

# Jacopo CIAMBELLA

Ricercatore  
Department di Ingegneria Strutturale e Geotecnica  
SAPIENZA Università di Roma

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## EDUCATION

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**PhD in Structural Engineering** **May 2010**  
SAPIENZA Università di Roma  
Title “*Experimental Testing and Nonlinear Viscoelastic Modeling of Filled Rubber*”  
in cooperation with Bridgestone Technical Center Europe S.p.A.

**Ms Degree (cum laude) in Electronic Engineering** **May 2006**  
SAPIENZA Università di Roma

## RESEARCH

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**Research Interests:** *Continuum Mechanics, Nonlinear viscoelasticity, Polymer Nanocomposites*

### Research Experience

- from Feb 2012, Lecturer in Composites Engineering at University of Bristol
- Feb, 2010 - Jan 2012, PostDoc at “Sapienza” University of Rome

### Academic Awards

- 2012, Sapienza Editrice Doctoral Award for best dissertation in Engineering
- Fall, 2006 , Italian PhD Grant in Structural Engineering
- Fall, 2006 , Italian PhD Grant in Theoretical and Applied Mechanics (declined)
- Fall, 2006 , Italian PhD Grant in Applied Mathematics (declined)
- Spring, 2005 , International Internship Program Student Award 2005 (Sendai, Japan)

### Selected Research Projects

- Material Sandpit University of Bristol, “Mathematical Modelling and Testing of the Growth Mechanism of Endothelial cells Due to Mechanical Induced Stimuli”, (Coordinator: Dr. Jacopo Ciambella)
- Project Young Researcher of the Italian National Group for Mathematical Physics (GNFM), “Mathematical modelling of finite dynamic response of carbon black-filled rubber” (Coordinator: Dr. Jacopo Ciambella).
- Italian PRIN project 2008-2010, “Mechanical behaviour of heterogeneous materials: multiscale identification, optimisation and control” (National Coordinator: Prof. Achille Paolone).

## PUBLICATIONS

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### Book

- [1] Ciambella J., An Introduction to Nonlinear Viscoelasticity of Filled Rubber. A continuum mechanics approach, *In press* (2012), SAPIENZA Editor

### Publications on International Journals

- [2] Ciambella J. and Vestroni F., Damage detection through modal curvatures, 2012, Under review
- [3] Ciambella J., Paolone A., Vidoli S., Identification of viscoelastic models from experimental data on soft-materials at low frequency , 2012, Under review
- [4] Stanier, D. C., Patil, A. J., Sriwong, C., Rahatekar, S. S., & Ciambella, J., The reinforcement effect of exfoliated graphene oxide nanoplatelets on the mechanical and viscoelastic properties of natural rubber. *Composites Science and Technology*. doi:10.1016/j.compscitech.2014.02.007, 2014
- [5] Ciambella, J., & Saccomandi, G., A continuum hyperelastic model for auxetic materials. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 470(2163), 20130691–20130691. doi:10.1098/rspa.2013.0691, 2014
- [6] Ciambella J., Vestroni F. and Vidoli S., Damage Observability , Localization and Assessment based on Eigenfrequencies and Eigenvectors Curvatures, *Smart Structures and Systems*, 8(2), 2011.
- [7] Ciambella J., Paolone A. and Vidoli S., Memory decay rates of viscoelastic solids: not too slow, but not too fast either, *Rheologica Acta*, 80(7-8), 2011, 10.1007/s00397-011-0549-y.
- [8] Ciambella J., Paolone A. and Vidoli S., A comparison of nonlinear integral-based viscoelastic models through compression tests on filled rubber, *Mechanics of Materials*, 42(10), pp. 932- 944, 2010.
- [9] Ciambella J., Destrade M. and Ogden R. W., On the ABAQUS FEA model of finite viscoelasticity, *Rubber Chemistry and Technology*, 82(2), pp. 184-193, 2009.

### Publications on Conference Proceedings

- [10] Ciambella J., and Vestroni F., A Coupled Electro-mechanical System for Damage Detection and Energy Harvesting, 4th International Conference on Smart Materials, Structures and Systems (CIMTEC), Montecatini (IT), 2012.
- [11] Ciambella J., Lattanzi P., Ottaviani C., and Paolone A., Determination of soil transfer function through FWD measurements, *Proc. of 15th International Conference on Experimental Mechanics*, Porto 2012.
- [12] Ciambella J., Paolone A., and Vidoli S., Identification of mechanical properties of liver tissue by means of fractional models, *Proc. of 8th European Solid Mechanics Conference (ESMC)*, Graz, 2012.
- [13] Ciambella, J., Paolone, A. and Vidoli, S., Dynamic behavior of viscoelastic solids frequency: fractional vs exponential relaxation, *XX Congresso AIMETA*, Bologna (ITA), September 12-15, 2011.
- [10] Ciambella, J., Paolone, A. and Vidoli, S., Characterization and identification of the memory decay rates of carbon black-filled rubber, *7th ECCMR*, Dublin (IRE), September 20-23 2011.
- [11] Ciambella, J., Paolone, A. and Vidoli, S., On the proper memory decay rates for the accurate modelling of storage and loss moduli, *ENOC 2011*, Rome (ITA), July 24-29 2011.
- [12] Ciambella, J., Paolone, A. and Vidoli, S., Viscoelastic behavior of soft materials at low frequency: theoretical consideration and constitutive modeling, *7th AERC*, Suzdal (Rus), May 10-14 2011.
- [13] Ciambella, J., Paolone, A. and Vidoli, S., Identification of nonlinear viscoelastic models through compression tests on filled rubber, *IV Riunione GMA*, Palermo (ITA), February 25-26 2010.
- [14] Ciambella, J., Paolone, A. and Vidoli, S., A comparison of nonlinear viscoelastic models for filled-rubber: analytical formulation, experimental modeling and identification, *XIX Congresso AIMETA*,

Ancona (ITA), September 14-17 2009.

[15] F. Vestroni, J. Ciambella, F. dell'Isola and S. Vidoli, Damage Detection with Auxiliary Subsystem, 3rd International Conference on Smart Materials, Structures and Systems (CIMTEC), 2008