Prof. Piero Morelli)

2009

Teaching assistant for the course: *Elementi delle macchine* for Logistic Engineers. (course titular: Prof. Piero Morelli)

Education and training

1/2009 - 3/2012

Università di Bologna

Ph.D

Meccanica e Scienze Avanzate dell'Ingegneria (DIMSAI), Progetto 4: Meccanica dei Materiali e Processi Tecnologici. (*Mechanics and engineering advanced sciences (DIMSAI), Project 4: Mechanics of materials and technological processes.*)

Research field: *Impact resistance of composite lightweight structures. Analytical and numerical modeling of Fluid / Structure interaction. Hydroelastic Impacts. Experimental impact tests.*

Academic Tutor: *Prof. Giangiacomo Minak*

01/2009 - 06/2009

Southern Illinois University

Visiting Ph.D student.

Research Areas: *Dynamics of impacts on composite structures. Underwater explosions. Dynamic response of sandwich structures under impulsive loads. Dynamic response of sandwich shells to underwater explosions. Dynamic response of doubly curved shells to blast loadings. Self-excited oscillations.*

Academic Tutor: *Prof. Serge Abrate (SIUC)*

2006 - 2008

Università di Bologna

MSc Mechanical Engineering

Thesis argument: *Torsional behavior analysis of impacted tubular CFRP structures.*

07/2007 - 10/2007

UNAM, Universidad Nacional Autónoma de México, México City

Spanish language intensive course.

09/2006 - 06/2007

DTU, Denmark Technical University

Visiting student under the Erasmus program.

06/2006 - 08/2006

Thesis research at *Marzocchi Suspensions s.p.a*

04/2006 - 06/2006

Internship at *Marzocchi Suspensions s.p.a*

Aim: *Elaboration of a normalized table of testing forces for experimental tests on motorcycle forks and suspensions.*

2002 - 2006

Università di Bologna,

BSc Mechanical Engineering

Thesis argument: *Development of a clamping system for motorcycle forks subjected to experimental tests.*

1997-2002

Liceo Scientifico A.Righi, Bologna , Italy

Grants and Prizes

Prizes

2012 - Received the first prize at **YEAR2012** – The Young European Arena of Research – in the pillar “*Design and production (vehicles, vessels and infrastructure)*” for the accomplishments of the work “*Hydroelasticity in hull’s slamming*” (further information at <http://year2012.traconference.eu>).

Grants

2012 - Devised and managed as Principal Investigator (PI) a research project on the “*Experimental and numerical Hull slamming investigation*” sponsored by the **Office of Naval Research (ONR) - Solid Mechanics Program**, with Dr. Yapa D S Rajapakse as program manager - Grant N00014-12-1-0260.

Scholarship

2009-2011 - Scholarship as Academic tutor for the course “*Comportamento meccanico dei materiali*”. B.Sc in Energetic Engineering)

2009-2012 - Ph.D Grant sponsored by “*Borse Fondo Giovani*”.

2008 - Mobility grant from Bologna University for the improvement of the master thesis.

Collaborations

Dr. Panciroli collaborated as researcher in the following international and national projects

- Office of naval research (ONR) grant N00014-10-1-0988 titled “*Shock and vibration modeling of marine structures*”. PIs: N. Gupta and M. Porfiri.
- PRIN 2007 - *Miglioramento delle caratteristiche meccaniche mediante nanomodificazione della matrice in compositi a fibra lunga per applicazioni strutturali* (NanoCompStrut). Coordinatore Scientifico del programma di ricerca : Quaresimin Marino. Responsabile Scientifico dell'Unità di Ricerca: Minak Giangiacomo.
- *Mise-Crui. Metodologia integrata teorico-numerico-sperimentale per l'analisi fluido-struttura nel settore navale*. Coordinatore Scientifico del programma di ricerca: Prof. Stefano Ubertini.

Collaborated with the “*Centro interdipartimentale di ricerca industriale*” (CIRI-MAM) in the project “*Progetto Calzoni. Verifica strutturale di un periscopio soggetto ad esplosioni sottomarine*”.

Publications list

International Journal

- 2015 R. Panciroli, S. Ubertini, E. Jannelli, G. Minak. Experiments on the dynamics of flexible cylindrical shells impacting on a water surface *Experimental Mechanics*
- 2015 R. Panciroli, C. Biscarini, G. Falcucci, E. Jannelli, S. Ubertini. Live monitoring of the distributed strain field in impulsive events through fiber Bragg gratings. *Submitted for publication*
- 2015 A. L. Facci, R. Panciroli, S. Ubertini, M. Porfiri. Computational assessment of PIV-based analysis of water entry problems. *Journal of Fluids and Structures* 55, 484–500.
- 2015 E. Poodts, D. Ghelli, T. Brugo, R. Panciroli, G. Minak. Experimental characterization of a fibre metal laminate for underwater applications. *Composite Structures*, 129, 36–46, 2015
- 2015 R. Panciroli, M. Porfiri. Analysis of hydroelastic slamming through particle image velocimetry. *Journal of Sound and Vibration*, 347, 63–78, 2015
- 2015 R. Panciroli, A. Shams, M. Porfiri, Experiments on the water entry of curved wedges: high speed imaging and particle image velocimetry. *Ocean Engineering* 94, 213–222, 2015
- 2015 M. Jalalisendi, A. Shams, R. Panciroli and M. Porfiri, Experimental reconstruction of three-dimensional hydrodynamic loading in water entry problems through particle image velocimetry. *Experiments in Fluids*, 56, 1–17, 2015
- 2014 R. Panciroli, M. Porfiri. A particle image velocimetry study of hydroelastic slamming. *Procedia Engineering* 88, 180–185, 2014
- 2014 R. Panciroli, G. Minak. Experimental evaluation of the air trapped during the water entry of flexible structures. *ACTA IMEKO* 3 (3), 63–67, 2014
- 2014 R. Panciroli, M. Porfiri, Hydroelastic impact of piezoelectric structures. *International Journal of Impact Engineering*, 66, 18–27, 2014
- 2014 M. Jalalisendi, R. Panciroli, Y. Cha, M. Porfiri, A particle image velocimetry study of the flow physics generated by a thin lamina oscillating in a viscous fluid. *Journal of Applied Physics* 115, 054901, 2014
- 2013 R. Panciroli, M. Porfiri, Evaluation of the pressure field on a rigid body entering a quiescent fluid through particle image velocimetry. *Experiments in fluids* 54 (12), 1630, 2013
- 2013 R. Panciroli, Water entry of flexible wedges: some issues on the FSI phenomena. *Applied Ocean Research*, 39, 72–74, 2013
- 2013 E. Poodts, R. Panciroli, G. Minak Design rules for composite sandwich wakeboards. *Composite Part: B: Engineering* 44 (1), 628–638, 2013, 2012
- 2013 R. Panciroli, S. Abrate, G. Minak, Dynamic response of flexible wedges entering the water. *Composite Structures*, 99, 163–171, 2013
- 2012 R. Panciroli, S. Abrate, G. Minak, A. Zucchelli, Hydroelasticity in water-entry problems: comparison between experimental and SPH results. *Composite Structures*, 94 (2), 532-539, 2012
- 2012 R. Panciroli, S. Abrate Dynamic response of sandwich shells to underwater blasts. *CEJE - Central European Journal of Engineering*, Volume 2 (4), 509-522, 2012
- 2010 G. Minak, S. Abrate, D. Ghelli, R. Panciroli, A. Zucchelli, Low-velocity impact on carbon/epoxy tubes subjected to torque - experimental results, analytical models and fem analysis. *Composite Structures* 92 (3), 623–632, 2010
- 2010 G. Minak, S. Abrate, D. Ghelli, R. Panciroli, A. Zucchelli, Residual torsional strength after impact of CFRP tubes. *Composite Part: B: Engineering*, 41, 637-645, 2010

ASME Collections

- 2009 Panciroli, R., Abrate, S. An Introduction to Self-Excited Oscillations. *In Volume 7: Engineering Education and Professional Development* (Vol. 2009, pp. 69–78). ASME. doi:10.1115/IMECE2009-12088
- 2009 Panciroli, R., Abrate, S. Dynamic Response of Sandwich Structures to Impulsive Loads. *In Volume 11: Mechanics of Solids, Structures and Fluids* (Vol. 2009, pp. 199–209). ASME. doi:10.1115/IMECE2009-11660

Book Chapters

- 2013 R. Panciroli. Hydroelastic impacts of deformable wedges *In S. Abrate, B. Castaniè and Y. Rajapakse (Ed.), Dynamic Failure of Composite and Sandwich Structures. Springer. Dordrecht: Springer Netherlands. doi:10.1007/978-94-007-5329-7_1. ISBN 978-94-007-5328-0*
- 2009 G. Minak, D. Ghelli, R. Panciroli, A. Zucchelli, Composite tubes behavior under low-velocity impact. *In H C Mattos, M Alves. Solid Mechanics in Brasil 2009. (pp. 385 - 398). ISBN: 978-85-85769-43-7*

Conference Proceedings

- 2015 R. Panciroli, G. Falcucci, P. Maggiorana, A. Giovannozzi, E. Jannelli. Structural health monitoring through fiber bragg grating strain sensing. *AIP Conference proceedings*, 1648, 190002
- 2015 R. Panciroli, G. Falcucci, G. Erme, E. De Santis, E. Jannelli. Fluid-structure interaction during the water entry of flexible cylinders. *AIP Conference proceedings*, 1648, 570011
- 2014 R. Panciroli, G. Falcucci. Studio sperimentale dell'interazione fluido-struttura durante l'ingresso in acqua di corpi flessibili. Conference Proceedings AIAS 2014 - Settembre 2014 (Rimini)
- 2014 T. Brugo, R. Panciroli. Validazione di un sistema di shape-sensing basato su fibre ottiche a reticolo di Bragg tramite confronto con misure di Digital Image Correlation. Conference Proceedings AIAS 2014 - Settembre 2014 (Rimini)
- 2014 R. Panciroli, M. Porfiri. Reconstruction of the hydrodynamic load on a slamming wedge through particle image velocimetry. Mechanics of Composites (MECHCOMP2014), USA, 8-12 June 2014
- 2014 R. Panciroli, M. Porfiri. A particle image velocimetry study of hydroelastic slamming. DraF 2014, Ischia, Italy, September 15-17, 2014
- 2014 A. Zarghami, R. Panciroli, M. Portifi, S. Ubertini. Front-tracking lattice Boltzmann method for water entry-problems. 17th U.S. National Congress on Theoretical and Applied Mechanics Michigan State University, 15-20 June 2014
- 2013 E. Poodts, D. Ghelli, T. Brugo, R. Panciroli, G. Minak, *Impact properties of water exposed GFRP laminates with outermost steel layers*. 19ICCM, Montreal, 29 July - 2 August, 2013
- 2012 R. Panciroli, S. Abrate, G. Minak, *Effect of the boundary conditions on the hydroelastic impacts of composite plates*. 15ECCM, Venezia, 24-28 June, 2012
- 2012 R. Panciroli, S. Abrate, G. Minak, *Dynamic response of flexible wedges entering the water*. ICN-MMCS, Torino, 18-20 June, 2012
- 2012 R. Panciroli, G. Minak, *Hydroelastic slamming of composite plates*. 7 ICCSM, Zadar, 22-25 May, 2012
- 2011 R. Panciroli, E. Poodts, G. Minak. Studio sperimentale e numerico sui parametri di progetto di una tavola da Wakeboard. *Proceedings of AIAS 2011, Palermo, 7-10 Settembre 2011*
- 2011 R. Palazzetti; A. Zucchelli, R. Panciroli, G. Minak. Progettazione in materiale composito della sospensione anteriore di veicoli terrestri leggeri *Proceedings of AIAS 2011, Palermo, 7-10 Settembre 2011*
- 2011 R. Panciroli. Experimental and numerical investigation on hydroelastic impacts. *Proceedings of the workshop "Dynamic failure of composite and sandwich structures. Toulouse, France*.
- 2011 R. Panciroli, S. Abrate, G. Minak, A. Zucchelli. Hydroelasticity in water-entry problems: comparison between experimental and SPH results. *Proceedings of ICCS16. Oporto, Portugal. July 28-30 2011*.
- 2010 R. Panciroli, G. Minak, A. Zucchelli, SPH applicability to hull/waves slamming problems *Office of Naval Research Hull/Waves Workshop, 2010, Washington, 8-10 Settembre 2010*
- 2009 R. Panciroli, S. Abrate, Dynamic response of doubly curved sandwich shell subjected to blast loading. *Proceedings of 17th ICCM International Conference on Composite Materials*, 27 Jul 2009 - 31 Jul 2009, Edinburgh
- 2009 R. Panciroli, S. Abrate, Dynamic response of sandwich shells to underwater blasts. *Proceedings of 9th International Seminar on Experimental Techniques and Design in Composite Materials*, Vicenza - ITALY September 30-October 2 2009
- 2009 G. Minak, R. Panciroli, A. Zucchelli, Il metodo SPH nei problemi di impatto sull'acqua *Proceedings of AIAS 2010, Maratea, 7-10 September 2010*
- 2009 G. Minak, D. Ghelli, R. Panciroli, A. Zucchelli, On the flexural fatigue behaviour of glass fibre reinforced nanoclay modified epoxy matrix composites. *Proceedings of COMATCOMP'09, S. Sebastian (Spain), 7-9 october 2009*
- 2009 G. Minak, R. Panciroli, A. Zucchelli, Evaluation of the residual stresses in a low temperature carburized stainless steel by the microhardness measurement. *Proceedings of COBEM, 20th International Congress of Mechanical Engineering, Brasil 2009*

Conferences and seminars

- June 2014 Presentation of the work "R. Panciroli and M. Porfiri, *Reconstruction of the hydrodynamic load on a slamming wedge through particle image velocimetry*." International Conference on Mechanics of Composites June, 8-12 2014, Stony Brook University.
- December 2013 Presentation of the work "R. Panciroli and M. Porfiri, *Experimental methods for the analysis of water entry problems*." at the Office of Naval Research hull slamming mitigation workshop, Washington DC.
- December 2012 Presentation of the work "R. Panciroli and G. Minak, *Air trapping evaluation in hull slamming*." at the XX AIVELA, INSEAN, Roma, 19-20 december 2012.

- November 2012 Presentation of the work "R.Panciroli, *Experimental and numerical Hull slamming investigation.*" at the Office of Naval Research hull/waves slamming workshop, Washington DC.
- June 2012 Presentation of the work: *Effect of the boundary condition on the hydrodynamic impacts of composite plates* in the ONR session of the [ECCM15](#) - European conference on composite materials. Venice, Italy.
- June 2012 Presentation of the work: *Dynamic response of flexible wedges entering the water* in the ONR session of the [ICNMMCS](#) - International conference on nano, micro and macro composite structures. Turin, Italy.
- April 2012 Invited as finalist of [YEAR2012](#) to present the work: *Hydroelasticity in hull's slamming* at the [TRA Transport Research Arena](#) Athene, Greece. (Winner of the first prize in the area "Design and production")
- September 2011 Presentation of the work "R.Panciroli, E.Poodts, G.Minak. *Studio sperimentale e numerico sui parametri di progetto di una tavola da Wakeboard.*" At the national congress of experimental mechanics - AIAS. Palermo, Italy
- June 2011 Presentation of the work "R.Panciroli, S.Abrate, G.Minak, A.Zucchelli. *Hydroelasticity in water-entry problems: comparison between experimental and SPH results.*" ONR session of the European Conference on Composite Structures - ICCS16. Oporto, Portugal.
- June 2011 Presentation of the work "R.Panciroli. *Experimental and numerical investigation on hydroelastic impacts.*" ONR session of the workshop "Dynamic failure of composite and sandwich structures". Toulouse, France.
- September 2010 Presentation of the work "R.Panciroli, *SPH applicability to hull/waves slamming problems.*" at the Office of Naval Research hull/waves slamming workshop, Washington DC.
- September 2010 Presentation of the work "G.Minak, R.Panciroli, A.Zucchelli, *Il metodo SPH nei problemi di impatto sull'acqua.*" At the national congress of experimental mechanics AIAS. Maratea - Italy
- September 2009 Presentation of the paper "R.Panciroli, S.Abrate, *Dynamic response of sandwich shells to underwater blasts.*" at the International Seminar on Experimental Techniques and Design in Composite Materials, Vicenza, Italy.
- July 2009 Presentation of the paper "G.Minak, S.Abrate, D.Ghelli, R.Panciroli, A.Zucchelli, *Residual torsional strength after impact of CFRP tubes.*". At the 17th ICCE, International Conference on Composites or Nano Engineering. Honolulu, HI, USA
- June 2009 Presentation of the paper "G.Minak, S.Abrate, D.Ghelli, R.Panciroli, A.Zucchelli, *Low-velocity impact on carbon/epoxy tubes subjected to torque - experimental results, analytical models and fem analysis.*". At the 15th ICCS International Conference on Composite Structures, Oporto, Portugal.

Reviewer for the following International Journals

Journal of Fluids and Structures, Journal of fluids engineering, Ocean Engineering, Composite Structures, Composite Part:B, Journal of Sound and Vibration, Journal of Sandwich Structures and Materials, Journal of Marine Science and Application, Journal of marine Biology and Oceanography, Shock and vibration, Micromachines.

Personal skills and competences

Mother tongue(s)

Other language(s)

Self-assessment European level^()*

English

Spanish

Italian

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user
C2	Proficient user	C2	Proficient user	B2	Independent user	B1	Independent user	B2	Independent user

^(*) Common European Framework of Reference (CEF) level

Skills and competences

- Operating systems known: Unix; Linux; MacOSX; Microsoft Windows
- Packages known: Microsoft Office, OpenOffice, Adobe Acrobat, L^AT_EX, and other common applications for MacOSX, Linux and Windows.
- Engineering software known: Matlab, Ansys Multiphysics, Ansys Workbench, LS-Dyna, Maple, Octave, ProEngineer, SolidEdge
- Experimental devices: Fiber Bragg gratings; Strain gauges; Accelerometers; Laser displacement sensors; Load cells; High Speed Camera; Particle Image Velocimetry (PIV); Piezo-electric structures.