



Francesco Bucchi

List of Publications

Papers in international journals

F. Bucchi, P. Forte, F. Frendo, A. Musolino, and R. Rizzo. A fail-safe magnetorheological clutch excited by permanent magnets for the disengagement of automotive auxiliaries. *Journal of Intelligent Material Systems and Structures*, 25(16):2102–2114, 2014. doi: 10.1177/1045389X13517313.

F. Bucchi, P. Forte, and F. Frendo. Analysis of the torque characteristic of a magnetorheological clutch using neural networks. *Journal of Intelligent Material Systems and Structures*, 2014. In press, doi: 10.1177/1045389X14546654.

F. Bucchi, M. Elahinia, P. Forte, and F. Frendo. A passive magneto-thermo-mechanical coupling actuated by SMA springs and MR fluid. *International Journal of Structural Stability and Dynamics*, 2014. doi: 10.1142/S0219455414400318.

F. Bucchi, P. Forte, and F. Frendo. Temperature effect on the torque characteristic of a magnetorheological clutch. *Mechanics of Advanced Materials and Structures*, 22(1-2):150–158, 2014. doi: 10.1080/15376494.2014.910581.

F. Bucchi, P. Forte, A. Franceschini, and F. Frendo. Analysis of differently sized prototypes of an MR clutch by performance indices. *Smart Materials and Structures*, 22(10), 2013. doi: 10.1088/0964-1726/22/10/105009.

F. Bucchi, P. Forte, F. Frendo, and R. Squarcini. A magnetorheological clutch for efficient automotive auxiliary device actuation. *Frattura ed Integrità Strutturale*, 23:62–74, 2012. doi: 10.3221/IGF-ESIS.23.07.

R. Rizzo, A. Musolino, F. Bucchi, P. Forte, and F. Frendo. Magnetic FEM design and experimental validation of an innovative fail-safe magnetorheological clutch excited by permanent magnets. *IEEE Transactions on Energy Conversion*, 29(3):628–640, 2014. doi: 10.1109/TEC.2014.2325964.

A. Lanatà, G. Valenza, Greco. G., R. Bartolozzi, F. Bucchi, F. Frendo, and Scilingo E.P. How the autonomic nervous system and the driving style change with incremental stressing conditions during simulated driving. *IEEE Transactions on Intelligent Transportation Systems*, 2015. In press.

Papers in international conferences

A. Alba, F. Bucchi, F. Frenzo, and M. Gabiccini. Kinematic optimization of the arm of a working machine. *ASME 2014 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, IDETC/CIE 2014*, 2014.

R. Bartolozzi, F. Bucchi, and F. Frenzo. A multibody model of a formula student car – on-track validation and set-up optimization. *The 2nd Joint International Conference on Multibody System Dynamics, IMSD 2012*, 2012.

F. Bucchi, M. Elahinia, P. Forte, and F. Frenzo. Development and testing of a hybrid SMA/MR passive clutch. *ASME 2014 Smart Materials, Adaptive Structures and Intelligent Systems, SMASIS 2014*, 2014.

F. Bucchi, P. Forte, and F. Frenzo. Analysis of the experimental torque characteristic of a magnetorheological clutch using neural networks. *ASME 2013 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, SMASIS 2013*, 1, 2013. doi: 10.1115/SMASIS2013-3114.

F. Bucchi, P. Forte, and F. Frenzo. Thermal effects on the torque characteristic of a magnetorheological clutch. *6th ECCOMAS Conference on Smart Structures and Materials, SMART 2013*, 2013.

F. Bucchi, P. Forte, and F. Frenzo. Experimental characterization of a permanent magnet magnetorheological clutch for automotive applications. *ASME 2012 11th Biennial Conference on Engineering Systems Design and Analysis, ESDA 2012*, 4:345–355, 2012. doi: 10.1115/ESDA2012-82284.

Chapters in books

M.T. Andani, F. Bucchi, and M. Elahinia. *Chapter 3 SMA Actuation – Shape Memory Alloy Actuators: Modeling, Simulation, and Control*. John Wiley and Sons, Inc., Hoboken, New Jersey, 2014.

Papers in Italian journals

A. Alba, F. Bucchi, F. Frenzo, and M. Gabiccini. Simulazione multibody per la stabilità di una macchina operatrice. *Analisi e Calcolo*, Luglio/Agosto:26–29, 2014.

R. Bartolozzi, F. Bucchi, and F. Frenzo. Modello multibody di una vettura di formula SAE. *NewsMec*, Marzo/Aprile:26–30, 2014.

Papers in Italian conferences

F. Bucchi. Modellazione e sperimentazione di un innesto passivo basato su fluidi magnetoreologici e leghe a memoria di forma. *43^o Convegno Nazionale AIAS*, 2014.

F. Bucchi, P. Forte, A. Franceschini, and F. Frenzo. Caratterizzazione sperimentale di prototipi di frizione magnetoreologica. *41^o Convegno Nazionale AIAS*, 2012.

F. Bucchi, P. Forte, A. Franceschini, and F. Frenzo. Frizione a fluido magnetoreologico con magnete permanente per applicazioni automotive. *2^o Congresso Nazionale del Coordinamento della Meccanica Italiana, CDMI*, 2012.

F. Bucchi, P. Forte, F. Frenzo, E. Bartalesi, and R. Squarcini. Progetto e sperimentazione di una frizione a fluidi magnetoreologici. *40° Convegno Nazionale AIAS*, 2011.

International patents

R. Squarcini, E. Bartalesi, G. Armenio, P. Forte, F. Frenzo, R. Rizzo, F. Bucchi, and A. Ferri. Mechanical combustion-engine-driven fluid pump. *EPO Patent*, page WO2013004401 (A1), 2013.

R. Squarcini, E. Bartalesi, G. Armenio, P. Forte, F. Frenzo, R. Rizzo, A. Musolino, F. Bucchi, and A. Franceschini. Mechanical combustion-engine-driven fluid pump. *EPO Patent*, page WO2014029446 (A1), 2014.

R. Squarcini, E. Bartalesi, G. Armenio, P. Forte, F. Frenzo, R. Rizzo, A. Musolino, F. Bucchi, and A. Franceschini. Mechanical combustion-engine-driven fluid pump. *EPO Patent*, page WO2014029445 (A1), 2014.

R. Squarcini, E. Bartalesi, and F. Bucchi. Pneumatic brake assistance arrangement. *EPO Patent*, page WO2014029444 (A1), 2014.