

CURRICULUM VITAE ET STUDIORUM

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EDUCATION and CAREER

- Dec 2008-today:* Assistant Professor, Materials Science and Technology, Politecnico di Milano, Dip. Chimica, Materiali e Ingegneria Chimica "Giulio Natta".
- Sept 2005-Sept 2007:* Post-Doc. on « Development of optical devices based on self-assembled nanostructured materials obtained by electrochemical techniques», founded by CARIPLO Foundation. Location: Dip. Chimica, Materiali e Ingegneria Chimica "Giulio Natta", Politecnico di Milano.
- Mar 2002 – Mar 2005:* Ph.D. in Materials Engineering, Dip. Chimica, Materiali e Ingegneria Chimica "Giulio Natta", Politecnico di Milano, tutor: P.L. Cavallotti; co-supervisors: M.Bestetti, L.T.Romankiw, on "Magnetic thin films for perpendicular recording media by electrolytic deposition" (Magna cum Laude).
- Oct 1994 - Oct 1999:* Master degree in Chemistry (five years degree), electrochemical specialization, Università degli Studi di Milano with full marks (A+).
Master thesis on "Surface-Enhanced Raman Spectroscopy of Aminobenzoic Acids on Electrodeposited Silver Cathodes", supervisor: Prof. Franco Cariatì, Dip. Chimica Inorganica, Metallorganica ed Analitica, Università degli Studi di Milano.
- July 1994* Classical Leaving Certificate (high school) attained at Liceo Classico Suore Orsoline di San Carlo in Milan with full marks (A+).

RESEARCH FELLOWSHIPS AND INTERNSHIPS

- June 2004- Aug 2004:* Summer internship at the IBM T.J.Watson Research Center in Yorktown Heights (New York) on "e-CMP of Copper for chip interconnections"; mentor: Dr. Lubomyr Romankiw, manager: Dr. Lili Deligianni.
- Oct 2004-March 2005:* IBM fellowship on "Electrodeposition of soft magnetic ultra-thin films".
- June 2003-Oct 2003:* Summer student internship at the IBM T.J.Watson Research Center in Yorktown Heights (New York) on "e-CMP of Copper for chip interconnections"; mentor: Dr. Lubomyr Romankiw, manager: Dr. Panos Andricacos, Dr. Lili Deligianni.
- Mar 2003-Mar 2004:* IBM fellowship on "Electrodeposition of magnetic materials into porous silicon".
- Oct 2002-Feb 2003:* Student internship at EPFL, Lausanne, (CH) on 'Pulse plating of Ni-W alloys'; local supervisor: Prof. D.Landolt.

Feb 2001 - Feb 2002: Fellowship on "Electrodeposition of Gold alloys with improved properties" of MURST – Rome.

SUBJECT OF INTEREST

Very familiar with electrochemical methods for surface engineering. Interested in thin films, structure-property relation of plated films and anodization techniques.

LIST OF PRIZES

2005 **Prize of the Italian Society of Chemistry**, granted for the Ph.D. thesis.

LIST OF AWARDS TO STUDENTS working UNDER HER SUPERVISION

2011 **Prize of the Italian Society of Chemistry**, granted to Daniele Perego for his Master Thesis on "Electrodeposition of Metal-Oxide-Metal nanowire heterostructures for ReRAM applications".

2011 **Alessandro Volta Prize by the Istituto Lombardo Accademia di Scienze e Lettere**, granted to Daniele Perego for his Master Thesis on "Electrodeposition of Metal-Oxide-Metal nanowire heterostructures for ReRAM applications".

LIST OF PATENTS

Patent Application(s) (as a co-author):

1. E.Barzi, M.Bestetti, S.Franz "Synthesis of superconducting Nb-Sn", U.S. Provisional Application No. 62/190,199, file July 8, 2015. Submitted to United States Patent and Trademark Office, date of submission: 07/07/2016.
2. M.Bestetti, F.Brunella, S.Franz, "Tessuti intessuti metallici o metallizzati funzionalizzati con biossido di titanio nanostrutturato (Metallic fabric functionalised with nanoporous titanium oxide)", Italian Patent Office Stage: Internazionale. Publication date: **12/09/2006**. Code: CH.06.005.A.
3. H.Deligianni, L.Economikos, D.C.Edelstein, S.Franz, B.S.Haran, M.Krishnan, A.P.Mansson, E.G.Walton, A.C.West, "Method and compositions for electrochemical-mechanical polishing" No. 11/038,236 United States Patent and Trademark Office (**2005**), to be extended to Taiwan.

LIST OF PUBLICATIONS

Please see: publications at re.public.polimi.it

Papers:

1. D.V. Sidelev, G.A. Bleykher, M. Bestetti, V.P. Krivobokov, A. Vincenzo, S. Franz, M.F. Brunella, *A comparative study on the properties of chromium coatings deposited by magnetron sputtering with hot and cooled target*, *Vacuum* (2017), available on-line <https://doi.org/10.1016/j.vacuum.2017.03.020>
2. S.Franz, D.Perego, O.Marchese, A.Lucotti, C.Castiglioni, M.Bestetti, *Photoactive TiO2 coatings obtained by Plasma Electrolytic Oxidation in refrigerated electrolytes*, *Applied Surface Science* 385 (2016) 498-505. <http://dx.doi.org/10.1016/j.apsusc.2016.05.032>
3. Hamed Eskandarloo, Mazdak Hashempour, Antonello Vincenzo, Silvia Franz, Alireza Badiei, Massimiliano Bestetti, *High-temperature stable anatase-type TiO2 nanotube arrays: A study of the structure-activity relationship*, *Applied Catalysis B* 185 (2016) 119-132.
4. E. Barzi, M.Bestetti, F. Reginato, D. Turrioni, S.Franz, *Synthesis of superconducting Nb3Sn coatings on Nb substrates*, *Superconductor Science and Technology*, published online at <http://dx.doi.org/10.1088/0953-2048/29/1/015009> (2015).
5. S. Franz, E. Barzi, D. Turrioni, L. Glionna, M. Bestetti, *Electrochemical synthesis of Nb3Sn coatings on cu substrates*, *Materials Letters* (2015). [doi:10.1016/j.matlet.2015.09.046](https://doi.org/10.1016/j.matlet.2015.09.046);

- <http://www.sciencedirect.com/science/article/pii/S0167577X15305577>
6. S.Franz, D.Perego, O.Marchese, M.Bestetti, *Photoelectrochemical Advanced Oxidation Processes on nanostructured TiO₂ catalysts: decolourization of a textile azo-dye*, Journal of Water Chemistry and Technology, Vol. 37, No. 3, pp. 108–115 (2015).
 7. F.Zhao, S.Franz, A.Vicenzo, P.L.Cavallotti, *Nanopillar array film of cellular cobalt by wet etching of the grain boundaries*, Materials Letters, 141, 172-175 (2015).
 8. S. Brivio, D. Perego, G. Tallarida, M. Bestetti, S. Franz, and S. Spiga, "Bipolar Resistive Switching of Au/NiOx/Ni/Au Heterostructure Nanowires", Applied Physics Letters, 2013, **103**, 15, 153506 (2013).
 9. F. Zhao, S. Franz, P.L. Cavallotti, A. Vicenzo, M. Bestetti, F. Venturini, *Electrodeposition of Fe-Ga thin films from an eutectic based ionic liquid*, Electrochimica Acta, 114 878-888 (2013).
 10. D.Perego, S.Franz, M.Bestetti, L.Cattaneo, S.Brivio, G.Tallarida and S.Spiga, *Engineered fabrication of ordered arrays of Au-NiO-Au nanowires*, Nanotechnology 24 (4) 045302 (8 pp) (2013).
 11. L. Cattaneo, S. Franz, F. Albertini, P.Ranzieri, A. Vicenzo, M. Bestetti, P.L. Cavallotti, *Electrodeposition of hexagonal Co nanowires with large magnetocrystalline anisotropy*, Electrochimica Acta, 85, 57-65 (2012).
 12. S. Brivio, G. Tallarida, D. Perego, S. Franz, D. Deleruyelle, C. Muller, and S. Spiga, "Low-power resistive switching in Au/NiO/Au nanowire arrays", Applied Physics Letters, 101, 223510 (2012).
 13. Daniele Perego, Silvia Franz e Massimiliano Bestetti, *Nanotubi di carbonio. Panoramica sulle proprietà e gli impieghi di un materiale nanostrutturato di interesse per applicazioni tecnologicamente avanzate*, Rivista dell'Ordine degli Ingegneri 56 (2012).
 14. D.Perego, S.Franz, M.Bestetti, *Dal Grafene nuove prospettive per il FV*, PV Technology 4 (2011).
 15. F. Zhao, S. Franz, A. Vicenzo, M. Sansotera, W. Navarrini and P.L. Cavallotti, *Electrodeposition of Nanostructured Columnar Cobalt for Self-Lubricant Coatings*, Electrochimica Acta, 56 (26) 9644-9651 (2011).
 16. P.L. Cavallotti, L. Nobili, S. Franz, A. Vicenzo, *Fundamental aspects and applications of electrodeposited nanostructured metals*, Pure and Applied Chemistry, 83 (2) 281-294 (2010).
 17. L. Cattaneo^a, A. Vicenzo^a, S. Franz^a, M. Bestetti^a, P.L. Cavallotti^a, *Nucleation and Growth of Electrodeposited Cobalt onto Si/Cu(111) substrate*, ECS Transactions 25 (41) 135-148 (2010).
 18. P.L.Cavallotti^{*}, M. Bestetti, S.Franz, A.Vicenzo, *Nano electrodeposition for hard magnetic layers*, Transactions of the Institute of Metal Finishing, 88 (1) (2010) 28-34.
 19. M. Bestetti, D. Sacco, M.F. Brunella, S. Franz and L. Samiolo, *Photo-degradation activity of titanium dioxide sol-gel coatings on stainless steel wire meshes*, Materials Chemistry and Physics, 124 (iii-v) 1225-1231 (2010).
 20. C.Borioli, S.Franz, P.L.Cavallotti, M.Cantoni, R.Bertacco, *Influence of Magnetic Fields on autocatalytic deposition of Co-Fe thin films*, Journal of the Electrochemical Society, 157 (8) (2010) D437-D442.
 21. S.Franz, A.Marlot, P.L.Cavallotti, D.Landolt, *Pulse Plating of Ni-W Alloys from Model Electrolytes*, Transactions of the Institute of Metal Finishing 86 (2) (2008) 92-97.
 22. V.Stasi, G.Cattaneo, S. Franz, M. Bestetti, M.C.Ubaldi, D.Piccinin and S.M. Pietralunga, *Aluminium pre-patterning for highly ordered nanoporous anodized alumina*, Photonics and Nanostructures - Fundamentals and Applications 5 (2-3) (2007) 136-139.
 23. M.Bestetti, P.L.Cavallotti, S.Franz, D.Dell'Oro, D.Paleari, *Porous anodic alumina templates: synthesis and application*, Galvanotecnica e Nuove Finiture, 17 (1) (2007) 8.
 24. M.Bestetti, S.Franz, M.Cuzzolin, P.Arosio, P.L.Cavallotti, *Structure of Nanotubular Titanium Oxide Templates Prepared by Electrochemical Anodization in H₂SO₄/HF Solutions*, Thin Solid Films 515 (13) (2007) 5253-5258.
 25. C.Borioli, S.Franz, M.Bestetti, M.Cantoni, P.L.Cavallotti, *Magnetic properties of Co-Fe ultra.thin films by electroless deposition*, ECS TRansactions 3 (2006) 81.
 26. S.Franz, M.Bestetti, P.L.Cavallotti, *Co-Pt thin films for magnetic recording by ECD from acidic electrolytes*, Journal of Magnetism and Magnetic Materials 316 (2007) e173-e176.
 27. M.Bestetti, A.Da Forno, S.Franz, *Coloured decorative layers for Magnesium alloy articles*, AIFM Galvanotecnica e Nuove Finiture, 16 (5) (2006) 284-289.

28. S.Franz, M.Bestetti, P.L.Cavallotti (Politecnico di Milano), V.Sirtori and L.Lombardi (Celestina), *Electrodeposition of Cobalt Platinum alloys micromagnets*, Journal of Magnetism and Magnetic Materials 272-276 (3) May (2004) 2430-2431.
29. I.Lombardi, M.Bestetti, U.Ducati, P.L.Cavallotti, L.Magagnin, S.Franz, A.Vicenzo, C.Ducati, *Review on the applications of carbon nanotubes for surface coating manufacturing*, AIFM Galvanotecnica e Nuove Finiture, 13 (1) (2003) 10-17.
30. M.Bestetti, S.Franz, P.L.Cavallotti (Politecnico di Milano), V.Sirtori and L.Lombardi (Celestina), *Elettrodeposizione di leghe CoPt per applicazioni micromagnetiche*, Galvanotecnica e nuove finiture, 13 (6) (2003) 274-278.
31. P.L.Cavallotti, M.Bestetti and S.Franz, *Microelectrodeposition of CoPt alloys for micromagnetic applications*, Electrochimica Acta 20-22 (48) (2003) 3013-3020.
32. P.L. Cavallotti, A.Vicenzo, M.Bestetti and S.Franz, *Microelectrodeposition of Cobalt and Cobalt Alloys for Magnetic Layers*, Surface and Coating Technologies 169-170 (2003) 76-80.
33. S. Franz, M. Bestetti, M.Consonni and P.L. Cavallotti, *Electrodeposition of micromagnets of CoPtW(P) alloys.*, Microelectronic Engineering 64 (1-4) (2002) 487-494.

Proceedings:

1. M.Bestetti, A.Vicenzo, S.Franz, C.Borioli, B. Giacomel, M.Grifone, EC Minicell: a miniaturized tool for localized electrochemical measurements, Trends in Surface Technology TST2017, Milano (Italy) May 18 (2017).
2. S.Franz, D.Perego, O.Marchese, M.Bestetti, Photoelectrochemical AOPs based on Nanotubular Titanium Dioxide, Ecotechnologies for Wastewater Treatment ECOSTP2014 Verona (Italy), June 23-25, (2014) 885-889. ISBN 9788869250026 (<http://www.univr.it/main?ent=catalogoaol&id=783164&page=dettaglioPubblicazione&lang=it>).
3. M.Bestetti, S.Franz, M. F.Brunella, Carlo Borioli, Electrochemical synthesis of nanostructured titania and its applications, VIII Encontro de Engenharia de Materiais, San Paulo (Brazil), April 21-26 (2013).
4. D. Perego; S. Franz; M. Bestetti; C. Borioli, High performance supercapacitors based on thermally reduced graphene oxide. pp.664-667. In Technical Proceedings of the 2013 NSTI Nanotechnology Conference and Expo (2013) - ISBN:978-1-4822-0584-8
5. S. Spiga, S. Brivio, G. Tallarida, D. Perego, S. Franz, D. Deleruyelle, C. Muller, Resistive Switching in NiO Based Nanowire Array for Low Power RERAM", Nature Conference 2012 "Frontiers in Electronic Materials: Correlation Effects and Memristive Phenomena", Aachen (Germany), June 16-20, 242-243 (2012) ISBN: 9783527411917.
6. P.L.Cavallotti, S.Franz, A.Vicenzo, F.Zhao, *Electrokinetics and deposit nanostructure*, Second Regional Symposium on Electrochemistry: South-East Europe, held in June 6-10, Belgrade, Serbia (2010).
7. C.Borioli, S.Franz, M.Cantoni, M.Bestetti, P.L.Cavallotti, *Autocatalytic deposition of Co-Fe ultra-thin films*, Nanophen International Workshop on Nanostructured Materials in Electroplating, held in February 26- March 2, Sandanski, Bugaria (2008).
8. F.Muscolino, F.Ferrari, M.Bestetti, S.Franz, P.L.Cavallotti, S.M.Pietralunga, D. Piccinin e M. Martinelli, *Crescita di strutture a photonic band-gap in allumina anodica*, FOTONICA 2007, held in May 21-23, Mantova, Italy (2007).
9. M.Bestetti, P.L.Cavallotti, S.Franz, *Porous anodic alumina templates: synthesis and applications*, SURMAT 06, held in November 15-17, Saint Étienne, France (2006).
10. C.Borioli, S.Franz, M.Bestetti, M.Cantoni, P.L.Cavallotti, *Magnetic properties of Co-Fe ultra.thin films by electroless deposition*, 210th Meeting of The Electrochemical Society, held October 29-November 3, Cancun, Mexico (2006).
11. S.Franz, M.Bestetti, A.Surpi, S.Valizadeh, L.T.Romankiw, P.L.Cavallotti, *ECD of Co-Pt thin films for magnetic recording*, Nanophen International Workshop on Nanostructured Materials in Electroplating, held in March 25-30, Sandanski, Bugaria (2006).
12. P.L.Cavallotti, M.Bestetti, S.Franz, A.Vicenzo, *Correlation between Microhardness and Coercivity of Electrodeposited Cobalt Platinum Films*, The Electrochemical Society 206th Meeting, held October 3-8, Honolulu, Hawaii (2004).
13. S.Franz, M.Bestetti, P.L.Cavallotti, L.T.Romankiw, *Chemical and Electrochemical Deposition of NiFe thin films*, The Electrochemical Society 206th Meeting, held October 3-8,

- Honolulu, Hawaii (2004).
14. S.Franz, P.L.Cavallotti, M.Bestetti, V.Sirtori, L.Lombardi, *Electrodeposition of Co-Pt alloy micromagnets*, AESF 2003 Meeting, held June 24-26, Milwaukee, Wisconsin (2003).
 15. M.Bestetti, A.Vicenzo, F.Ziglioli, S.Franz and P.L.Cavallotti, *Electrodeposition of Brass-like Thin Films from thiourea Electrolytes*, The Electrochemical Society 202nd Meeting, held October 20-24, Salt Lake City, Utah (2002).
 16. S.Franz, M.Bestetti, M.Consonni and P.L.Cavallotti, *Electrodeposition of CoZnP and CoPtZn(P) magnetic layers*, European congress on Advanced Materials, their Processes and Applications, Materials Week 2002, held in September 30-October 2, Munich, Germany (2002).
 17. M.Bestetti, P.L.Cavallotti, S.Franz, L.Gobbato, *Electrodeposition of hard magnetic layers of CoPtW*, The Electrochemical Society 200th Meeting, held September 2-7, San Francisco, California (2001).

Abstracts (author underlined if speaker):

1. Silvia Franz, Luca Corbetta, Sapia Murgolo, Giuseppe Mascolo and Massimiliano Bestetti, Electrochemical photocatalysis on nanostructured TiO₂ wire meshes, 5th European Conference on Environmental Applications of Advanced Oxidation Processes, Prague (Czech Republic) June 25-29 (2017).
2. Silvia Franz, Luca Corbetta, Andrea Lucotti and Massimiliano Bestetti, Photoactive TiO₂ coatings for water decontamination , XII Echems Meeting...Electrochemistry in ingenious molecules, surfaces and devices, Milano Marittima (RM) June 6-9 (2017).
3. M. Bestetti, A. Vicenzo, S. Franz, C. Borioli, B. Giacomel and M. Grifone, EC Minicell: a miniaturized tool for localized electrochemical measurements, TST '17 – Trends in Surface Technology, Advanced surfaces: characterization & performances, Milan (Italy) May 18 (2017).
4. S.Franz, G. Mascolo, M.Bestetti, Electrochemical photocatalysis on supported nanoporous TiO₂: a novel advanced oxidation process for water treatment, Giornate dell'Elettrochimica Italiana 2016, Gargnano (Bs, Italy) Sept. 12 – Sept.16 (2016).
5. M. Bestetti, A. Vicenzo, S. Franz, G. Puricelli, Politecnico di Milano/I; C. Borioli, Nanomaterials.it Srl, Milano/I, Miniaturized cell for localized electrochemical measurements. Concept and examples of application. European Corrosion Congress 2014, Pisa (Italy), Sept-8 – Sept 12 (2014).
6. S. Franz, D. Perego, O. Marchese, F.Quintiero, M. Bestetti, Photoelectrochemical AOPs on TiO₂ synthesized by low-T PEO, 65th Annual Meeting of the International Society of Electrochemistry, Lausanne (Switzerland), Aug 30- Sept 5 (2014)
7. S.Franz, D.Perego, O.Marchese, M.Bestetti, Photoelectrochemical AOPs based on Nanotubular Titanium Dioxide, Ecotechnologies for Wastewater Treatment ECOSTP2014 Verona (Italy), June 23-25 (2014).
8. M.Bestetti, S.Franz and C.Borioli, Synthesis of nanoporous anodic alumina and titania and their analytical applications in chemistry and biology, XIII Sigma Aldrich Young Chemists Symposium.
9. D. Perego, S. Franz, M.Bestetti, High performance supercapacitors based on thermal reduced graphene oxide, ISEECap2013, 3rd International Symposium on Enhanced Electrochemical Capacitors, June 3rd-7th 2013, Taormina (Italy).
10. F. Zhao, S. Franz, P. L. Cavallotti, A. Vicenzo, M. Bestetti, F. Venturini, Electrodeposition of Fe-Ga thin films from ionic liquids, Interfinish 2012, November 14th-16th 2012, Milan (Italy)
11. D. Perego, S. Franz, M. Bestetti, S. Brivio, G. Tallarida, S. Spiga, Engineered fabrication of Au/NiO/Au nanowires arrays for electronic applications, Interfinish 2012, November 14th-16th 2012, Milan (Italy)
12. D. Perego, S. Franz, M. Bestetti, S. Brivio, G. Tallarida, S. Spiga, Engineered fabrication of Au/NiO/Au nanowires arrays for electronic applications, ECS 222nd Meeting, October 7th-12nd 2012, Honolulu (Hawaii).
13. S. Brivio, G. Tallarida, D. Perego, S. Franz, D. Deleruyelle, C. Muller and S. Spiga, Low power resistive switching in Au/NiO/Au nanowire heterostructures for memory applications. , e-NVM +
14. S. Spiga, G. Tallarida, C. Wiemer, M. Fanciulli, D. Perego, S. Bonelli, L. Cattaneo, S. Franz, Nanoscale resistive switching in metal/NiO/metal thin film and nanowire-heterostructures for memory applications, E-MRS 2011 Spring Meeting, May 9th-13rd, Nice (France).

15. Laura Cattaneo, Antonello Vincenzo, Silvia Franz, Maria Francesca Brunella, Massimo Fumagalli, Massimiliano Bestetti and Elena Villa, *Thermal fragmentation of gold nanowires in AAO templates*, 8th International workshop on electrodeposited nanostructures, March 17th-19th 2011, Milan (Italy)
16. D. Perego, S. Bonelli, L. Cattaneo, S. Franz, M. Bestetti, G. Tallarida, C. Wiemer, S. Spiga: *Electrodeposition of MOM nanowire heterostructures for ReRAM applications*, 8th International workshop on electrodeposited nanostructures, March 17th-19th 2011, Milan (Italy).
17. L. Cattaneo, S. Franz, F. Albertini, P. Ranzieri, A. Vincenzo, M. Bestetti, and E. Snoeck: *Electrodeposition of single-crystal Co nanowires with large magnetocrystalline anisotropy: magnetic properties and structural investigation*, 8th International workshop on electrodeposited nanostructures, March 17th-19th 2011, Milan (Italy).
18. P.L. Cavallotti, S. Franz, A. Vincenzo, F. Zhao, *Nanostructured layers by electrodeposition*, The Eight International Symposium on Electrochemical Micro & Nanosystem Technologies, 22-25 September 2010, Cannes-Mandelieu (France).
19. L. Cattaneo, S. Franz, F. Albertini, M. Fumagalli, A. Vincenzo, M. Bestetti, *Structural and Magnetic Investigation of Electrodeposited Co Nanowires into AAO Membranes*, 61st Annual Meeting of the International Society of Electrochemistry, held September 26th - October 1st, 2010, Nice (France).
20. P.L. Cavallotti, S. Franz, A. Vincenzo, F. Zhao, *Nanostructured layers by electrodeposition*, The Eight International Symposium on Electrochemical Micro & Nanosystem Technologies, held 22-25 September 2010, Cannes-Mandelieu, (France)
21. P.L. Cavallotti, S. Franz, A. Vincenzo, F. Zhao, *Electrokinetics and deposit nanostructure*, Regional Symposium on Electrochemistry, held 6-10 June 2010, Belgrad (Serbia).
22. C. Borioli, E. Bontempi, A. Zacco, P. Zanol^b, L.E. Depero, S. Franz, M. Bestetti, P.L. Cavallotti, 8th Seminar on Quantitative Microscopy and 4th Seminar of Nanoscale Calibration Standards and Methods, held 22-23 September 2008, Torino (Italy).
23. D. Piccinin, M.C. Ubaldi, V. Stasi, S.M. Pietralunga, G. Cattaneo, S. Franz, M. Bestetti, 33rd International Conference on Micro- and Nano-Engineering, held 23-26 September 2007, Copenhagen Denmark.
24. S. Franz, A. Marlot, D. Landolt, P.L. Cavallotti, *Pulse plating of Ni-W alloys*, II European Pulse Plating Seminar, held in March 9, Wien, Austria (2007).
25. D. Sacco, F. Brunella, M. Bestetti, P.L. Cavallotti, S. Franz, L. Samiolo, *Titanium dioxide sol-gel coatings on stainless steel wire cloths for pollutant photocatalytic degradation*, EUROMAT 2007, held in September 10-13, Nürnberg, Germany (2007).
26. M. Cuzzolin, S. Franz, M. Bestetti, F. Brunella, P.L. Cavallotti, L. Samiolo, Structure of nanotubular titanium oxide templates prepared by electrochemical anodization, EUROMAT 2007, held in September 10-13, Nürnberg, Germany (2007).
27. C. Borioli, S. Franz, M. Bestetti, P.L. Cavallotti, *Magnetic properties of Co-Fe ultra-thin films obtained by electroless deposition*, EUROMAT 2007, held in September 10-13, Nürnberg, Germany (2007).
28. M. Bestetti, P.L. Cavallotti, S. Franz, *Porous anodic alumina templates: synthesis and applications*, SURMAT 06, held in November 15-17, Saint Étienne, France (2006).
29. C. Borioli, S. Franz, M. Bestetti, P.L. Cavallotti, *Electroless deposition of ultra-thin Co-Fe films*, 210th Meeting of The Electrochemical Society, held October 29-November 3, Cancun, Mexico (2006).
30. S. Franz, M. Bestetti, P.L. Cavallotti, *Co-Pt thin films for magnetic recording by ECD from acidic electrolytes*, 210th Meeting of The Electrochemical Society, held October 29-November 3, Cancun, Mexico (2006).
31. S. Franz, M. Bestetti, P.L. Cavallotti, *Electrodeposited Co-Pt thin films for perpendicular recording media*, Sixth International Symposium on Electrochemical Micro & Nanosystem Technologies, held in August 22-25, Bonn, Germany (2006).
32. S. Franz, M. Bestetti, A. Surpi, S. Valizadeh, L.T. Romankiw, P.L. Cavallotti, *Perpendicular magnetic layers obtained by electrolytic techniques*, III Joint European Magnetic Symposia, held June 26-30, San Sebastian, Spain (2006).
33. S. Franz, M. Bestetti, A. Surpi, S. Valizadeh, L.T. Romankiw, P.L. Cavallotti, *ACD and ECD for magnetic recording*, Nanophen International Workshop on Nanostructured Materials in Electroplating, held March 23-30, Sandanski, Bulgaria (2006).
34. S. Franz, M. Bestetti, A. Surpi, S. Valizadeh, L.T. Romankiw, P.L. Cavallotti, *Perpendicular Magnetic Recording Media by Electrochemical techniques*, 4th International Workshop on

- Electrodeposited Nanostructures, held March 16-18, Dresden, Germany (2006).
35. L.Bertoli, S.Fontana, S.Franz, M.Bestetti, P.L.Cavallotti, *Deposition of CoPt alloys from acidic electrolytes*, International Society of Electrochemistry Congress 2005, , held September 25-30, Busan, Corea (2005).
 36. S. Franz, M. Bestetti, P.L. Cavallotti, D. Abraham, L.T. Romankiw, *Autocatalytic Deposition of Magnetic Thin Films*, EUROMAT 2005, held September 5-8, Prague, Czech Republic (2005).
 37. P.L.Cavallotti, M.Bestetti, S.Franz, A.Vicenzo, *Electrodeposition of Hard Magnetic Layers of Cobalt and Cobalt Alloys*, The Electrochemical Society 206th Meeting, held October 3-8, Honolulu, Hawaii (2004).
 38. S.Franz, M.Bestetti, P.L.Cavallotti, L.T.Romankiw, *Chemical and Electrochemical Deposition of NiFe thin films*, The Electrochemical Society 206th Meeting, held October 3-8, Honolulu, Hawaii (2004).
 39. P.L. Cavallotti, M. Bestetti, S. Franz, A. Vicenzo, *Electrodeposition of hard magnetic layers of cobalt and cobalt alloys*, 5th International Symposium on Electrochemical Micro & Nano System Technologies, held in September 29 –October 1, Tokyo, Japan (2004).
 40. Silvia Franz, Stefano Rinaldi, Massimiliano Bestetti, Pietro Luigi Cavallotti, Marco Coisson, Luca Boarino, *Silicon and Alumina mesoporous templates and their impregnation with metals*, 1st International Workshop on Interaction of Molecules with Nanostructures, held in March 23-24, Torino, Italy (2004).
 41. Massimiliano Bestetti, Silvia Franz, Pietro Luigi Cavallotti, Luca Boarino , Marco Coisson, *Impregnation of silicon and alumina nanoporous templates with ferromagnetic materials*, 2nd National Conference of Nanoscience and Nanotechnology, held February 25-27, Bologna, Italy (2004).
 42. S.Franz, M.Bestetti, P.L.Cavallotti, *Electrodeposition of CoPt alloys for micromagnetic applications*, EuroInterFinish 2003, held October 22-24, Padova, Italy (2003).
 43. S.Franz (Politecnico di Milano), A.Marlot and D.Landolt (EPFL, Lausanne), *Pulse Plating of Ni-W Alloys*, The Electrochemical Society 204th Meeting, held October 12-17, Orlando, Florida (2003).
 44. S.Franz, M.Bestetti, P.L.Cavallotti (Politecnico di Milano), V.Sirtori and L.Lombardi (Celestina), *Electrodeposition of Cobalt Platinum alloys micromagnets*, International Congress on Magnetism, held July 27-August 1, Rome, Italy (2003).
 45. P.L.Cavallotti, M.Bestetti, S.Franz (Politecnico di Milano), V.Sirtori and L.Lombardi (Celestica), *CoPt Alloys Electrodeposition for Magnetic Applications*, The Electrochemical Society 203rd Meeting, held April 27-May 2, Paris, France (2003).
 46. M.Bestetti, A.Vicenzo, F.Ziglioli, S.Franz and P.L.Cavallotti, *Electrodeposition of Brass-like Thin Films from Thiourea Electrolytes*, The Electrochemical Society 202nd Meeting, held October 20-24, Salt Lake City, Utah (2002).
 47. S.Franz, M.Bestetti, M.Consonni and P.L.Cavallotti, *Electrodeposition of CoZnP and CoPtZn(P) magnetic layers*, European congress on Advanced Materials, their Processes and Applications, Materials Week 2002, held in September 30-October 2, Munich, Germany (2002).
 48. P.L.Cavallotti, M.Bestetti, S.Franz, *Microelectrodeposition and micromagnetism*, International Society of Electrochemistry Congress 2002, held in September, Dusseldorf, Germany (2002).
 49. S.Franz, M.Bestetti, M.Consonni and P.L.Cavallotti, *Electrodeposition of micromagnets of CoPtW(P) alloys*, Poster 68-0B2, Junior Euromat 2002, held in September 2-5, Lausanne, Switzerland (2002).
 50. S.Franz, M.Bestetti, M.Consonni and P.L.Cavallotti, *Electrodeposition of CoPtZn(P) magnetic layers*, GEI 2002, Giornate dell'Elettrochimica Italiana 2002, held in June 23-28, Ferrara, Italy (2002).
 51. M.Bestetti, S.Franz and P.L. Cavallotti, *Electrodeposition of Micromagnets of CoPtW(P) alloys*, Poster P38, MAM 2002, Materials for Advanced Metallization 2002, , held in March 3-6, Vaals, The Netherlands (2002).
 52. M. Bestetti, P.L. Cavallotti, S. Franz, L.Gobbato, J.Machado da Silva and M.A.Sa' *Electrodeposition of permanent micromagnets*, east forum 2001, Electrodeposition in Electronics, held October 10-13, Ouranoupolis , Greece (2001).
 53. S.Franz, M.Bestetti, P.L.Cavallotti, G.L. Gobbato, *Electrodeposition of permanent magnets of CoPtW(P) alloy*, GEI 2001, Giornate dell'Elettrochimica Italiana 2001 , held September 20-22, Lecce, Italy (2001).

54. M.Bestetti, P.L.Cavallotti, S.Franz, L.Gobbato, *Electrodeposition of hard magnetic layers of CoPtW*, The Electrochemical Society 200th Meeting, held September 2-7, San Francisco, California (2001).
55. F.Cariati, S.Bruni, S.Franz, P.R.Mussini, *SERS of aminobenzoic acids on electrodeposited silver cathodes*, International Society of Electrochemistry Congress 2000, held 2000, Warsaw, Poland (2000).
56. F.Cariati, S.Bruni, S.Franz, P.R.Mussini, *SERS of aminobenzoic acids on electrodeposited silver cathodes*, GEI 1999, Giornate dell'Elettrochimica Italiana 1999, held 1999, Como, Italy (1999).

Supervision of PhD theses:

1. H.Arab, Synthesis and characterization of nanstructured catalysts for electrochemical photocatalysis, supervisor: S.Franz; Tutor: M.Bestetti (2016-today).
2. D.Perego, Synthesis and characterization of nanomaterials for data storage and energy storage, supervisor: S.Franz; Tutor: M.Bestetti (2011-2014).
3. C.Borioli, Autocatalytic deposition of ultra-thin soft magnetic Co-Fe films, supervisors: M.Bestetti, S.Franz; Tutor: P.L.Cavallotti (2005-2008).

Supervision of Master theses:

1. Ceren Baykal, Synthesis of Nb-Sn coatings by electrochemical deposition, supervisor: S.Franz; co-supervisor: M.Bestetti (2016).
2. Luigia Glionna, Electrochemical synthesis of Nb-Sn coatings from ionic liquids, supervisor: S.Franz; co-supervisor: E.Barzi (2015).
3. Gianmarco Pedroni, Synthesis of Titanium dioxide meshes by plasma electrolytic oxidation for advanced oxidation processes of drug contaminated wastewaters; Supervisor: Massimiliano Bestetti; Co-supervisor: S. Franz (2015).
4. Ferdinando Quintiero, Synthesis and Characterization of Photoactive Titanium Dioxide Films obtained by low-temperature PEO, Supervisor: Massimiliano Bestetti; co-supervisors: S. Franz, M. Curioni (2014).
5. Federico Reginato, Electrochemical synthesis of Nb-Sn coatings for high field accelerator magnets, supervisor: Silvia Franz; co-supervisor: Emanuela Barzi (2013).
6. Juan Giraldo, Implementation of a Prototypical reactor for electrochemical AOPs, supervisor: Silvia Franz, co-supervisor: Daniele Perego (2013).
7. Ottavia Marchese, Synthesis and Characterization of Titanium Dioxide obtained by PEO for Advanced Oxidation Processes Supervisor: Silvia Franz; Tutor: Daniele Perego (2012).
8. Anosike Fransis, Cellular growth of oriented cobalt with very strong preferred orientation, supervisor: P.L.Cavallotti; co-supervisors: S.Franz, A.Vicenzo (2009).
9. Fahimeh Amiri, Synthesis and characterization of heterojunction nanowires for ReRAM supervisor: S.Franz; co-supervisors: D.Perego, S.Spiga (2011).
10. Samuele Bonelli, Daniele Perego, Elettrodeposizione di eterogiunzioni a nanofilo metallo/ossido/metallo per memorie ReRAM avanzate, supervisor: S.Franz; co-supervisor: M.Bestetti, S.Spiga, Faculty of Materials Engineering, Politecnico di Milano (2009). **awarded by the Italian Society of Chemistry (SCI), Electrochemical Division (2011) and by Istituto Lombardo Accademia di Scienze e Lettere with Alessandro Volta Prize in (2012).**
11. Jordan Itoua, Cellular growth of oriented cobalt with very strong preferred orientation, supervisor: P.L.Cavallotti; co-supervisor: S.Franz, Faculty of Materials Engineering, Politecnico di Milano (2009).
12. F. Zhao, Synthesis of functionalized metallic coatings for water-based hydraulics; supervisor: P.L.Cavallotti; co-supervisor: S.Franz, Faculty of Materials Engineering, Politecnico di Milano (2009).
13. M.Cuzzolin, Sintesi elettrochimica di TiO₂ nanotubolare per applicazioni nella fotodegradazione di sostanze inquinanti; supervisor: Prof. M.Bestetti; co-supervisor: S.Franz (2007).
14. E.Dell'Oro, D.Paleari, Studi sulla sintesi elettrochimica dell'ossido anodico nanoporoso di alluminio, supervisor: Massimiliano Bestetti; co-supervisor: Silvia Franz (2007).
15. P.Versari, Film magnetici dolci ultrasottili per la registrazione perpendicolare; supervisor: P.L.Cavallotti; co-supervisors: S.Franz, C.Borioli, Faculty of Materials Engineering,

- Politecnico di Milano (2005).
16. F.Ferrari, F.Muscolino, Ossido Anodico di Alluminio Nanoporoso: sintesi elettrochimica e caratterizzazione ottica; supervisor: P.L.Cavallotti; co-supervisors: M.Bestetti, S.Franz, Faculty of Materials Engineering, Politecnico di Milano (2005).
 17. L. Bertoli, S.Fontana, Elettrodeposizione di leghe di Co per registrazione magnetica perpendicolare; supervisor: P.L.Cavallotti; co-supervisors: M.Bestetti, S.Franz, Faculty of Materials Engineering, Politecnico di Milano (2005).
 18. M.Consonni, Elettrodeposizione di CoPtZn per micromagneti permanenti, supervisor P.L. Cavallotti, co-supervisors M.Bestetti, S.Franz, Faculty of Materials Engineering, Politecnico di Milano (2002).

Supervision of Bachelor theses:

- ^{1.} *F.Castelli, G.Giovannelli, F.Morini, S.Robbati, A.Sereni, Synthesis and characterization of photocatalytic smiconductors, tutor: S.Franz (2016).*

FUNDINGS

June 2010-Dec 2012: Polimi principal investigator, Ricerca di nuovi materiali catalizzatori e loro integrazione in dispositivi per processi di elettrofotocatalisi eterogenea per la rimozione di inquinanti refrattari e patogeni resistenti dalle acque (TITANO), funded by Regione Lombardia.

March 2010 – March 2012: Polimi principal investigator, Advanced Metal-Oxide heterostructures for nanoscale RERAM" project (MORE), funded by Cariplo Foundation.

Jul 2002– Jul 2003: Principal investigator of the “Young Researchers Project” on Electrodeposition of Metals and Nanometric Particles for Engineering Applications, funded by Politecnico di Milano.

SCHOOLS & COURSES

February 2004: Politecnico di Milano, School on *Corrosion and Protection of metallic materials*, Milano, Italy.

May 2002: AIFM-Assogalvanica Seminar on *Chromium VI: Hard Chromium Plating and Passivation*, Milano, Italy.

April 2002: AIMAT School on *Composite Materials*, Ischia, Italy.

DIDACTICS

2015-2017 Professor of “Laboratorio tecnologico progettuale”, compulsory, II year, I semester at Materials Engineering Faculty, Politecnico di Milano, 10 CFU, n° students 2010-2011: 179.

2009-2013 Professor of “Physical Chemistry of Materials”, compulsory, II year, I semester at Materials Engineering Faculty, Politecnico di Milano, 10 CFU, n° students 2010-2011: 179.

Seminars on “Electropolishing” at AIFM (Italian Association of Metal Finishers)

2006 -2008 Teaching assistant, course title “Structure and Properties of Metals”, Tenured Professor Giuliana Coccia
Teaching assistant, course title “Metals Science”, Tenured Professor Giuliana Coccia

2005 - 2006 Teaching assistant, course title “Thermodynamics of Materials”, Tenured Professor Massimiliano Bestetti

Seminar on "Electropolishing" at AIFM (Italian Association of Metal Finishers)

Seminar on "Electropolishing" at AIM (Italian Association of Metallurgy)

May 2017 , Milano.

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