CURRICULUM VITAE

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Affiliation

Free University of Bozen-Bolzano
Faculty of Science and Technology

Current position

Tenured Research (ING-IND/16)

Education

2009-2010: Research grant at the department of Production Systems and Business Economics (Politecnico di Torino) from May 2009 to August 2010.
Research title: Modelli e strumenti per la gestione dell'informazione di prodotto nelle lavorazioni meccaniche. Supervisor: prof. Franco Lombardi (Politecnico di Torino).

2006-2009: Research Doctorate in *Industrial Production Systems Engineering* (XXI cycle, Politecnico di Torino).
Thesis title: "Analysis and design of innovative steels for the fabrication of plastic moulds". Supervisor: prof. Donato Firrao (Politecnico di Torino).

2004: Degree in *Materials Engineering*, Politecnico di Torino.
Thesis title: Microstructural evolution of hardened and tempered microalloyed steels thermomechanical treated between 750 and 1050 °C by means of a process simulator. Supervisor: prof. Donato Firrao (Politecnico di Torino).

1998: High school degree. Istituto Tecnico Industriale "A. Avogadro", Torino.

Academic experience

2006-2010: Teaching Assistant of the following courses (Politecnico di Torino);
Tecnologia dei Materiali Metallici (prof. Donato Firrao, a.a. 2007/08, 2008/09);
Meccanica dei Materiali e Metallurgia Meccanica (prof. Donato Firrao, a.a. 2008/09);
Tecnologia Meccanica (prof. Franco Lombardi, a.a. 2008/2009);
Tecnologia Meccanica (prof. Paolo Chiabert, a.a. 2009/2010);
Tecnologia dei Processi Industriali (prof. Franco Lombardi, a.a. 2009/2010).

Extra academics

Temporary collaboration to surveys and consulting in metallurgical and fracture mechanics fields for prof. Donato Firrao (department of Chemical Engineering and Materials Science, Politecnico di Torino).
Temporary collaboration to surveys and consulting in metallurgical field for prof. Franco Lombardi (department of Production Systems and Business Economics, Politecnico di Torino).

Research activity

1. Areas of scientific interest

Fracture Mechanics
Manufacturing Engineering and Technology
Processing and Characterization of Metallic Materials

2. Research projects

2009-2010: "Modelli e strumenti per la gestione dell'informazione di prodotto nelle lavorazioni meccaniche", Duration: 3 years; Starting years: 2009; Fund: Regione Piemonte; Cooperations: Avio S.p.A.

2005-2007: "Progettazione di acciai innovativi a saldabilità migliorata per stampi per materie plastiche", Duration: 3 years; Fund: Prin 2005; Cooperations: Politecnico di Milano; Università di Genova, Università di Roma "Tor Vergata", Lucchini Sidermeccanica S.p.A.

2006-2009: "Processi di sintesi, proprietà meccaniche, applicazioni di leghe amorfe e nano strutturate", Duration: 3 years; Fund: Regione Piemonte D23; Cooperations: Università di Torino.

Participation to conferences and summer schools

2009. Torino, Italy, 24-26/06/2009. *IGF XX Conference* (Gruppo Italiano Frattura).

2008. Trieste, Italy, 21-24/07/2008. "*Elasticity and stress concentration – A new way of thinking*". Summer School organized by Gruppo Italiano Frattura (IGF).

2008. New Orleans, LA, USA, 09-13/03/2008. *2008 TMS Annual Meeting & Exhibition* (The Minerals, Metals & Materials Society).

2007. Perugia, Italy, 12-15/06/2007. *VI Convegno Nazionale sulla Scienza e Tecnologia dei Materiali* (Consorzio Internazionale per la Scienza e la Tecnologia dei Materiali, INSTM).

2007. Salsomaggiore Terme, Pr, Italy, 08-10/05/2007. *21° Convegno Nazionale Trattamenti Termici* (Associazione Italiana di Metallurgia, AIM).

2006. Milano, Italy, 22-24/11/2006. *XXXII Convegno Nazionale AIM*.

List of Publications

Articles in Refereed Journals

1 - 2010 D. Firrao, P. Matteis, **P. Russo Spena**, G.M.M. Mortarino, **Fatigue crack growth in inhomogeneous steel components**, INTERNATIONAL JOURNAL OF FATIGUE, 2010, Vol. 32, Issue 5, pp. 864-869, ISSN: 0142-1123, DOI: 10.1016/ j.ijfatigue.2009.10.004

2 - 2010 G. Scavino, F. D´Aiuto, P. Matteis, **P. Russo Spena**, D. Firrao, **Plastic localization phenomena in a Mn-alloyed austenitic steel**, METALLURGICAL AND MATERIALS TRANSACTIONS. A, PHYSICAL METALLURGY AND MATERIALS SCIENCE, 2010, Vol. 41, pp. 1493-1501, ISSN: 1073-5623, DOI: 10.1007/s11661-010-0191-9

3 - 2010 **P. Russo Spena**, D. Firrao, P. Matteis, **On plastic notch effects in quenched and tempered steels**, THE JOURNAL OF MINERALS AND MATERIALS CHARACTERIZATION AND ENGINEERING, pp. 9, 2010, Vol. 9, pp. 509-517, ISSN: 1539-2511

4 - 2010 P. Matteis, P. Russo Spena, C. Pozzi, T.A. Baser, M. Baricco, L. Battezzati, D. Firrao, A. Castellero, **Fracture behavior in Cu46.5Zr46.5Al7 and Cu46.5Zr41.5Al7Y5 bulk metallic glasses**, METALLURGICAL AND MATERIALS TRANSACTIONS. A, PHYSICAL METALLURGY AND MATERIALS SCIENCE, 2010, Vol. 41, pp. 1767-1774, ISSN: 1073-5623, DOI: 10.1007/s11661-010-0266-7

5 - 2009 D. Firrao, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, M. G. Ienco, G. Pellati, M. R. Pinasco, R. Gerosa, G. Silva, B. Rivolta, E. Tata, R. Montanari, **Effect of the heat treatment on the mechanical properties of a precipitation hardening steel for large plastic molds**, METALLURGIA ITALIANA, pp. 10, 2009, pp. 1-10, ISSN: 0026-0843

6 - 2008 D. Firrao, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, G. Scavino, F. D'Aiuto, **Room temperature plastic flow localization in a mn-alloyed austenitic steel**, MATERIALS SCIENCE FORUM, 2008, Vol. 604-605, pp. 139-146, ISSN: 0255-5476, DOI: 10.4028/0-87849-355-7.139

Proceedings

7 - 2009 G. Scavino, F. D´Aiuto, P. Matteis, **P. Russo Spena**, D. Firrao, **Plastic localization phenomena in a mn-alloyed austenitic steel**, in: epd congress 2009, the minerals, metals & materials society (tms) (usa), tms 2009 annual meeting & exhibition, San Francisco, CA, Usa 15-19/2/2009, pp. 8, 2009, pp. 111-118, isbn: 9780873397445

8 - 2009 **P. Russo Spena**, P. Matteis, G.M.M. Mortarino, D. Firrao, **Sugli effetti d'intaglio elasto-plastici in acciai temprati e rinvenuti: uno studio sperimentale del 1971 ri-esaminato con metodi numerici attuali**, In: Atti XX Convegno Nazionale IGF, Gruppo Italiano Frattura (ITA), XX Convegno Nazionale IGF, Torino 24-26/6/2009, pp. 6, 2009, pp. 259-264, ISBN: 9788895940250

9 - 2009 D. Firrao, P. Matteis, **P. Russo Spena**, **Operational safety assessment of 1940s cast steel pulleys**, The Printing House (USA), Materials Science & Technology 2009 Conference and Exhibition (MS&T'09), Pittsburgh 25-29/10/2009, 2009, pp. 541-549, ISBN: 9781615030064

10 - 2009 D. Firrao, P. Matteis, **P. Russo Spena**, G.M.M. Mortarino, G. Silva, B. Rivolta, R. Gerosa, M.R. Pinasco, M.G. Ienco, M. Fabbreschi, **Fatigue and fracture toughness properties of large-bloom mixed-microstructure heat-treated steels**, In: 12th International Conference on Fracture, 12th International Conference on Fracture, Ottawa (Canada) 12-17/7/2009

11 - 2008 D. Firrao, P. Matteis, **P. Russo Spena**, B. Rivolta, R. Gerosa, M.R. Pinasco, M.G. Ienco, G. Pellati, A. Silvestri, E. Tata, R. Montanari, A. Ghidini, **Simulazioni sperimentali delle trasformazioni di fase dell'austenite al raffreddamento in acciai per stampi per materie plastiche**, Associazione Italiana di Metallurgia (AIM) (ITA), 32° Convegno Nazionale AIM, Ferrara 24-26/09/2008, 2008, ISBN: 88-85298-67-2

12 - 2008 D. Firrao, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, M. Chiarbonello, G. Silva, B. Rivolta, R. Gerosa, A. Ghidini, **Fatigue behavior of homogeneous-microstructure and mixed-microstructure steels**, In: Plasticity, failure and fatigue in structural materials - from macro to nano: proceedings of the Hael Mughrabi honorary symposium, The Minerals, Metals & Materials Society (TMS) (USA), 2008 TMS Annual Meeting & Exhibition, New Orleans, LA, USA 9-13/3/2008, 2008, pp. 175-180, ISBN: 978-0-87339-714-8

13 - 2008 D. Firrao, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, M.G. Ienco, G. Pellati, M.R. Pinasco, R. Gerosa, G. Silva, E. Tata, R. Montanari, **Effect of the heat treatment on the mechanical properties of a precipitation hardening steel for large plastic molds**, In: Innovation in heat treatment for industrial competitiveness, Associazione Italiana di Metallurgia (AIM) (ITA), European Conference on Heat Treatment (ECHT) 2008, Verona 7- 9/5/2008, 2008, pp. 1-11, ISBN: 88-85298-64-8

14 - 2008 D. Firrao, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, G. Silva, B. Rivolta, R. Gerosa, A. Ghidini, **Fatigue behavior of homogeneous-microstructure and mixed-microstructure steels**, In: Multilevel Approach to Fracture of Materials, Components and Structures, VUTIUM (CZE), 17th European Conference on Fracture, Brno, Rep. Ceca 2-5/9/2008, 2008, pp. 2357-2363, ISBN: 978-80-214-3692-3

15 - 2008 P. Matteis, **P. Russo Spena**, C. Pozzi, D. Firrao, T.A. Baser, M. Baricco, J. Eckert, L. Battezzati, **Fracture of Cu46.5Zr46.5Al7 and Cu46.5Zr41.5Al7Y5 bulk metallic glasses**, In: Multilevel Approach to Fracture of Materials, Components and Structures, VUTIUM (CZE), 17th European Conference on Fracture, Brno, Rep. Ceca 2-5/9/2008, 2008, pp. 1717-1724, ISBN: 978-80-214-3692-3

16 - 2008 D. Firrao, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, G. Scavino, F. D´Aiuto, **Room temperature plastic flow localization in a Mn-alloyed austenitic steel**, Recent developments in the processing and application of structural metals and alloys, Como 22-25/06/2008

17 - 2008 F. D´Aiuto, G. Scavino, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, D. Firrao, **Portevin - Le Chatelier effect in a Mn-alloyed thermomechanically processed austenitic steel**, Associazione Italiana di Metallurgia (ITA), 3rd International Conference on ThermoMechanical Processing of steels, Padova 10-12/09/2008, ISBN: 88-85298-66-4

18 - 2007 D. Firrao, M. Chiarbonello, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, G. Scavino, G. Ubertalli, M.G. Ienco, G. Pellati, M.R. Pinasco, R. Gerosa, B. Rivolta, A. Silvestri, G. Silva, A. Tavasci, E. Tata, S. Missori, R. Montanari, A. Ghidini, **Meccanismi di rafforzamento per precipitazione in un**

acciaio innovativo per stampi per materie plastiche, AIM (ITA), 21° Convegno Nazionale Trattamenti Termici, Salsomaggiore (PR) 8-10/05/2007, ISBN: 88-85298-74-5

19 - 2007 G. Scavino, C. Federici, S. Maggi, J. Lamontanara, F. D´Aiuto, P. Matteis, M. Chiarbonello, G.M.M. Mortarino, **P. Russo Spena**, D. Firrao, **Applications of innovative trip and twip steels to automotive body structures**, In: European congress and exhibition on advanced materials and processes, European congress and exhibition on advanced materials and processes, Nurnberg, Germany 10-13/09/2007

20 - 2007 D. Firrao, M. Chiarbonello, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, G. Scavino, G. Ubertalli, M.G. Ienco, A. Parodi, G. Pellati, M.R. Pinasco, R. Gerosa, B. Rivolta, A. Silvestri, G. Silva, A. Tavasci, E. Tata, S. Missori, R. Montanari, A. Ghidini, **Strengthening mechanisms in a novel precipitation hardening steel for plastic molds**, European congress and exhibition on advanced materials and processes. European congress and exhibit, Norimberga 10-13/09/2007

21 - 2007 D. Firrao, M. Chiarbonello, P. Matteis, G.M.M. Mortarino, **P. Russo Spena**, G. Scavino, G. Ubertalli, M.G. Ienco, G. Pellati, M.R. Pinasco, E. Stagno, R. Gerosa, B. Rivolta, A. Tavasci, E. Tata, R. Montanari, A. Silvestri, G. Silva, S. Missori, A. Ghidini, **Comparison between traditional and innovative steels for large plastic moulds**, In: EPD Congress 2007, A. GOKHALE; J. LI; T. OKABE; EDS., TMS (USA), 2007, pp. 69-78, ISBN: 978-0-87339-678-3