

Massimo Pellizzari

Curriculum vitae

Massimo Pellizzari

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- Personal data**
- Bolzano il 15.05.70
 - Married (3 children)

Position Associate professor – Metallurgy
Dept. of Industrial Engineering, University of Trento

- Academic career**
- Graduated in Materials Engineering (University of Trento, 1996)
 - PhD in Metallurgical Engineering (University of Padova, 2000)
 - Associate research scientist (University of Trento, Nov. 1999 - May 2001)
 - Post-doc (University of Trento, 2000-2001)
 - Research Scientist (University of Trento, May 2002 - March 2006)
 - Associate Professor (Trento University, since March 2006)

- Research topics**
- Heat treatment and surface engineering of steels
 - Properties of tool steels and special cast irons
 - Ball milling and Spark Plasma Sintering of tool materials
 - Deep cryogenic treatment of tool steels
 - Applied computational thermodynamics: development of special cast irons and high alloy steels by means of Thermo-Calc™

European projects:

- RFS-PR-05076 "Laser Treatment of Profiled Rolls (LASERHARD)"
- RFSR-CT-2007-00026 "Improvement of automotive tools and components through the application of deep cryogenic treatments (CRYO)"
- MATERA + 2009 "EXTRUSIONIC: New Cryogenic-based thermochemical treatments for production of high-performance aluminium extrusion-dies"

- Teaching activity**
- Lectures in the course of Technology of Metallic Materials (Faculty of Engineering, University of Trento)
 - Lectures in the course of Metallurgy (Faculty of Engineering, University of Trento)
 - Lectures in the PhD program in Materials Engineering (Dpt. Materials Engineering and Industrial Technologies, University of Trento)
 - Heat treatment and surface engineering of steels (Master in Metallurgical Engineering, University of Udine – Italy)
 - Since academic year 2009-2010: "Engineering of metallic materials" (Master Course in Materials Engineering, University of Trento)
 - Since academic year 2010-2011: "Metallic materials and technologies for product design" (Master Course in Materials Engineering, University of Trento)
 - Supervisor of more than 30 Master Degree thesis

Teaching activity	<p>PhD School</p> <ul style="list-style-type: none"> • Academic Year 2006-2007: "Coatings to improve the corrosion and wear behaviour" (S. Rossi, F. Deflorian, G. Straffelini, M. Pellizzari), Scuola di dottorato in Ingegneria dei Materiali. (4 CFU), Università degli Studi di Trento • Academic Year 2006-2007, 2007-2008, 2008-2009: "Techniques of Thermal Analysis" (R. Di Maggio, L. Fambri, R. Ceccato, M. Pellizzari) , Scuola di dottorato in Ingegneria dei Materiali. (3 CFU), Università degli Studi di Trento • Academic Year 2006-2007, 2007-2008, 2008-2009 "Qualification of thermal analysis" (R. Di Maggio, L. Fambri, R. Ceccato, M. Pellizzari) Scuola di dottorato in Ingegneria dei Materiali. (2CFU), Università degli Studi di Trento • Academic Year 2007-2008, 2008-2009, 2010-2011 "Computational Thermodynamics" (M. Pellizzari), PhD School in Materials Engineering (2CFU), Università degli Studi di Trento • Supervisor of three PhD Thesis in Materials Engineering (D. Cescato, M.G. De Flora, A. Fedrizzi)
Teching activity for industry	<p><u>Forgital</u>: "Prove meccaniche e metallografia" 7 dicembre e 16 febbraio 2007. 20-21 Apr 2007 - <u>Camera di Commercio Udine</u> - Az. Speciale Ricerca e Formazione, Udine (UD): "Impianti fusori: i processi di colata in forma e colata continua" (durata: 8 ore). <u>Centro Produttività Veneto</u>, Vicenza (VI), 14 Giu 2007: "Tecnologie ed applicazioni innovative dei materiali metallici" (durata: 4 ore). <u>Forgital</u>, Velo d'Astico (VI) 4 Ott 2007 -: "Metallografia e analisi microstrutturale" (durata: 4 ore). <u>Corso Prove Meccaniche AIM</u>, Trento (TN), 13-16 Mag 2008: "Le prove di usura, principi di base, meccanismi metallurgici, modalità, normative e tecniche di prova" (durata: 1.5 ore). <u>Corso Prove Meccaniche AIM</u>, Trento (TN) 13-16 Mag 2008: "Prove meccaniche di caratterizzazione delle lamiere da stampaggio" (durata: 1.5 ore). <u>Officine Meccaniche Zoppelletto</u>, Cavazzale (VI), Ott-dic 2008: "La metallurgia degli acciai per lamiere" (durata: 32 ore). <u>ASFO Acciai</u>, Chiuppano (VI), Ott 2008 - Gen 2009 -: "La metallurgia e le normative per il laboratorio metallografico" (durata: 12 ore)</p>
Refereing activity	<ul style="list-style-type: none"> • Surface and Coatings Technology • Materials Science and Engineering A • International Journal of Fatigue • Materials Letters • Materials Science and Technology • Journal of Materials Science • Materials Characterization • ...

Most significant publications in the last years

International Journal

- M. Pellizzari, M. Zadra, A. Molinari: Tribological properties of surface engineered hot work tool steel for aluminium extrusion dies. *Surface Engineering* Vol. 23, No. 3, (2007) 165-168
- M. Pellizzari, A. Molinari, L. Girardini, L. Maldarelli: Deep cryogenic treatment of AISI M2 high speed steel. *Int. J. Microstructure and Materials Properties*, Vol. 3, Nos. 2/3, (2008) 383-390
- M. Pellizzari, A. Molinari, D. Cescato, A. Ghidini, S. Cantini: Thermal fatigue properties of hot work tool steels. *Int. J. Microstructure and Materials Properties*, Vol. 3, Nos. 2/3 (2008) 363-372
- M. Pellizzari, M. Zadra, A. Fedrizzi: Development of a hybrid tool steel produced by Spark Plasma Sintering. *Materials and Manufacturing Processes*, Vol.24:7 (2009) 873-878
- M.G. De Flora, M. Pellizzari: Behaviour at elevated temperature of 55NiCrMoV7 tool steel. *Materials and Manufacturing Processes*, Vol.24:7 (2009) 791-795
- M. Pellizzari, A. Molinari: The application-oriented heat treatment of tool steels. In press in *Materials and Manufacturing Processes*, Vol.24:7 (2009) 723-728
- M. Pellizzari, D. Cescato, M.G. DeFlora: Hot friction and wear behaviour of high speed steel and high chromium iron for rolls. *Wear* Vol.267 (2009) 467-475
- M. Pellizzari: Influence of Deep Cryogenic Treatment on the heat treatment of steel Cu-Be alloys. *International Heat Treatment and Surface Engineering* Vol.4 N.3 (2010) 105-109
- M. Pellizzari: Thermodynamic modeling for the alloy design of high speed steels and high chromium cast irons. *Materials and technology* 44 (2010) 3, 121-127
- D. Senthilkumar, I. Rajendran, M. Pellizzari: Effect of Cryogenic Treatment on the Hardness and Tensile Behavior of 4140 Steel. Accepted for publication in *Int. J. Microstructure and Materials Properties*
- D. Senthilkumar, I. Rajendran, M. Pellizzari: Influence of Cold and Deep Cryogenic Treatment on the residual state of stress of 4140 steel. *J. Materials Processing Technologies* 211 (2011) 396-401
- M. Pellizzari, A. Fedrizzi, M. Zadra: Influence of processing parameters and particle size on the properties of hot work and high speed tool steels by Spark Plasma Sintering. *J. Materials and Design* 32 (2011) 1796-1805
- M. Pellizzari, High temperature wear and friction behaviour of nitrided, PVD-duplex and CVD coated tool steel against 6082 Al alloy *Wear* (2011), doi:10.1016/j.wear.2011.01.067 (in press)
- M. Pellizzari, M.G. De Flora, Influence of laser hardening on the tribological properties of forged steel for hot rolls, *Wear* (2011), doi:10.1016/j.wear.2011.01.044 (in press)
- G. Straffelini, M. Pellizzari, L. Maines: Effect of sliding speed and contact pressure on the oxidative wear of austempered ductile iron. *Wear* 270 (2011) 714-719
- I. Calliari, M. Pellizzari, E. Ramous: Precipitation of secondary phases in a super duplex stainless steel ZERON100 isothermally aged. *Materials Science and Technology* 27 (2011) 928-932
- A. Fernández-Vicente, M. Pellizzari, J.L. Arias: Feasibility of laser surface treatment of pearlitic and bainitic ductile irons for hot rolls. *Journal of Materials Processing Technology* 212 (2012) 989-1002
- A. Fedrizzi, M. Pellizzari, M. Zadra: Influence of particle size ratio on densification behavior of AISI H13 / AISI M3:2 powder mixture. *Powder Technology* 228 (2012) 435-442
- A. Fedrizzi, M. Pellizzari, M. Zadra, E. Marin: Microstructural study and densification analysis of hot work tool steel matrix composites reinforced with TiB₂ particles. Accepted for publication in *Materials Characterization* 86 (2013) 69-79

Complete list of Publications

- [1] J. Kazior, C. Janczur, B. Stolarsky, M. Pellizzari, A. Molinari: **Surface engineering of P/M Fe- 1.5Mo alloy by nitrogen, oxygen and sulphur.** *Adv. In Powder Metallurgy & Particulate Materials*, 3 (1997) 17-3
- [2] A. Molinari, G. Straffelini, M. Pellizzari, M. Pirovano: **Wear behaviour of the diffusion layer and of the compound layer of nitrided steels.** *Surface Engineering*, 1998 Vol.14 No.6., 489
- [3] M. Pellizzari, A. Molinari, G. Straffelini, M. Pirovano: **Oxidative wear behaviour of the compound layer of a gas nitrided steel during dry sliding.** *Proceedings of the XI Conference on Surface Modification Technologies*, Paris 8-10 September 1997, 971.
- [4] M. Pellizzari: **Fenomeni di danneggiamento per usura di componenti meccanici nitrurati.** Atti del Convegno *Materiali, Ricerca e prospettive tecnologiche alle soglie del 2000*, FAST, Milano 1997, Vol. 2, 1294
- [5] A. Molinari, M. Pellizzari: **Dry sliding wear behaviour of nitrided and oxynitrided 41CrAlMo7 steel.** Proceedings of MATHEN 98, *Second International Conference on Materials and Manufacturing Technologies*, Cluj-Napoca (Romania) 10-13 Sept. 1998, 11
- [6] A. Molinari, M. Pellizzari, G. Straffelini: **Study of the corrosion of a surface treated AISI H11 hot work tool steel in molten aluminium alloy.** Proceedings of BRAMAT 99, *Conferenta Internationala de stiinta si Ingineria Materialor*, Brasov (Romania) 6-5 feb. 1999, 392
- [7] A. Molinari, Bacci, P. Campestrini, M. Pellizzari, B. Tesi: **Plasma nitriding of Fe-Cr-Mo steels,** *Powder Metallurgy*, 1999, Vol.42 N.2, 119
- [8] A. Molinari, M. Pellizzari, K.H. Stiasny, **Effect of deep cryogenic treatment on the properties of tool steel,** *Proceedings of Conf. Advances Materials Processes Technologies*, Dublin 2-6 august 1999, 1461

Anche come:

- [9] A. Molinari, M. Pellizzari, S. Gialanella, K.H. Stiasny: **Effect of deep cryogenic treatment on the properties of tool steel,** *J. of Mater. Proc. Technol.*, 118 (2001) 350-355
- [10] A. Molinari, F. Raimondi, M. Pellizzari, M. Pirovano, **Heat treatment and surface engineering of hot work tool steel.** *Proceedings of 5th Int. Tooling conference*, Leoben (Austria) 29 september - 1 october 1999, 485
- [11] E. Gordo, F. Velasco, N. Candela, J.M. Torralba, M. Pellizzari, A. Molinari, **Cryogenic treatments on HSS base composites reinforced with Nb and Ta carbides.** *Proceedings of EUROPM'99 Conference*, Torino (Italia) 8-10 novembre 1999, 75-82
- [12] A. Molinari, M. Pellizzari, G. Straffelini, M. Pirovano, **Corrosion behaviour of a surface treated AISI H11 hot work tool steel in molten aluminium alloy.** *Surf. Coat. Technol.*, 126 (1) (2000) 31-38
- [13] M. Faccoli, G.M. La Vecchia, R. Roberti, A. Molinari, M. Pellizzari: **Effect of different coatings on thermal fatigue behaviour of AISI H11 hot work tool steel.** *Int. J. of Mater. Product Technol.*, Vol.15, Nos. ½, 2000, 49
- [14] A. Molinari, F. Raimondi, M. Pellizzari, M. Pirovano, **Heat treatment and surface engineering of hot work tool steel.** *Proceedings of 1st European Congress Heat Treatment Surface Mechanical Treatment*, 14-16 July 2000, ATTT, Metz (F), 119

- [15] M. Pellizzari, A. Molinari, G. Straffelini: **Thermal fatigue resistance of plasma duplex treated tool steel**. *Proc. of 7th Int. Conf. Of Plasma Surface Engineering*, Garmisch Partenkirchen (FRG), 17-21 sept. 2000, *Surf. & Coat. Technol.* Vol 142-144, pp 1109-1115
- [16] A. Bennani, M. Farinet, F. Platini, C. Tacchi Venturi, A. Molinari, T. Marcu Puscas, M. Pellizzari: **Microstructure effect on superduplex stainless steel bars in large diameter: an industrial experience**, *Proceedings 6th World Duplex Conference and Expo*, Venezia (I), 17-20 October 2000, ed. AIM Milano (I), 443
- [17] M. Pellizzari, A. Molinari, S. Gialanella, G. Straffelini: **Effetto del trattamento criogenico sulle proprietà microstrutturali dell'acciaio AISI H13**, *Atti 28° Conv. Naz. AIM*, Milano 8-10 nov. 2000, Vol. 2, 831

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- [18] M. Pellizzari, A. Molinari, S. Gialanella, G. Straffelini: **Effetto del trattamento criogenico sulle proprietà microstrutturali dell'acciaio AISI H13**, *La Metallurgia Italiana*, Vol.1, 2001, 21-27
- [19] G. Straffelini, M. Pellizzari, A. Molinari: **Usura per strisciamento di un composito a matrice di alluminio contro diversi materiali per attrito**, *Atti 28° Conv. Naz. AIM*, Milano 8-10 nov. 2000, Vol. 1, 239
- [20] J. Kazior, A. Molinari, C. Janczur, M. Pellizzari: **Surface durability of thermochemically treated sintered iron alloy in N, S, and O containing atmospheres**, *Proc. Of 2000 PM World Congress*, Nov. 12-16 (2000), Kyoto (Japan), 1570-1573
- [21] M. Pellizzari, A. Molinari, S. Gialanella, G. Ischia, K.H. Stiasny: **Deep cryogenic treatment of tool steels**, *Proc. Of 18° Conv. Naz. Trattamenti Termici*, Rimini (I) 12-14 giugno 2001
- [22] A. Molinari, M. Pellizzari, A. Biggi, G. Corbo, A. Tremea: **Delamination behaviour of high speed steels for hot rolls**, *Proc. Of EUROMAT 2001*, Rimini – Italy 10-14 June 2001 (on CD)

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- [23] A. Molinari, M. Pellizzari, A. Biggi, G. Corbo, A. Tremea: **Delamination behaviour of high speed steels for hot rolls**, *La Metallurgia Italiana*, Vol.2, 2002, 31-35
- [24] M. Pellizzari, A. Molinari: **Il trattamento criogenico dell'acciaio da utensili**, *Trattamenti e Finiture*, N.3 giugno 2001, p.82
- [25] M. Pellizzari, A. Molinari: **Il trattamento criogenico dell'acciaio da utensili**, *Stampi*, N.6 giugno 2001, p.128
- [26] A. Molinari, M. Pellizzari, M. Pirovano: **Prove di autodifesa per l'acciaio**, *Stampi*, N.2 febbraio 2000, p.108
- [27] M. Pellizzari, A. Molinari, S. Gialanella, L. Fedrizzi, M. Farinet, E. Charruaz, A. Bennani: **Microstructural transformations in superduplex stainless steel during solution annealing of large blooms**, *Proc. Of Int. Conf. Stainless Steel World*, The Hague (The Netherlands), 13-15 November 2001, ed. KCI Publishing BV (The Netherlands), 107-111
- [28] G. Straffelini, M. Pellizzari, L. Maines, A. Molinari: **Friction and Wear behaviour of an Al-based metal-matrix composite against automobile friction materials**, *Int. J. of Materials and Product Technology*, Vol. 117, Nos. ¾, 2002, 275-290
- [29] G. Straffelini, G. Avi, M. Pellizzari: **Effect of three nitriding treatments on tribological performance of 42CrAlMo7 steel in boundary lubrication**, *Wear*, 252 (2002), 870-879
- [30] M. Farinet, E. Charruaz, A. Bennani, A. Molinari, F. Casari, M. Pellizzari, L. Fedrizzi: **Microstructural transformations and technological properties of superduplex stainless**

steel in large blooms, *Proc. Of 4th Stainless Steel Conference, 1'-13 June 2002, Paris (F) (on CD)*

- [31] M. Pellizzari, A. Molinari, A. Biggi: **Optimization of the Hot Roll Performances through Microstructural Tailoring**. Proc. MATHEN 02, *4th International Conference on Materials and Manufacturing Technologies*, Cluj-Napoca (Romania), Sept. 2002, in *Acta technica napocensis*, NuovaSerie, 2002, Vol. 45, pp. 329-334.
- [32] Molinari A., Pellizzari M., Biggi A., Corbo G., Tremea A.: **Development of spincast hot rolls through microstructural tailoring**. Proc. *44th Mechanical Working and Steel Processing*, Orlando (Florida), 8-11 september, 2002, Iron & Steel Society:Vol. XL, pp. 1233-1244.
- [33] A. Molinari, M. Pellizzari, A. Biggi, G. Corbo, A. Tremea: **Primary carbides in spincast HSS for Hot Rolls and their effect on the Oxidation Behaviour**, *Proc. Of the 6th Int. Tooling Conference, Karlstadt (Sweden)*, 10-13 September 2002, p.365-377
- [34] M. Pellizzari, A. Molinari: **Deep Cryogenic treatment of Cold Work Tool Steel**, *Proc. Of 6th Int. Tooling Conference, Karlstadt (Sweden)*, 10-13 September 2002, p.547-557
- [35] M. Pellizzari, A. Molinari: **Sviluppo di ghise a tempra indefinita per i cilindri finitori di laminazione piana a caldo**, *Atti 29° Conv. Naz. AIM*, Modena 13-15 nov. 2002, CD.
- [36] G. Straffelini, M. Pellizzari, S. Francesconi, A. Molinari: **Influenza della temperatura sul comportamento tribologico di un composito a matrice di alluminio in strisciamento contro materiale d'attrito**, *Atti 29° Conv. Naz. AIM*, Modena 13-15 nov. 2002, CD.
- [37] A. Molinari, M. Pellizzari, A. Biggi, G. Corbo, A. Tremea: **Metallurgical Development of Hot Rolls with improved Rolling Performances**. Proc. Of SARUC2002, 17-18 october 2002, Gauteng (RSA), p.37
- [38] A. Molinari, A. Tremea, M. Pellizzari, A. Biggi, G. Corbo: **High speed steels for hot rolls with improved impact and thermal fatigue resistance**. *Materials Science and Technology*, 2002, Vol. 18, n. 4, pp. 1574-1580.
- [39] M. Pellizzari, A. Molinari: **Damage Mechanisms in Duplex Treated Hot Work Tool Steel under Thermal Cycling**. *Surf. Eng.*, 2002, 18, 289-298
- [40] M.Pellizzari, A. Molinari, G. Straffelini: **Thermal fatigue resistance of gas and plasma nitrated 41CrAlMo7 steel**, *Materials Science and Engineering*, 2003, vol 352/1-2, pp 186 – 194
- [41] M.Zadra, M.Pellizzari, D.Anguillesi, A.Molinari: **Ottimizzazione del trattamento termico di una ghisa sferoidale austemperata per la realizzazione di segmenti per motori endotermici**. *Atti del 19° Convegno Nazionale Trattamenti Termici*, Salsomaggiore, 20-22 maggio 2003, AIM, 343

Anche come:

- [42] M.Zadra, M.Pellizzari, D.Anguillesi, A.Molinari: **Ottimizzazione del trattamento termico di una ghisa sferoidale austemperata per la realizzazione di segmenti per motori endotermici**. *La Metallurgia Italiana*, Vol.1, 2004, 23-30
- [43] M. Pellizzari, A.Molinari, F. Raimondi, G. Greno, A. Ghidini, F. Acerbis, A. Goglio: **Effetto del processo di produzione e trattamento termico sulle proprietà meccaniche dell'acciaio per utensili a caldo AISI H13 Parte 1: Effetto della qualità microstrutturale del prodotto siderurgico**. *Atti del 19° Convegno Nazionale Trattamenti Termici*, Salsomaggiore, 20-22 maggio 2003, AIM, 125

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- [44] M. Pellizzari, A.Molinari, F. Raimondi, G. Greno, A. Ghidini, F. Acerbis, A. Goglio: **Effetto del processo di produzione e trattamento termico sulle proprietà meccaniche dell'acciaio per utensili a caldo AISI H13 Parte 1: Effetto della qualità microstrutturale del prodotto siderurgico.** *La Metallurgia Italiana*, Vol. 4, 2004, 21-28
- [45] M. Pellizzari, A.Molinari, F. Raimondi, G. Greno, A. Ghidini, F. Acerbis, A. Goglio: **Effetto del processo di produzione e trattamento termico sulle proprietà meccaniche dell'acciaio per utensili a caldo AISI H13 Parte 2: Effetto della qualità microstrutturale dell'acciaio dopo trattamento termico.** Atti del 19° *Convegno Nazionale Trattamenti Termici*, Salsomaggiore, 20-22 maggio 2003, AIM, 135
- [46] Anche su: *La Metallurgia Italiana* Vol. 5, 2004, 43-48
- [47] M. Pellizzari, A. Molinari, A. Biggi, G. Corbo, A. Tremea: **Ottimizzazione del trattamento di rinvenimento in ghise a tempra indefinita per i cilindri finitori di laminazione piana a caldo.** Atti del 19° *Convegno Nazionale Trattamenti Termici*, Salsomaggiore, 20-22 maggio 2003, AIM, 333
- [48] L. Maines G.Straffelini, M.Pellizzari, A.Molinari: **INFLUENZA DELLA TEMPERATURA DI AUSTENITIZZAZIONE SULLA RESISTENZA ALL'IMPATTO DI ACCIAI PER LAVORAZIONI A FREDDO.** Atti del 19° *Convegno Nazionale Trattamenti Termici*, Salsomaggiore, 20-22 maggio 2003, AIM, 145
- [49] Anche su: *La Metallurgia Italiana* Vol. 6, 2004, 37-43
- [50] T. Marcu, M. Pellizzari, J. Kazior, T. Pieczonka, S. Gialanella, A. Molinari: **Microstructure and mechanical properties of a sintered dual phase steel obtained from a mixture of 316l and 434l stainless steel powders.** *Powder Metallurgy Progress*, Vol. 3 (2003) No.4, 155-164
- [51] G. Straffelini, M. Pellizzari, A. Molinari: **Influence of load and temperature on the dry sliding behaviour of metal matrix composite against friction material.** *Wear*, Vol. 256, N. 7-8, 2004, 754-763
- [52] G. Straffelini, M. Pellizzari, N. Bernardi: **Microstructure and impact behaviour of ASTM A105/AISI304L friction weldments.** *Materials Science and Technology*, Vol. 20, 2004, 634-640
- [53] M. Pellizzari, A. Molinari, A. Biggi, G. Corbo, A. Tremea.: **New semi high speed steel with low carbon content for the production of spincast roughing rolls with improved thermal fatigue resistance.** Proc. Of SARUC2004, 14-15 may 2004, Gauteng (RSA), p. **
- [54] M. Pellizzari, A. Molinari, A. Biggi, G. Corbo, A. Tremea: **Semi High Speed Steels for Roughing Rolls with improved Thermal Fatigue Resistance.** Proc. of 2nd International Conference & Exhibition on New Developments in Metallurgical Process Technology, Riva del Garda- Italy 19-21 September 2004 Organised by Associazione Italiana di Metallurgia, on CD
- [55] Anche su *La Metallurgia Italiana* Vol. 9, 2005, 57-61
- [56] M. Pellizzari, M. Zadra, A. Molinari: **350°C-Thermal stability of austempered ductile iron.** Proc. of 14th *IFHTSE Congress*, Shanghai (China), CHTS, october 26-28 2004, Vol. 1, 195-200
- [57] M. Pellizzari, M. Zadra, A. Molinari: **Correlazione tra microstruttura e stabilità termica di una ghisa sferoidale austemperata.** Atti 30° *Conv. Naz. AIM*, Vicenza 17-19 nov. 2004, CD.

- [58] M. Zadra, M. Pellizzari, A. Molinari: **Ghise sferoidali ferritico-martensitiche: microstruttura e proprietà meccaniche** *Atti 30° Conv. Naz. AIM*, Vicenza 17-19 nov. 2004, CD.
- [59] G. Straffelini, M. Pellizzari, N. Bernardi: **Saldatura per attrito di alberi in acciaio inossidabile e acciaio a basso carbonio** *Atti 30° Conv. Naz. AIM*, Vicenza 17-19 nov. 2004, CD.
- [60] A. Molinari, M. Pellizzari, A. Tremea, A. Biggi, G. Corbo: **Effect of the matrix microhardness on thermal fatigue behaviour of spincast high speed steels for hot rolls.** *Mater. Sci. Technol.* Vol. 21, N.3 (2005) 352-356.
- [61] M. Pellizzari, A. Molinari, G. Straffelini: **Tribological behaviour of hot rolling rolls.** Proc. of “*Wear of Materials 2005*”, 24-28 april 2005, San Diego (USA), [*Wear* Vol. 259 \(2005\) 1281-1289](#)
- [62] G. Straffelini, L. Maines, M. Pellizzari, P. Scardi: **Dry sliding wear of Cu-Be alloys.** To be presented in “*Wear of Materials 2005*”, 24-28 april 2005, San Diego (USA), accepted for publication in [*Wear* 259 \(2005\) 506-511](#)
- [63] M. Pellizzari, M. Zadra, A. Molinari: **Tribological properties of surface engineered hot work tool steel for aluminium extrusion dies.** Proc. of “1st Int. Conf. on Heat Treatment and Surface Engineering of Tools and Dies”, 8-11 june 2005, Pula (Croatia)
- [64] [Anche su *Surface Engineering* Vol. 23, No. 3, 2007, 165-168](#)
- [65] M. Pellizzari, A. Molinari, D. Cescato, A. Tremea, G. Corbo, A. Biggi: **Wear and friction behaviour of High Chromium Iron and High Speed Steels for hot rolls.** Proc. Int. Conf. “Abrasion 2005”, Sao Paolo (Brazil), 14-17 august, 2005, Ed. A. Sinatora, M. Boccalini Jr., M.E. Hara, 189-198
- [66] M. Pellizzari, A. Molinari, L. Girardini, L. Maldarelli: **Deep cryogenic treatment of AISI M2 high speed steel.** Proc. Of 7th International Tooling Conference, Tooling materials and their applications from research to market, Torino, Italy, 2-5 May 2006, Ed. M. Rosso, M. Actis Grande, D. Ugues, Vol. 1, p. 127-134
- [67] [Anche su *Int. J. Microstructure and Materials Properties*, Vol. 3, Nos. 2/3, 2008, 383-390](#)
- [68] M. Pellizzari, A. Molinari, D. Cescato, A. Ghidini, S. Cantini: **Thermal fatigue properties of hot work tool steels.** Proc. Of 7th International Tooling Conference, Tooling materials and their applications from research to market, Torino 2-5 May 2006, Ed. M. Rosso, M. Actis Grande, D. Ugues, Vol. 2, p.529-536
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