

Curriculum Vitae

Personal Information

Name: Silvia Barella

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Languages

Italian: Native Language.

English: Understanding, listening and reading: Good; Speaking: Good, Writing: Good (CEFR level: C1).

Education

- PhD in Mechanical Systems Engineering: 2005-2008, Politecnico di Milano (cycle XX, score: merito). Thesis title: Asymmetric rolling of duplex stainless steel 2205.
- Master of Science in Materials Engineering: 1998-2004, Politecnico di Milano (score: 100/100 *cum laude*).

Professional experience

- Associate professor at Politecnico di Milano, Department of Mechanical Engineering, since the 21th of December 2018 up to present (SSD: ING-IND/21 - Metallurgy)
- Assistant professor at Politecnico di Milano, Department of Mechanical Engineering, since the 1st of May 2008 up to December 2018 (SSD: ING-IND/21 - Metallurgy)

Teaching experience

- "Tecnologie dei materiali: tecnologie metallurgiche" (3rd year of the bachelor degree in Materials and Nanotechnology Engineering, 5 cfu) at Politecnico di Milano - Academic years 2017/2018.
- "Innovations in metallurgical plants and processes" (2nd year of the master degree in Mechanical Engineering, 6 cfu) at Politecnico di Milano - Since Academic years 2009/2010, up to present.
- "Metallurgia e materiali non metallici" ("Metallurgy and non-metallic materials") (1st year of the bachelor degree in Mechanical Engineering and Energy Engineering, 7 cfu) at Politecnico di Milano - Since Academic year 2008/2009, up to present.
- "Fondamenti di Metallurgia e Tecnologia Meccanica" ("Fundamentals of Metallurgy and Manufacturing Technology") (2nd year of the bachelor degree in Mechanical Engineering, 5 cfu) at Politecnico di Milano - Academic year 2007/2008.
- Lecturer at the course "Applied Metallurgy" (1st year of the master degree in Mechanical Engineering) at Politecnico di Milano - since Academic year 2014/2015

- Lecturer at the course "Plastic deformation of metals" (2nd year of the master degree in Materials and Nanotechnology Engineering) at Politecnico di Milano - since Academic year 2012/2013
- Lecturer at the Master "Siderurgia: processi, prodotti, energia, ambiente e sicurezza" (Ironmaking and Steelmaking: processes, products, environmental and safety) from 2006 to 2007 at Mechanical Department, Politecnico di Milano.
- Lecturer at the Master "Processi siderurgici" (Steelmaking processes) from 2010 to 2012 at MIP, Politecnico di Milano.
- Co-Supervisor of 1 PhD thesis in Mechanical Engineering. The thesis is about rolling of boron alloyed steel.
- Supervisor of 5 master theses in Mechanical Engineering .
- Co-supervisor of more than 20 master theses in Mechanical and Materials Engineering.
- Tutorship of 2 project works for the Master "Processi siderurgici", MIP Politecnico di Milano.
- Lecturer for AIM (Italian Metallurgy Association) in many courses related to metallurgy and metallurgical processes.

Laboratory experience

- Metals characterization: 15 years of experience in the Metallurgy lab. of Department of Mechanical Engineering of Politecnico di Milano (from sample preparation to OM, SEM, SEM-EDS, SEM-EBSD, FEG-SEM observations).
- Processes simulation and heat treatments: 10 years of experience in application of standard processes and design of non-standard experiments including the use of muffle furnaces, laboratory melting furnaces, and laboratory rolling mill.
- Mechanical testing: good experience in standard mechanical testing of metals, such as high temperature tensile and monotonic fracture testing.
- Micro-tomography: 2 years of experience and good knowledge about the tests set up (CT scanning and radiography) and the 3D reconstruction of different materials.

International and national research projects

- Delighted (RFCS) from 2020 to 2023 - Design of Lightweight Steels for Industrial Applications; Member of the core team of Politecnico di Milano.
- SteelPro 4.0 (Regione Lombardia) from 2017 to 2020 - Development of special steels through innovation in the steelmaking process, materials characterization and integrated control of the production line; Member of the core team of Politecnico di Milano.
- RFCS MeltCon (RFSR-CT-2013-00002) from 2013 to 2016: Determining process conditions for online monitoring of temperature and carbon content in the electric arc furnace to optimize end point control; Scientific person in charge for the Department of Mechanical Engineering of Politecnico di Milano.

- RFCS KinPcc (RFSR-CT-2011-00008) from 2011 to 2014: Kinetics of precipitation during continuous casting of plate steels; Member of the core team of Politecnico di Milano for the laboratory simulation of precipitation in controlled conditions.
- Batfoam (RFSR-CT-2008-00004) from 2008 to 2011: Control of slag and refining conditions in the BOF; Member of the core team of Politecnico di Milano for evaluation of role of viscosity and gas flowrate on slag foaming.

Achievements

- Co-responsible of the research fund for the RFCS MeltCon at the Department of Mechanical Engineering - Politecnico di Milano.
- Principal investigator for the Department of Mechanical Engineering of Politecnico di Milano in the RFCS MeltCon.
- Fundraising for research since 2014: about 130,000 €.
- Fundraising for cooperation with industry since 2014: more than 75,000 €.
- Pre-examiner of the PhD thesis of Mr. T. Alatarvas, University of Oulu, June 2018.
- Pre-examiner of the PhD thesis of Mr. A. Luakka, University of Oulu, June 2019.
- Pre-examiner of the PhD thesis of Mr. T. Juuti, University of Oulu, September 2019.
- Winner of the call "Finanziamento delle attività base di ricerca" (Italian Law 11 dicembre 2016 n. 232).
- Technical Staff Member of the AMALA (Advanced MAterials LAboratory) lab at Politecnico di Milano: enable to the use of NSI micro-tomography system.
- Member of the "Forging" Technical committee of AIM (Italian Metallurgy Association) since 2008 .
- Member of the "Ironmaking" Technical committee of AIM (Italian Metallurgy Association) since 2008 and secretariat of the the same committee since 2011.
- Winner of "Young Research award, 2013" at the Mechanical Department, Politecnico di Milano.
- Winner of "FELICE DE CARLI" award and medal (2010), AIM (Italian Metallurgy Association) for a young researcher in Metallurgy.
- Passed the government exam and licensed as a profession engineer (2004), and register as a member of the "Ordine degli ingegneri di Milano" since 2009.

Research activities

- Steel and non-ferrous alloys processing, plastic deformation and heat treatment. This topic can be split into the following research areas (the numbers in brackets relate to the list of 'Papers in referred journals' below):

Processing of liquid metals and solidification: the research aims to study the melting and refining processes for the improvement of product quality and plant innovation; also the solidification processes (continuous casting, foundry, welding) is part of this item. The research is devoted to enhancing the steel-making process both in the BOF and EAF modeling the chemical phenomena

[4,1], creating new operative practices [24] and conducting survey about the use of new raw materials [15,26] like HBI to reduce carbon emissions. The use of laser welding on superalloys and for dissimilar laser welding were investigated from the metallurgical point of view [12,18,20,39]. A study about the production of metallic open cells sponges (in particular made of steel) is part of this research item [27,34, 46]. A new research field is devoted to the study of cast of Inconel alloys and the relation among casting parameters, microstructure, defects and mechanical properties [16]. Some efforts in a new research field are devoted to the production of light steel (alloyed with Mn and Al) [8].

Plastic deformation of metals, heat treatments: the research aims to find relationships among applied operative parameters (thermal range, total applied deformation, deformation rate), the induced microstructure and crystallographic textures, the end mechanical properties and the corrosion resistance of the treated materials. The studies were focused on plastic deformation of carbon steel, e.g. for automotive applications [5,40,64], and on stainless steel, in particular duplex and super-duplex [7,13,14, 38]. Some severe and non-conventional process on this material were also investigated [1, 9,11,44,54,59]. Heat treatment on superalloys and stainless steel were investigated [17,30,33]. New research item is on the innovative isothermal extrusion of the aluminum alloys [2].

- Metallurgical processes by-products: The aim of the research is the characterization and re-use of by-products, energy efficiency in metallurgical processes and the reduction of their environmental impact (fumes, slag treatment etc.); the inertization of EAF' slag by silica addition, the safe re-use [21,31,36,49] and the influence of its microstructure and chemical composition on the leaching behavior were investigated [23,28]. Also Weal slag inertization was investigated [32] and the possibility to use alternative process, like ATP, to obtain cast iron from jarosite [4]. Some viability studies on the use of red mud or BF sludge for the production of iron rich materials were carried out [19,22].
- Metallurgical examinations and failure analysis: the expertise in the metallurgical field naturally leads to the study of some cases of failure analysis. Some interesting cases are related to the failure of a cableway rope [60], a gas turbine blade [58], a large batch of tuna cans [56], a steam turbine rotor [55], a cupronickel heat exchanger [53], some electro-valves in espresso coffee machines [47,43], a continuous casting copper mold [37].

List of publications

Text book

Barella, S., Gruttadauria, A., Metallurgia e materiali non metallici, 2017, Esculapio Editore

Papers in referred journals

1. Gruttadauria, A., Barella, S., Guerra, A., Ni-Based CW6MC: Effect of the Internal Revert Recycle on the Soundness of the Alloy, (2021) International Journal of Metalcasting, *in press*, DOI: 10.1007/s40962-021-00600-z.
2. Gruttadauria, A., Barella, S., Fiocchi C., Mechanical Response of Ni-Based CU5MCuC Alloy to Different Stabilization Thermal Treatments, (2021) International Journal of Metalcasting, 15 (3), pp 829 - 838, DOI: 10.1007/s40962-020-00519-x.
3. Gruttadauria, A., Barella, S., Mapelli, C., Mombelli, D., Dall'Osto, G., Modeling of a Continuous Charging Electric Arc Furnace Metallic Loss Based on the Charge Mix, (2021) Steel Research International, 92 (5), art. no. 2000580, DOI: 10.1002/srin.202000580.
4. Mombelli D., Dall'Osto G., Villa G., Mapelli C., Barella S., Gruttadauria A., Angelini L., Senes C., Bersani M., Frittella P., Moreschi R., Marras R., (2021) Study on the Pneumatic Lime Injection in the Electric Arc Furnace Process: An Evaluation on the Performance Benefits, Steel Research International, DOI: 10.1002/srin.202100083
5. Barella, S., Ripamonti, D., Mechanical and microstructural characterization of metals and alloys, (2020) Crystals, 10 (12), art. no. 1111, pp. 1-2, DOI: 10.3390/cryst10121111.
6. Mombelli, D., Mapelli, C., Barella, S., Gruttadauria, A., Ragona, M., Pisu, M., Viola, A., Characterization of cast iron and slag produced by red muds reduction via Arc Transferred Plasma (ATP) reactor under different smelting conditions, (2020) Journal of Environmental Chemical Engineering, 8 (5), art. no. 104293, DOI: 10.1016/j.jece.2020.104293.
7. Zanardi, F., Mapelli, C., Barella, S., Reclassification of Spheroidal Graphite Ductile Cast Irons Grades According to Design Needs, (2020) International Journal of Metalcasting, 14 (3), pp. 622-655, DOI: 10.1007/s40962-020-00454-x.
8. Gruttadauria, A., Barella, S., Mapelli, C., Mombelli, D., Influence of different soaking times at 1050 °c on the ut response due to microstructure evolution of 2205 duplex stainless steel, (2020) Metals, 10 (4), art. no. 503, DOI: 10.3390/met10040503.
9. Gruttadauria, A., Barella, S., Fiocchi, C., Mechanical Response of Ni-Based CU5MCuC Alloy to Different Stabilization Thermal Treatments, (2020) International Journal of Metalcasting, DOI: 10.1007/s40962-020-00519-x .
10. Mombelli, D., Dall'Osto, G., Mapelli, C., Gruttadauria, A., Barella, S., Modeling of a Continuous Charging Electric Arc Furnace Metallic Loss Based on the Charge Mix, (2020) Steel Research International, DOI: 10.1002/srin.202000580.
11. Mapelli, C., Barella, S., Gruttadauria, A., Mombelli, D., Bizzozero, M., Veys, X., γ Decomposition in Fe-Mn-Al-C lightweight steels, (2020) Journal of Materials Research and Technology, 9 (3), pp. 4604-4616, DOI: 10.1016/j.jmrt.2020.02.088.

12. Mombelli, D., Barella, S., Gruttadauria, A., Mapelli, C., Iron recovery from Bauxite Tailings Red Mud by thermal reduction with blast furnace sludge, (2019) *Applied Sciences (Switzerland)*, 9 (22), art. no. 4902, DOI: 10.3390/app9224902.
13. Mombelli, D., Gruttadauria, A., Barella, S., Mapelli, C., The influence of slag tapping method on the efficiency of stabilization treatment of electric arc furnace carbon steel slag (EAF-C), (2019) *Minerals*, 9 (11), art. no. 706, DOI: 10.3390/min9110706.
14. Barella, S., Mapelli, C., Mombelli, D., Gruttadauria, A., Laghi, E., Ancona, V., Valentino, G., Model for the final decarburisation of the steel bath through a self-bubbling effect, (2019) *Ironmaking and Steelmaking*, 46 (8), pp. 721-724, DOI: 10.1080/03019233.2017.1405179.
15. Barella, S., Ciuffini, A.F., Gruttadauria, A., Mapelli, C., Mombelli, D., Longaretti, E., Corrosion and oxidation behavior of a Fe-Al-Mn-C duplex alloy, (2019) *Materials*, 12 (16), art. no. 2572, DOI: 10.3390/ma12162572.
16. Gruttadauria, A., Barella, S., Gerosa, R., An overview of austenitic stainless-steel rock anchors damage in an environment rich with chlorides, (2019) *Engineering Failure Analysis*, 100, pp. 88-102, DOI: 10.1016/j.engfailanal.2019.02.054
17. Mombelli, D., Mapelli, C., Barella, S., Gruttadauria, A., Spada, E., Jarosite wastes reduction through blast furnace sludges for cast iron production, (2019) *Journal of Environmental Chemical Engineering*, 7(2), art. no. 102966, DOI: 10.1016/j.jece.2019.102966.
18. Ciuffini, A.F., Barella, S., Di Cecca, C., Di Schino, A., Gruttadauria, A., Napoli, G., Mapelli, C. , Transformation-induced plasticity in super duplex stainless steel F55-UNS S32760, (2019) *Metals*, 9(2) art. no. 191, DOI: 10.3390/met9020191.
19. Mombelli, D., Barella, S., Gruttadauria, A., Mapelli, C., Le Saout, G., Garcia-Diaz, E., Effects of basicity and mesh on Cr leaching of EAF carbon steel slag, (2018) *Applied Sciences*, 9(1), art. no. 121, DOI: 10.3390/app9010121.
20. Mapelli, C., Barella, S., Mombelli, D., Gruttadauria, A. , The integrated route for the steelmaking and the pollution sources, (2018) *Giornale Italiano di Medicina del Lavoro ed Ergonomia*, 40(3), pp. 128-136
21. Ciuffini, A.F., Barella, S., Martínez, L.B.P., Mapelli, C., Pariente, I.F, Influence of microstructure and shot peening treatment on corrosion resistance of AISI F55-UNS S32760 super duplex stainless steel, (2018) *Materials*, 11 (6), art. no. 1038, DOI: 10.3390/ma11061038.
22. Ciuffini, A.F., Barella, S., Di Cecca, C., Gruttadauria, A., Mapelli, C., Merello, L., Mainetti, G., Bertoletti, M., Surface quality improvement of AA6060 aluminum extruded components through liquid nitrogen mold cooling, (2018) *Metals*, 8 (6), art. no. 409, DOI: 10.3390/met8060409.
23. Mombelli, D., Mapelli, C., Barella, S., Gruttadauria, A., Sosio, R., Valentino, G., Ancona, V., Model for Phosphorus Removal in LD Converter and Design of a Valuable Operative Practice, (2018) *Steel Research International*, 89 (5), art. no. 1700467, DOI: 10.1002/srin.201700467.
24. Mombelli, D., Mapelli, C., Di Cecca, C., Barella, S., Gruttadauria, A., Ragona, M., Pisu, M., Viola, A., Characterization of cast iron and slag produced by jarosite sludges reduction via Arc Transferred Plasma (ATP) reactor, (2018) *Journal of Environmental Chemical Engineering*, 6 (1), pp. 773-783, DOI: 10.1016/j.jece.2018.01.006.
25. Zebarjadi Sar, M., Barella, S., Gruttadauria, A., Mombelli, D., Mapelli, C., The Influence of Thermomechanical Processing Conditions on the Evolution of Microstructure and Crystallographic Textures and the Mechanical Properties of Deformed Mild Steels in the Intercritical Region, (2018) *Advances in Materials Science and Engineering*, 2018, art. no. 8298310, DOI: 10.1155/2018/8298310.
26. Mapelli, C., Barella, S., Gruttadauria, A., Mombelli, D., Ciuffini, A. F., Cusolito, M., Defects, their source and detection in wire drawn products, (2018) *Metallurgia Italiana*, 110 (6), pp. 5-10.

27. Nemfardi, R., Bedini, R., Zucchelli, G., Bonora, D., Mapelli, C., Barella, S., Gruttadauria, A., Mombelli, D., Continuous annealing by resistance heating furnace of stainless steels wire drawn, (2018) *Metallurgia Italiana*, 110 (6), pp. 48-52.
28. Mapelli, C., Ciuffini, A. F., Barella, S., Gruttadauria, A., Mombelli, D., New light corrosion resistant steel without chromium, (2018) *Metallurgia Italiana*, 110 (1), pp. 38-43.
29. Tromellini, C.M., Ciuffini, A. F., Barella, S., Gruttadauria, A., Di Cecca, C., Mapelli, C., Mechanical properties evolution on heat treated severe cold rolled UNS S32760 Super Duplex Stainless Steel, (2018) *Metallurgia Italiana*, 110 (1), pp. 20-27.
30. Barella, S., Mapelli, C., Mombelli, D., Gruttadauria, A., Laghi, E., Ancona, V., Valentino, G., Model for the final decarburisation of the steel bath through a self-bubbling effect, (2017) *Ironmaking and Steelmaking*, pp. 1-4. Article in Press, DOI: 10.1080/03019233.2017.1405179.
31. Ciuffini, A.F., Barella, S., Di Cecca, C., Gruttadauria, A., Mombelli, D., Mapelli, C., Hot-dip aluminizing on AISI F55-UNS S32760 super duplex stainless steel properties: Effect of thermal treatments, (2017) *Metals*, 7 (12), art. no. 525, DOI: 10.3390/met7120525.
32. Baghjari, S.H., Malek Ghaini, F., Previtali, B., Gokhan Demir, A., Shahverdi, H.R., Mapelli, C., Barella, S., The effect of electrospark nickel interlayer thickness on the characteristics of Niobium to 410 stainless steel dissimilar laser welding, (2017) *Journal of Manufacturing Processes*, 30, pp. 51-62, DOI: 10.1016/j.jmapro.2017.09.007.
33. Ciuffini, A.F., Barella, S., Di Cecca, C., Gruttadauria, A., Crugnola, S., Mapelli, C., Local pitting corrosion resistance evaluation in large forged UNS-S32760 Super Duplex Stainless Steel parts of a sphere valve for the oil&gas industry, (2017) *Metallurgia Italiana*, 109 (10), pp. 33-45.
34. Ciuffini, A.F., Barella, S., Di Cecca, C., Gruttadauria, A., Mapelli, C., Mombelli, D., Isothermal austenite-Ferrite phase transformations and microstructural evolution during annealing in super duplex stainless steels, (2017) *Metals*, 7 (9), art. no. 368, DOI: 10.3390/met7090368.
35. Di Cecca, C., Barella, S., Mapelli, C., Gruttadauria, A., Ciuffini, A.F., Mombelli, D., Bondi, E., Thermal and chemical analysis of massive use of hot briquetted iron inside basic oxygen furnace (2017) *Journal of Iron and Steel Research International*, 24 (9), pp. 901-907, DOI: 10.1016/S1006-706X(17)30132-2.
36. Barella, S., Gruttadauria, A., Mapelli, C., Mombelli, D., Taiana, P., Bosatra, M., Morini, A., Solidification microstructure of centrifugally cast Inconel 625, (2017) *China Foundry*, 14 (4), pp. 304-312, DOI: 10.1007/s41230-017-7017-y.
37. Barella, S., Di Cecca, C., Gruttadauria, A., Mapelli, C., Mombelli, D., Ciuffini, A.F., Morini, A., Bosatra, M., Microstructure evolution and properties of Hastelloy UNS N06200 and UNS N06022 as a function of the applied thermal treatment, (2017) *International Journal of Metalcasting*, 11 (3), pp. 456-466, DOI: 10.1007/s40962-016-0090-y.
38. Baghjari, S.H., Malek Ghaini, F., Shahverdi, H.R., Ebrahimnia, M., Mapelli, C., Barella, S., Characteristics of electrospark deposition of a nickel-based alloy on 410 stainless steel for purpose of facilitating dissimilar metal welding by laser, (2016) *International Journal of Advanced Manufacturing Technology*, 87 (9-12), pp. 2821-2828, DOI: 10.1007/s00170-016-8668-3.
39. Mombelli, D., Mapelli, C., Di Cecca, C., Barella, S., Gruttadauria, A., Red mud reduction through blast furnace sludge for cast iron production, (2016) *Metallurgia Italiana*, 108 (11), pp. 23-41.
40. Baghjari, S.H., Malek Ghaini, F., Shahverdi, H.R., Mapelli, C., Barella, S., Ripamonti, D., Laser welding of niobium to 410 steel with a nickel interlayer produced by electro spark deposition, (2016) *Materials and Design*, 107, pp. 108-116, DOI: 10.1016/j.matdes.2016.06.022.
41. Mombelli, D., Mapelli, C., Di Cecca, C., Barella, S., Gruttadauria, A., Electric arc furnace slag: Study on leaching mechanisms and stabilization treatments, (2016) *Metallurgia Italiana*, 108 (10), pp. 5-17.

42. Mombelli, D., Di Cecca, C., Mapelli, C., Barella, S., Bondi, E., Experimental analysis on the use of BF-sludge for the reduction of BOF-powders to direct reduced iron (DRI) production, (2016) *Process Safety and Environmental Protection*, 102, pp. 410-420, DOI: 10.1016/j.psep.2016.04.017.
43. Mombelli, D., Mapelli, C., Barella, S., Di Cecca, C., Le Saout, G., Garcia-Diaz, E., The effect of microstructure on the leaching behaviour of electric arc furnace (EAF) carbon steel slag, (2016) *Process Safety and Environmental Protection*, 102, pp. 810-821, DOI: 10.1016/j.psep.2016.05.027.
44. Barella, S., Di Cecca, C., Mapelli, C., Gruttadauria, A., Bondi, E., Marinari, A., Study of a New Operating Practice for Refining High Silicon Hot Metal in a BOF Converter, (2016) *Steel Research International*, 87 (7), pp. 941-946, DOI: 10.1002/srin.201500283.
45. Gariboldi, E., Ozhoga-Maslovskaia, O., Lemke, J.N., Barella, S., Conditions for the early onset of blisters during heat treatments of Al-Si-Cu cast part, (2016) *Metallurgia Italiana*, 108 (6), pp. 85-88.
46. Di Cecca, C., Barella, S., Mapelli, C., Ciuffini, A.F., Gruttadauria, A., Mombelli, D., Bondi, E., Use of DRI/HBI in ironmaking and steelmaking furnaces, (2016) *Metallurgia Italiana*, 108 (4), pp. 33-38.
47. Gruttadauria, A., Barella, S., Mapelli, C., Mombelli, D., Castrodeza, E.M., Production of 17CrMoV5-11 steel sponges utilizing powder metallurgical replication technique with SiC as space holder, (2016) *Powder Metallurgy*, 59 (2), pp. 95-99, DOI: 10.1179/1743290115Y.0000000018.
48. Mombelli, D., Mapelli, C., Barella, S., Di Cecca, C., Le Saout, G., Garcia-Diaz, E., The effect of chemical composition on the leaching behaviour of electric arc furnace (EAF) carbon steel slag during a standard leaching test, (2016) *Journal of Environmental Chemical Engineering*, 4 (1), pp. 1050-1060, DOI: 10.1016/j.jece.2015.09.018
49. Ciuffini, A.F., Di Cecca, C., Ferrise, F., Mapelli, C., Barella, S., Application of virtual/augmented reality in steelmaking plants layout planning and logistics, (2016) *Metallurgia Italiana*, 2016 (7), pp. 5-10.
50. Barella, S., Cena, C., Gruttadauria, A., Mapelli, C., Mombelli, D., Ripamonti, D., Fantini, G., Dioni, D., Hardening optimization of high chromium-manganese austenitic steel, (2016) *ISIJ International*, 56 (9), pp. 1668-1674, DOI: 10.2355/isijinternational.ISIJINT-2016-135.
51. Primavera, A., Pontoni, L., Mombelli, D., Barella, S., Mapelli, C., EAF Slag Treatment for Inert Materials' Production, (2016) *JOURNAL OF SUSTAINABLE METALLURGY*, 2(1), pp.3-12, DOI: 10.1007/s40831-015-0028-2.
52. Mombelli, D., Mapelli, C., Barella, S., Gruttadauria, A., Di Landro, U., Laboratory investigation of Waelz slag stabilization (2015) *Process Safety and Environmental Protection*, 94 (C), pp. 227-238, DOI: 10.1016/j.psep.2014.06.015.
53. Mapelli, C., Barella, S., Gruttadauria, A., Mombelli, D., Ripamonti, D., Heat treatment cycle optimization for A707L5 copper-nickel steel, (2015) *Metallurgical Research and Technology*, 112 (4), art. no. 150011, DOI: 10.1051/metal/2015026.
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55. Barella, S., Bondi, E., Di Cecca, C., Ciuffini, A.F., Gruttadauria, A., Mapelli, C., Mombelli, D., New perspective in steelmaking activity to increase competitiveness and reduce environmental impact, (2014) *Metallurgia Italiana*, 106 (11-12), pp. 31-39.
56. Mombelli, D., Mapelli, C., Barella, S., Gruttadauria, A., Le Saout, G., Garcia-Diaz, E., The efficiency of quartz addition on electric arc furnace (EAF) carbon steel slag stability, (2014) *Journal of Hazardous Materials*, 279, pp. 586-596, DOI: 10.1016/j.jhazmat.2014.07.045.
57. Barella, S., Gruttadauria, A., Mapelli, C., Mombelli, D., Investigation of failure and damages on a continuous casting copper mould, (2014) *Engineering Failure Analysis*, 36, pp. 432-438, DOI: 10.1016/j.engfailanal.2013.11.004.

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59. Naffakh Moosavy, H., Aboutaleb, M.-R., Seyedein, S.H., Goodarzi, M., Khodabakhshi, M., Mapelli, C., Barella, S., Modern fiber laser beam welding of the newly-designed precipitation- strengthened nickel-base superalloys, (2014) *Optics and Laser Technology*, 57, pp. 12-20, DOI: 10.1016/j.optlastec.2013.09.030.
60. Guindani, A., Venturini, R., Mapelli, C., Barella, S., Gruttadauria, A., Mombelli, D., Properties of hot rolled steel strips produced by endless casting-rolling plant, (2014) *Metallurgia Italiana*, 106 (1), pp. 27-32.
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