

## LIBERATO FERRARA – CURRICULUM VITAE

**Liberato Ferrara** is associate professor of Structural Analysis and Design and holds the Italian National qualification to full professor. He has been Fulbright visiting scholar at the Center for Advanced Cement Based Materials, Northwestern University, IL, USA and is visiting professor at Beijing Jiaotong University, PRC. He has been responsible of the PoliMi research group in two EU-FP7 projects (see below), and coordinated bilateral scientific cooperation projects Italy/South Korea (advanced fiber reinforced cement based materials) and Italy/India (IITMadras - self-healing of cementitious materials), funded by the Italian ministry of Foreign Affairs; Italy/Israel (with BGU-cementitious composites for blast energy dissipation), funded by the Lombardia Regional Council, and Italy/Germany (with TUD - numerical modelling of fresh concrete flow), funded by the Italian-German Athenaeum. He is involved in technology transfer, through collaborations with industrial partners (Penetron Italia, Laterlite) and has served as consultant for public bodies (Milan city council, evaluation of sustainable school building design project) and private engineering and construction companies, also in the field of large scale projects (consultant for Technical Ltd. Mose project-Venice).

He is currently chair of the American Concrete Institute (ACI) TC 544-Fiber Reinforced Concrete and co-chair of *fib* (Federation Internationale du beton) Task Group 4.3-Design with highly flowable concretes. He is member of ACI TC 237-Self Consolidating Concrete; 238-workability of concrete, 239-High performance concrete and 241-Nanotechnology of concrete; of *fib* WG 4.2-modelling of fiber reinforced concrete structures; of RILEM TC SHE-Self healing evaluation in cement based materials; DFC-Digital fabrication with cement based materials and MRP-Measuring rheological properties of cement based materials. He is Italian representative in the COST Action 15020 SARCOS- Self healing as preventive repair in concrete structures.

He has served in international scientific conference committees, as editorial consultant for Springer and reviewer for international journals and for different research foundations worldwide. Author of more than 40 peer-reviewed journal papers, 3 book chapters and more than 200 conference papers and co-editor of 1 book on sustainable cement based materials (Springer, June 2017), he has given seminar talks in about 40 universities worldwide and has served in 9 PhD defense committees in Italy and abroad.

### Funded research projects (Principal investigator) in the last ten years

#### National and international peer-reviewed projects

2018-2012: ReSHEALience (H2020 GA 760824): Rethinking coastal defence and green energy service infrastructures through enhanced durability high-performance fiber reinforced cement based materials.

2013-2016: Development of sustainable low carbon pre-cast concrete infrastructures. – EU P7 Consortium partners: Queen’s University of Belfast (coordinator), UK, Politecnico di Milano, Italy, Banagher Precast Concrete Ltd, Eire, Azichem, Italy.

2012-2014: Environmentally-friendly solutions for Concrete with Recycled and natural Components – EU FP7 Consortium partners: Università di Salerno-Italy (prof. E. Martinelli-coordinator), Universidade do Minho-Portugal (prof. J. Barros), Universidade Federal de Rio de Janeiro-Brasil (prof. R. Toledo Filho), Universidad de Buenos Aires-Argentina (prof. R. Husni) and Universidad Nacional de Tucuman-Argentina (prof. G. Etse).

2010-2012. Advanced cement based materials: from concept to structural applications (peer reviewed) (principal investigator with prof. M. di Prisco). Italy Israel cooperation (Ben Gurion University of the Negev – dr. Alva Peled) - Funded by Regional Council of Lombardia

2011-2012. Advanced fiber reinforced cementitious composites: numerical approaches to the modeling of fresh state behaviour for casting flow simulation and prediction of fiber orientation - Italy-Germany cooperation (TU Dresden – prof. V. Mechtcherine) - Italian-German Athenaeum – Progetto Vigoni.

2010-2012. Advanced fiber reinforced cementitious composites with adapted rheology for high end applications: experiments and modeling (peer reviewed) (principal investigator) - Italy-South Korea cooperation (Myongji University – prof. S.H. Kwon) (funded by Ministry of Foreign Affairs - bilateral exchanges project).

2010-2011. Numerical modelling of fresh state behaviour of cementitious suspensions: from identification of rheological properties to casting flow simulation - Young researchers grant, Politecnico di Milano.

2012-2014: self healing capacity of cementitious composites (principal investigator)

Young researchers grant, Politecnico di Milano.

Also sponsored as Italy-India cooperation (Indian Institute of Technology Madras – prof. R. Gettu) by the Ministry of Foreign Affairs - bilateral exchanges project

### Projects developed in collaboration with industry

2009-2010. Rheological behaviour of fluid cementitious suspensions for underwater injections. Consultancy project with Technital for Venice Mose project.

2012-2013: waterproofing of concrete structures by means of siloxane based composites –Azichem Ltd..

2011-2013: Effects of crystalline admixtures on the self-healing capacity of cementitious composites - Penetron Italia

2014: Internal curing of concrete with Lightweight Aggregates - Laterlite Ltd.

2015-2017: consolidation of slabs with lightweight concrete topping – Laterlite Ltd.

2016-2017: effects of crystalline admixtures on chloride penetration and reinforcement corrosion – Penetron Italia Ltd.

### **Papers in International peer reviewed journals**

1. di Prisco, M., Ferrara, L., Meftah, F., Pamin, J., de Borst, R., Mazars, J., Reynouard, J.M.: “Mixed-mode fracture in plain and reinforced concrete: some results on benchmark tests”, *International Journal of Fracture*, vol. 103/2, May 2000, pp. 127-148
2. Ferrara, L., di Prisco, M.: “Mode I fracture behavior in concrete: non-local damage modelling”, *ASCE Journal of Engineering Mechanics*, vol. 127/7, July 2001, pp. 678-692
3. Ferrara, L., Meda, A.: “Relationships between fibre distribution, workability and the mechanical properties of SFRC applied to precast roof elements”, *Materials and Structures*, vol. 39 (4), May 2006, pp. 411-420
4. Ferrara, L., Park, Y.D., Shah, S.P.: “A method for mix-design of fiber reinforced self compacting concrete”, *Cement and Concrete Research*, vol. 37, 2007, pp. 957-971
5. Ferrara, L., Park, Y.D., Shah, S.P.: “Correlation among fresh state behaviour, fiber dispersion and toughness properties of SFRCs”, *ASCE Journal of Materials in Civil Engineering*, vol. 20, n° 7, July 2008, pp. 493-501.
6. Tregger, N., Ferrara, L., Shah, S.P.: “Identifying cement rheological properties from the mini-slump-flow test”, *ACI Materials Journal*, vol. 105, n° 6, November-December 2008, pp. 558-566.
7. Tregger, N., Ferrara, L. and Shah, S.P.: “Predicting dynamic segregation resistance of self-consolidating concrete from the slump-flow test”, *Journal ASTM International*, vol. 7 n o. 1, January 2010.
8. Cremonesi, M., Ferrara, L., Frangi, A., Perego, U.: “Simulation of the flow of fresh cementitious suspensions by a Lagrangian Finite Element approach”, *Journal of Non-Newtonian Fluid Mechanics*, vol. 165, November 2010, pp. 1555-1563.
9. Ferrara, L., Ozyurt, N. and di Prisco, M.: “High mechanical performance of fiber reinforced cementitious composites: the role of “casting-flow” induced fiber orientation”, *Materials and Structures*, vol. 44, n° 1, January 2011, pp. 109-128.
10. Faifer, M., Ottoboni, R., Toscani, S., Ferrara, L.: "Non-destructive Testing of Steel Fiber Reinforced Concrete using a Magnetic Approach," *IEEE Transactions on Instrumentation and Measurement*, 2011, 60 (5), pp. 1709-1717.
11. Ferrara, L., Felicetti, R., Toniolo, G. and Zenti, C.: “Friction dissipative devices for cladding panels in precast buildings: an experimental investigation”, *European Journal of Environmental and Civil Engineering*, vol. 15 n° 9, 2011, pp. 1319-1338.
12. Tregger, N., Gregori, A., Ferrara, L. and Shah, S.P.: “Correlating dynamic segregation of SCC to the slump-flow test”, *Construction and Building Materials*, vol. 28, March 2012, pp. 499-505.
13. Ferrara, L., Faifer, M. and Toscani, S.: “A magnetic method for non destructive monitoring of fiber dispersion and orientation in Steel Fiber Reinforced Cementitious Composites – part 1: method calibration”, *Materials and Structures*, vol. 45 n° 4, April 2012, pp. 575-589.
14. Ferrara, L., Faifer, M., Muhaxheri, M. and Toscani, S.: “A magnetic method for non destructive monitoring of fiber dispersion and orientation in Steel Fiber Reinforced Cementitious Composites – part 2: correlation to tensile fracture toughness”, *Materials and Structures*, vol. 45 n° 4, April 2012, pp. 591-598.
15. Ferrara, L., Cremonesi, M., Tregger, N., Frangi, A. and Shah, S.P.: “On the identification of rheological properties of cement suspensions: rheometry, Computational Fluid Dynamics Modeling and field test measurements”, *Cement and Concrete Research*, vol 42 n° 8, August 2012, pp. 1134-1146.
16. Ferrara, L., Bamonte, P., Caverzan, A., Musa, A.M. and Sanal. I.: “A comprehensive methodology to test the performance of Steel Fibre Reinforced Self-Compacting Concrete (SFR-SCC)”, *Construction and Building Materials*, vol. 37, December 2012, pp. 406-424.
17. Faifer, M., Ferrara, L., Ottoboni, R. and Toscani, S.: “Low frequency electrical and magnetic methods for non-destructive monitoring of fiber dispersion in fiber reinforced cementitious composites: an overview”, *Sensors*, vol. 13, January 2013, pp. 1300-1318.
18. di Prisco, M., Ferrara, L. and Lamperti, M.G.L.: “Double Edge Wedge Splitting (DEWS): an indirect tension test to identify post-cracking behaviour of fibre reinforced cementitious composites”, *Materials and Structures*, vol. 46, n° 11, November 2013, pp. 1893-1918.
19. Ferrara, L., Krelani, V. and Carsana, M.: “A fracture testing based approach to assess crack healing of concrete with and without crystalline admixtures”, *Construction and Building Materials*, 68, 2014, pp. 515-531.
20. Roig-Flores, M., Moscato, S., Serna. P. and Ferrara, L.: “Self-healing capability of concrete with crystalline admixtures in different environments”, *Construction and Building Materials*, 86, 2015, pp. 1-11.
21. Ferrara, L.: “Tailoring the orientation of fibers in High Performance Fiber Reinforced Cementitious Composites:

- part 1 - experimental evidence, monitoring and prediction”, *Journal of Materials and Structures Integrity*, 9, 1/2/3, 2015, pp. 72-91.
22. Ferrara, L.: “Tailoring the orientation of fibers in High Performance Fiber Reinforced Cementitious Composites: part 2 - correlation to mechanical properties and design implications”, *Journal of Materials and Structures Integrity*, 9, 1/2/3, 2015, pp. 92-107.
23. Roussel, N., Gram, A., Cremonesi, M., Ferrara, L., Krenzer, K., Mechtcherine, V., Shyshko, S., Skocek, J., Spangenberg, J., Svec, O., Thrane, L.N. and Vasilic, K.: “Numerical simulations of concrete flow: a benchmark comparison”, *Cement and Concrete Research*, 69, January 2016, pp. 265-271.
24. Borg, R.P., Baldacchino, O. and Ferrara, L.: “Early age performance and mechanical characteristic of PET Fibre Reinforced Concrete”, *Construction and Building Materials*, 108, April 2016, pp. 29-47.
25. Ferrara, L.: “Citius, altius, fortius- faster, higher, tougher: pushing ahead the boundaries of structural concrete through fiber reinforced cementitious composites with adapted rheology”, *Journal of Sustainable Cement Based Materials*, 5 (3), April 2016, pp. 135-156.
26. García-Taengua, E., Sonebi, M., Crossett, P., Taylor, S., Deegan, P., Ferrara, L., Pattarini, A.: “Performance of sustainable SCC mixes with mineral additions for use in precast concrete industry”, *Journal of Sustainable Cement Based Materials*, 5 (3), April 2016, pp. 157-175.
27. Ferrara, L., Caverzan, A. and Peled, A.: “Collapsible” lightweight aggregate concrete - part I: material concept and preliminary characterization under static loadings”, *Materials and Structures*, 49 (5), May 2016, pp. 1733-1745.
28. Ferrara, L., Caverzan, A., Nahum, L. and Peled, A.: “Collapsible” lightweight aggregate concrete - Part II: characterization under static and dynamic loadings”, *Materials and Structures*, 49 (5), May 2016, pp. 1747-1760.
29. Roig Flores, M., Pirritano, F., Serna Ros, P. and Ferrara, L.: “Effect of crystalline admixtures on the self-healing capability of early-age concrete studied by means of permeability and crack closing tests”, *Construction and Building Materials*, 114, July 2016, pp. 447-457.
30. Ferrara, L., Krelani, V. and Moretti, F.: “On the use of crystalline admixtures in cement based construction materials: from porosity reducers to promoters of self healing”, *Smart Materials and Structures*, 25 (2016) 084002
31. De Nardi, C., Bullo, S., Cecchi, A. and Ferrara, L.: “Self-healing capacity of advanced lime mortars”, *Advances in Materials and Processing Technologies*, 2016. 10.1080/2374068X.2016.1191896, vol. 2, 2016.
32. Ferrara, L., Krelani, V. and Moretti, F.: “Autogenous healing on the recovery of mechanical performance of High Performance Fibre Reinforced Cementitious Composites (HPFRCCs): part 2 – correlation between healing of mechanical performance and crack sealing”, *Cement and Concrete Composites*, 73, October 2016, pp. 299-315.
33. Baril, M.A., Sorelli, L., Rethore, J., Baby, F., Toutlemonde, F., Ferrara, L., Bernardi, S., Fafard, M.: “Effect of Casting Flow Defects on the Crack Propagation in UHPFRC Thin Slabs by Means of Stereovision Digital Image Correlation”, *Construction and Building Materials*, 129, December 2016, pp. 182-192.
34. Ferrara, L., Cremonesi, M., Faifer, M., Toscani, S., Sorelli, L., Baril, M.A., Réthoré, J., Baby, F., Toutlemonde, F. and Bernardi, S.: “Structural elements made with highly flowable UHPFRC: correlating Computational Fluid Dynamics (CFD) predictions and non-destructive survey of fiber dispersion with failure modes” *Engineering Structures*, 133, February 2017, pp. 151-171.
35. Dal Lago, B., Muhaxheri, M. and Ferrara, L.: “Non-linear analysis of an innovative precast concrete wall”, *Engineering Structures*, 137, April 2017, pp. 204-222.
36. Caggiano, A., Krelani, V., Ferrara, L. and Etse, G.: “A zero-thickness interface formulation for modeling the self-healing effects on the recovery of mechanical properties of concrete” *Computers and Structures*, 186, July 2017, pp. 22-37.
37. De Nardi, C., Bullo, S., Ferrara, L., Ronchin, L. and Vavasori, A.: “Effectiveness of crystalline admixtures and lime/cement microcapsules in engineered self-healing capacity of lime mortars”, *Materials and Structures*, 50 (4), August 2017, pp. 191.1-191.12
38. De Nardi, C., Cecchi, A., Ferrara, L., Benedetti, A. and Cristofori, D.: “Effect of age and level of damage on the autogenous healing of lime mortars”, *Composites-Part B: Engineering*, September 2017, 124, pp. 144-157.
39. Ferrara, L., Krelani, V., Moretti, F., Roig Flores, M. and Serna Ros, P.: “Effects of autogenous healing on the recovery of mechanical performance of High Performance Fibre Reinforced Cementitious Composites (HPFRCCs): part 1”, *Cement and Concrete Composites*, October 2017, 83, pp. 76-100.
40. Dal Lago, B., Taylor, S.E., Deegan, P., Ferrara, L., Sonebi, M., Crosset, P. and Pattarini, A.: “Full-scale testing and numerical analysis of a precast fibre reinforced self-compacting concrete slab pre-stressed with basalt fibre reinforced polymer bars”, *Composites-Part B: Engineering*, November 2017, 128, pp. 120-133.
41. Cuenca, E.A. and Ferrara, L.: “Self-healing capability of Fiber Reinforced Concretes. State of the art and perspectives”, *Journal of the Korean Society of Civil Engineers*, 21(7), November 2017, pp. 2777-2789.
42. di Luzio, G., Ferrara, L. and Krelani, V.: “Numerical modeling of mechanical regain due to self-healing in cement based composites”, *Cement and Concrete Composites*, 86, February 2018, pp. 190-205.
43. Ferrara, L., Van Mullem, T., Alonso, M.C., Antonaci, P., Borg, R.P., Cuenca, E., Jefferson, A., Ng, P.L., Peled, A., Roig, M., Sanchez, M., Schroefl, C., Serna, P., Snoeck D., Tulliani, J.M. and De Belie, N.: “Experimental characterization of the self-healing capacity of cement based materials and its effects on the material performance: a state of the art report by COST Action SARCOS WG2”, *Construction and Building Materials*, 167, 10 April 2018, pp. 115-142.
44. Borg, R.P., Cuenca, E., Gastaldo Brac, E.M. and Ferrara, L.: “Crack sealing capacity in chloride rich environments

of mortars containing different cement substitutes and crystalline admixtures”, accepted for publication to Journal of Sustainable Cement Based Materials, November 1, 2017, available online December 7, 2017.

DOI: 10.1080/21650373.2017.1411297

45. Jefferson, T., Javierre, E., Lee Freeman, B., Zaoui, A., Koenders, E. and Ferrara, L.: “Research progress on numerical models for self-healing cementitious materials”, submitted for publication to Advanced Materials and Interfaces, October 22, 2017, submitted with revisions January 23, 2018, accepted.

46. De Belie, N., Gruyaert, E., Al-Tabbaa, A., Antonaci, P., Baera, C., Bajare, D., Darquennes, A., Davies, R., Ferrara, L., Jefferson, T., Litina, C., Miljevic, B., Otlewska, A., Ranogajec, J., Roig-Flores, M., Pain, K., Lukowski, P., Serna, P. Tulliani, J.M., Vucetic, S., Wang, J., Jonkers, H.M.: “A review of self-healing concrete for damage management of structures”, accepted for publication in Advanced Materials and Interfaces, March, 19, 2018.

47. Dal Lago, B. and Ferrara, L.: “On the diaphragm action of dry-assembled precast roof decks”, submitted for publication to Engineering Structures, October 10, 2017.

48. Cuenca, E., Tejedor, A. and Ferrara, L.: “A methodology to assess crack sealing effectiveness of crystalline admixtures under repeated cracking-healing cycles”, submitted for publication to Construction and Building Materials, January, 3, 2018.

49. Ferrara, L., Deegan, P., Pattarini, A., Sonebi, M. and Taylor, S.E.: “Recycling ceramic waste powder: effects of ceramic fineness on fresh and hardened properties of cement pastes/mortars formulated from SCC mixes”, submitted to Journal of Sustainable Cement Based Materials, January 22, 2018.

50. Faifer, M., Lei, T., Ferrara, L., Ottoboni, R. and Toscani, S.: “A cost-efficient method to assess the fiber content and orientation in SFRC”, submitted for publication to Measurement, April 5, 2018.

51. Sanchez, M., Faria, P., Ferrara, L., Horszczaruk, E., Jonkers, H.M., Kwiecien, A., Mosa, J., Peled, A., Pereira, A.S., Snoeck, D., Stefanidou, M. and Stryszewska, T.: “External treatments for the preventive repair of existing constructions: COST Action CA15202 framework”, submitted for publication to Construction and Building Materials, April 25, 2018.

#### **Papers in Proceedings of international conferences**

1. di Prisco, M., Ferrara, L.: “On the steel-concrete interface role in dowel action: some experimental and numerical results”, Proc. of the 1st Int. Conference on Damage and Failure of Interfaces, Vienna, 22-24 September 1997, H.P. Rossmanith ed., A.A. Balkema, Rotterdam, 1997, pp. 419-428

2. di Prisco, M., Ferrara, L.: “On the evaluation of mode II fracture energy in high strength concrete”, Proc. of the EURO-C 1998 Conference on Computational Modelling of Concrete Structures, Badgastein, Austria, 31 March-3 April, 1998, N. Bicanic et al. Eds., Balkema, Rotterdam, 1998, pp. 409-418

3. Ferrara, L.: “Numerical simulation of mixed-mode fracture in concrete via a non-local damage model”, Proc. of the 2nd Int. PhD Symposium in Civil Engineering, Budapest, 26-28 August 1998, G.L. Balazs ed., the Publishing Company of the Technical University of Budapest, Budapest, 1998, pp. 215-222

4. di Prisco, M., Ferrara, L.: “A tool to investigate steel-concrete interface in shear: the dowel disk test”, Proc. of the 13th ASCE Engineering Mechanics Division Conference, Baltimore, June 13-16 1999 (CD Rom)

5. Ferrara, L., di Prisco, M.: “Mode I fracture of concrete: a non-local damage approach”, Proc. EM2000, 14th ASCE Engineering Mechanics Conference, Austin (TX), USA, 21-24 May 2000 (CD Rom)

6. Failla, C., Toniolo, G., Ferrara, L.: “Design criteria for structural use of fibre-reinforced concrete in prestressed precast roof elements”, Proc. BEFIB 2000, 5th International RILEM Symposium on Fibre Reinforced Concrete, Lyon, France, 13-15 September 2000, P. Rossi and G. Chanvillard eds., pp. 253-262

7. Ferrara, L., Gettu, R.: “Non-local damage analysis of three-point bending tests on SFRC notched beams”, Proc. BEFIB 2000, 5th International RILEM Symposium on Fibre Reinforced Concrete, Lyon, France, 13-15 September 2000, P. Rossi and G. Chanvillard eds., pp. 357-368

8. Ferrara, L. and Gettu, R.: “Size effect in splitting tests on plain and fiber reinforced concrete: a non-local damage analysis”, Proc. FraMCoS4, 4th International Conference on Fracture Mechanics of Concrete and Concrete Structures, Cachan, France, 28 May-1 June 2001, R. de Borst et al. eds., Balkema, Rotterdam, pp. 677-694

9. di Prisco, M. and Ferrara L.: “HPFRC pre-stressed thin-web elements: some results on shear resistance”, Proc. FraMCoS4, International Conference on Fracture Mechanics of Concrete and Concrete Structures, Cachan, France, 28 May-1 June 2001, R. de Borst et al. eds., Balkema, Rotterdam, pp.895-902

10. Ferrara, L. and Toniolo, G.: “Continuing statistical control of concrete production”, BIBM 2002 International Conference, Istanbul, Turkey, 1-4 May 2002 (proceedings on CD-ROM)

11. Failla, C., Toniolo, G. and Ferrara, L.: “Structural design of prestressed precast roof elements made with steel fibre reinforced concrete”, BIBM 2002 International Conference, Istanbul, Turkey, 1-4 May 2002 (proceedings on CD-ROM)

12. Ferrara, L. and di Prisco M.: “A non-local approach with evolutionary internal length for the analysis of mode I fracture processes in concrete”, EM2002, 15th ASCE Engineering Mechanics Conference, New York (NY), USA, 2-5 June 2002 (proceedings on CD-ROM)

13. Biondini, F., Ferrara, L., Toniolo, G., Negro, P.: "Results of pseudodynamic test on a prototype of precast r/c frame", Proceedings ICACS 2003, September 2003, China, Y. Yuan, S.P. Shah and H. Lü eds., Rilem Publications, pp.

14. Ferrara, L.: "On the use of viscosity enhancing admixtures to improve the homogeneity of fibre distribution in fibre reinforced concretes", Proceedings BMC-7, Brittle Matrix Composites, Warsaw, Poland, 13-15 October 2003, A. Brandt et al. eds., Woodhead Pub. Ltd. (Cambridge) and Zurek Research Scientific Institute (Warsaw), pp. 287-300
15. Ferrara, L., Felicetti R. : "Non-local damage modeling of high performance concrete exposed to high temperature", Proceedings FraMCoS-5, 5th International Conference on Fracture Mechanics of Concrete and Concrete Structures, Vail, (CO), USA, 12-16 April 2004, V.C. Li et al. eds., pp. 669-676
16. Ferrara, L., Colombo, A., Negro, P., Toniolo, G.: "Precast vs. cast-in-situ reinforced concrete industrial buildings under earthquake loading: an assessment via pseudodynamic tests", Proceedings of the 13th World Conference on Earthquake Engineering, Vancouver, B.C, Canada, 1-6- August 2004 (proceedings on CD-ROM)
17. Ferrara, L., Meda, A., Lamperti, T. and Pasini, F.: "Connecting fibre distribution, workability and mechanical properties of SFRC: an industrial application to precast elements", Proceedings of BEFIB 2004, 6th International RILEM Symposium on Fibre Reinforced Concretes, M. di Prisco et al. eds., Varenna, Italy, 20-22 September 2004, pp. 495-506
18. Ferrara, L., Fratesi, R., Signorini, S. and Sonzogni, F.: "Durability of steel-fibre reinforced concrete precast elements: experiments and proposal of design recommendations" Proceedings of BEFIB 2004, 6th International RILEM Symposium on Fibre Reinforced Concretes, M. di Prisco et al. eds., Varenna, Italy, 20-22 September 2004, pp. 567-576
19. di Prisco, M., Ferrara, L., Colombo, M., Mauri, M.: "On the identification of SFRC constitutive law in uniaxial tension" Proceedings of BEFIB 2004, 6th International RILEM Symposium on Fibre Reinforced Concretes, M. di Prisco et al. eds., Varenna, Italy, 20-22 September 2004, pp. 827-836
20. Ferrara, L.: "Non-local damage modelling of splitting tensile tests in plain concrete", Proceedings of "R+D+i Workshop on Technology of Concrete Structures" – Honor to dr. Ravindra Gettu, Barcelona, Spain, 5 October 2004, pp. 191-198
21. Ferrara, L.: "Quality control of plant produced SCC for precast prestressed roof elements", Proceedings of SCC2005 Conference, Chicago, October-November 2005.
22. Ferrara, L., Mola, E., Negro, P., Toniolo, G.: "Cyclic test on a full scale prototype of r/c precast one storey industrial building", Proceedings of FIB2006 International Conference (CD Rom)
23. Ferrara, L., Mola, E., Negro, P.: "Pseudodynamic testing of full scale prototypes of r/c precast single storey industrial buildings", Proceedings of 13th ECEE Conference, Geneva, 3-8 September 2006, (CD Rom)
24. Ferrara, L., Mola, E., Negro, P.: "Pseudodynamic testing on full scale precast r/c one story buildings", Proceedings of CONSEC07-5th International Conference on Concrete under Severe Conditions: Environment and Loading, F. Toutlemonde et al. Eds., Tours (France), June 3-7, 2007, LCPC Press, pp. 1525-1536.
25. Ferrara, L., Park, Y.D. and Shah, S.P.: "Toughness properties and fiber dispersion in vibrated and self consolidating fiber reinforced concrete.", Proceedings of FraMCoS6-6th International Conference on Fracture Mechanics of Concrete Structures, A. Carpinteri et al., eds., Taylor and Francis Pubs. Catania (Italy), June 17-22 2007, pp. 1341-1349
26. Ferrara, L., Mola, E., Negro, P.: "Design of earthquake resistant precast structures: lessons derived from a co-normative research project", Proceedings of CSD07, International Conference on Conceptual Approach to Structural Design, Venice,
27. Ferrara, L., Dozio, D. and di Prisco, M.: "On the connections between fresh state behavior, fiber dispersion and toughness properties of steel fiber reinforced concrete", Proceedings of the 5th International RILEM Workshop on High Performance Fiber Reinforced Cement Composites, HPRFCC5, A. Naaman and H.W. Reinhardt eds., Mainz (Germany), July 13-15 2007, RILEM Pubs, PRO 53, pp. 249-258.
28. Shah, S.P., Ferron, R.P., Ferrara, L., Tregger, N and Kwon, S.H.: "Research on SCC: some emerging themes", invited paper in Proceedings of SCC2007, 5th International Rilem Conference on Self Compacting/self Consolidating Concrete, Ghent, Belgium, 3-7 September 2007, G. De Schutter and V. Boel eds., RILEM Pubs, PRO54, pp. 3-14.
29. Tregger, N, Ferrara, L., Shah, S.P.: "Empirical relationships between viscosity and flow-time measurements from minislump tests for cement pastes formulated from SCC", Proceedings of SCC2007, 5th International Rilem Conference on Self Compacting/self Consolidating Concrete, Ghent, Belgium, 3-7 September 2007, G. De Schutter and V. Boel eds., RILEM Pubs., PRO54, pp. 273-278.
30. Ferrara, L., Mola, E., Negro, P., Toniolo, G.: "Seismic Behavior of R/C Precast Frame Buildings: Design, Scope and Lessons of a State-of-Art Experimental Investigation", Proceedings of 2AESE, 2nd International Conference on Advances in Experimental Structural Engineering, Shanghai, 4-6 December 2007, X. Lu et al. eds, pp. 270-284.
31. Ferrara, L., Colombo, M., di Prisco, M., Zecca, C.: "Sandwich panels with glass fiber reinforced surfaces for affordable housing", Proceedings of CCC2008- Challenges for Civil Construction, Porto, 16-18 April 2008, Torres Marques et al. eds. CD-ROM (ISBN 9789727521005 - extended abstract book pag 208).
32. Ferrara, L., Toniolo, G.: "Design approach for diaphragm action of roof decks in reprecast concrete structure building under earthquake", Proceedings International fib Symposium 2008, Amsterdam, 19-22 May 2008, J. C. Walraven and D. Stoelhorst eds., CD-ROM file CH143.pdf, pp.963-968 (abstract on Book of abstracts at page 201).
33. Shah, S.P. and Ferrara, L.: "Self consolidating fiber reinforced concrete", Proceedings of Befib 2008, 7th International RILEM Symposium on Fiber Reinforced Concrete, R. Gettu ed., Chennai, India, 17-19 September 2008, pp. 641-660.

34. Ferrara, L., di Prisco, M., Khurana, R.S.: "Tailoring optimum performance for structural use of self consolidating SFRC", Proceedings of Befib 2008, 7th International RILEM Symposium on Fiber Reinforced Concrete, R. Gettu ed., Chennai, India, 17-19 September 2008, pp. 739-750.
35. Felicetti, R., Ferrara L.: "The effect of steel fibre on concrete conductivity and its connection to on-site material assessment", Proceedings of Befib 2008, 7th International RILEM Symposium on Fiber Reinforced Concrete, R. Gettu ed., Chennai, India, 17-19 September 2008, pp. 525-536.
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124. Ferrara, L. and Pattarini, A.: "Siloxanes in concrete: from manual application of water-proofing treatments to mix-design addition for concrete hydrophobicity", in M. Colombo and M. di Prisco, eds., Proceedings CONSEC 2016, 8th INTERNATIONAL CONFERENCE ON CONCRETE UNDER SEVERE CONDITIONS-ENVIRONMENT & LOADING, Lecco, Italy, 12-14 September 2016, pp. 263-268, ISBN 9783038356219.
125. Di Luzio, G., Krelani, V. and Ferrara, L.: "Numerical simulation of self-healing process and its application", in M. Colombo and M. di Prisco, eds., Proceedings o CONSEC 2016, 8th INTERNATIONAL CONFERENCE ON CONCRETE UNDER SEVERE CONDITIONS-ENVIRONMENT & LOADING, Lecco, Italy, 12-14 September 2016, supplementary papers volume, pp. 38-45, ISBN 9788899916015.

126. Ferrara L., Faifer M., Sorelli, L., Baril, M.A., Rhetoré, J., Baby F., Toutlemonde, F. and Bernardi, S.: "Flow induced alignment of fibres in HPFRCC slabs: non-destructive magnetic survey and correlation with failure modes", in Banthia, N. et al., eds., FRC: The modern landscape. Proceedings of BEFIB 2016, 9th Rilem International Symposium on Fiber Reinforced Concrete, Vancouver, Canada, 19-21 September 2016, pp. 7-16. Rilem Pubs, PRO 116. ISBN 978-2-35158-186.5
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128. Ferrara, L., Caggiano, A., di Luzio, G., Etse, G., Gettu, R., Krelani, V., Ferreira, S.R., Roig Flores, M., Serna Ros, P. and Toledo Filho, R.D.: "FIVE YEARS OF INTERNATIONAL COLLABORATIVE RESEARCH ON SELF-HEALING CAPACITY OF CEMENTITIOUS COMPOSITES", Proceedings fib International Symposium, Cape Town, November 21-23, 2016.
129. L. Ferrara: "Research on self-healing cement based materials at Politecnico di Milano: an on-going "Iustrum" long experience", Proceedings HealCon conference, Delft, The Netherlands, 28-29 November 2016.
130. De Nardi, C., Cecchi, A. and Ferrara, L.: "New materials and additives for engineering self-healing capacity of mortars", Proceedings HealCon conference, Delft, The Netherlands, 28-29 November 2016.
131. Ferrara, L.: "An overview on the research on self-healing concrete at Politecnico di Milano", Proceedings ASCMES 2017 conference, Sharjah, United Arab Emirates, April 18-20, 2017.
132. De Nardi, C., Cecchi, A. and Ferrara, L.: "The influence of self-healing capacity of lime mortars on the behavior of brick-mortar masonry subassemblies", Proceedings MURICO-5, Bologna, Italy, June 28-30, 2017.
133. Cuenca, E. and Ferrara, L.: "Effects of crystalline admixtures on the repeatability of self-healing in fiber reinforced concrete", in R. Gettu et al., eds. ICACMS-17, Chennai, India, 3-8 September 2017.
134. Sanchez, M., Al-Tabbaa, A., de Belie, N., Ferrara, L. and Jefferson, T.: "Self-healing approaches for the preventive repair", in Proceedings 2nd International RILEM/COST Conference on Early Age Cracking and Serviceability in Cement-based Materials and Structures - EAC2 12-14 September 2017, ULB-VUB, Brussels, Belgium, RILEM Pubs, pp. 813-818.
135. Mousa, M., Cuenca, E., Ferrara, L., Roy, N. and Tagnit-Hamou, A.: "Tensile characterization of a "eco-friendly" UHPFRC with waste glass powder and sand", Proceedings SHCC4, Dresden, 20-22 September 2017.
136. Cuenca, E., Tejedor, A. and Ferrara, L.: Repeatability of the self-healing capacity in fibre reinforced concrete with crystalline admixtures (in Spanish). Proceedings HAC 2018, Valencia, March 2018.
137. Cuenca, E., Cislighi, G., Puricelli, M. and Ferrara, L.: "Influence of self-healing stimulated via crystalline admixtures on chloride penetration", submitted for presentation to DSCS2018, Moscow, June 7-10, 2018.
138. Ferrara, L., Cuenca E., Tejedor, A. and Gastaldo Brac, E.M.: "Performance of concrete with and without crystalline admixtures under repeated cracking/healing cycles", submitted for presentation to ICCRRR2018, Cape Town, November 19-21, 2018.

### Papers in Proceedings of National Conferences

1. di Prisco, M., Felicetti, R., Ferrara, L.: "Elemento monocellulare per coperture di grande luce: un'indagine teorico-sperimentale", Atti Convegno 12° CTE, Padova 1998, pp. 525-534
2. Felicetti, R., Ferrara, L., Toniolo, G.: "Studio teorico-sperimentale di voltina a profilo aperto con lastra di piccolo spessore", Atti Convegno 12° CTE, Padova 1998, pp. 555-564
3. Ferrara, L., Toniolo, G.: "Controllo statistico continuativo del calcestruzzo: affidabilità e coefficienti di sicurezza", Atti 13° Convegno CTE, Pisa 2000, pp. 325-340
4. Ferrara, L., Failla, C., Signorini, S., Sonzogni, F.: "Influenza degli additivi modificatori di viscosità sulla distribuzione delle fibre nei calcestruzzi fibrerforzati", Atti 14° Convegno CTE, Mantova 2002, pp. 197-210
5. Biondini, F., Ferrara, L., Negro, P., Toniolo, G.: "Risultati di prova pseudo-dinamica su prototipo di telaio prefabbricato in c.a.", Atti 14° Convegno CTE, Mantova 2002, pp. 535-545
6. Ferrara, L., Colombo, A., Negro, P., Toniolo, G.: "Comportamento sismico di edifici industriali in cemento armato prefabbricati e gettati in opera", Atti XI Convegno ANIDIS, Genova, 26-28 gennaio 2004, (su CD-Rom)
7. Colombo, A., Negro, P., Ferrara, L., Toniolo, G.: "Sul comportamento sismico delle strutture prefabbricate", Atti XI Convegno ANIDIS, Genova, 26-28 gennaio 2004, (su CD-Rom)
8. Ferrara, L., Toniolo, G., Colombo, A., Negro, P.: "Prove pseudo-dinamiche su prototipi di telai in calcestruzzo armato prefabbricati e gettati in opera", Atti Giornate AICAP, Verona 26-29 maggio 2004, pp. 397-405
9. Ferrara, L., Meda, A., Lamperti, T., Sonzogni, F.: "Distribuzione delle fibre, lavorabilità e proprietà meccaniche di SFRC: uno studio applicato alla produzione continuativa di elementi prefabbricati per coperture", Atti 15° Convegno CTE, Bari 2004, pp. 395-404
10. Ferrara, L., Fratesi, R., Signorini, S., Sonzogni, F.: "Durabilità delle strutture prefabbricate in calcestruzzo rinforzato con fibre di acciaio: indagine sperimentale e proposta di raccomandazioni progettuali", Atti 15° Convegno

CTE, Bari 2004, pp. 415-422

11. Ferrara, L., Toniolo, G., Tsionis, G.: "Sulla azione diaframma dei sistemi di copertura in edifici industriali prefabbricati in calcestruzzo armato", Atti 15° Convegno CTE, Bari 2004, pp.613-628
12. di Luzio, G., Ferrara, L.: "Analisi del comportamento a taglio di elementi in c.a. prefabbricati in parete sottile", Atti 15° Convegno CTE, Bari 2004, pp. 95-102
13. Ferrara, L., Mola, E., Negro, P.: "Prove pseudo-dinamiche e cicliche su modelli in scala reale di edifici industriali monopiano prefabbricati", Atti 16° Convegno CTE, Parma 2006, pp. 25-40
14. Ferrara, L., Mola, E., Negro, P.: "Indagine sperimentale sul comportamento sismico di edifici monopiano prefabbricati in c.a.", Atti del 14° Convegno ANIDIS, Pisa 14-16 giugno 2007 (CD-Rom articolo 283, 12 pp.).
15. Ferrara, L., Mola, E., Negro, P.: "Validazione sperimentale dell'approccio EC8 per la progettazione sismica di edifici prefabbricati monopiano in calcestruzzo armato", Atti del 24° Congresso AICAP, Salerno, Ottobre 2007, pp. 151-160.
16. Ferrara, L., Shah, S.P.: "Calcestruzzo autocompattante fibrorinforzato: ricerche e prospettive", Atti 17° Congresso C.T.E., Roma 2008, pp. 557-570.
17. di Prisco, M., Ferrara, L., Lamperti, M.G.L., Nusiner, E., Scola, M.: "Analisi sperimentale di connessioni prefabbricate bullonate soggette a flessione e taglio", Atti 17° Congresso C.T.E., Roma 2008, pp. 613-622.
18. Ferrara, L., di Prisco, M. "Self Consolidating High Performance SFRC: from material concept towards structural applications", Proceedings of the ACI Italy chapter workshop "Le nuove frontiere del calcestruzzo strutturale", Salerno, 22-23 Aprile 2010.
19. di Prisco, M., Ferrara, L., Lamperti, M.G.L., Lapolla, S.: "Identificazione del comportamento post-fessurativo di materiali cementizi fibrorinforzati ad alte prestazioni: il double-edge wedge splitting test", Atti 18° Congresso CTE, Brescia 2010, pp. 227-238.
20. Ferrara, L., Cremonesi, M., Frangi, A.: "Sul comportamento del calcestruzzo allo stato fresco: dalla identificazione delle proprietà reologiche alla simulazione dei procedimenti di getto", Atti 18° Congresso CTE, Brescia 2010, pp. 519-528.
21. Ferrara, L., Felicetti, R., Toniolo, G., Zenti, C.: "Dispositivi dissipatori ad attrito per pannelli di tamponamento in edifici prefabbricati: una indagine sperimentale", Atti 18° Congresso CTE, Brescia 2010, pp. 461-469.
22. Ferrara, L., Faifer, M., Muhaxheri, M., Toscani, S., Ottoboni, R.: "Sull'impiego di materiali cementizi fibrorinforzati ad alte prestazioni: dall'orientamento delle fibre all'ortotropia del comportamento meccanico" Atti Giornate Aicap 2011, Padova, 19-21 maggio 2011, pp. 513-520.
23. Ferrara, L., Cremonesi, M., Frangi, A.: "Computational fluid dynamics modelling of the concrete fresh state behaviour: from identification of rheological properties to casting flow simulation", in G. Moriconi et al., eds. 2nd ACI Italy chapter workshop "The new boundaries of structural concrete", Ancona, September 15,16, 2011, pp. 185-194.
24. di Prisco, M., Ferrara, L., Lamperti, M.G.L., Lapolla, S., Magri, A. and Zani, G.: "Soluzioni sostenibili per elementi di copertura: un'opportunità offerta dai compositi cementizi fibrorinforzati", Atti della Giornata di Studio CNR a 5 anni dalla pubblicazione dalla CNR-DT 204, Roma, 4 febbraio 2011, IMREADY, pp. 53-66.
25. Ferrara, L., Caverzan, A., Manni G.: "Collapsible concrete: Un calcestruzzo ad alte prestazioni per la protezione di strutture da urti e impatti, Atti 19° Congresso CTE, Bologna, 8-10 Novembre 2012, pp. 247-260.
26. Ferrara, L., Bamonte, P., Krelani, V., Pessina, I. e Galstaldo Brac, E. "Una metodologia sperimentale per valutare la capacità di autoriparazione di calcestruzzi con additivi aerocristallizzanti", Atti 19° Congresso CTE, Bologna, 8-10 Novembre 2012, pp. 197-205.
27. Ferrara, L., and Krelani, V.: "Self healing capacity of concrete: a mechanical approach", in L. Coppola et al., eds., 3rd ACI Italy chapter workshop "The new boundaries of structural concrete", Bergamo, October 3-4, 2013, pp. 77-88.
28. di Prisco, M., Beltrami, C., Bonalumi, P., Cadoni, E., Caverzan, A., Colombo, M., Ferrara, L. and Martinelli, P.: "Materiali cementizi ad alte prestazioni per mitigare il rischio di azioni eccezionali nei tunnel", Atti Giornate AICAP 2014, Bergamo, 22-24 maggio 2014.
29. Muhaxheri, M., Spini A., Ferrara, L., Lamperti, M.G.L. and di Prisco, M.: "Rinforzo strutturale di architravi mediante compositi cementizi fibrorinforzati ad elevate prestazioni", Atti 20° Congresso CTE, Milano, 6-8 Novembre 2014, pp. 115-124.
30. Ferrara, L., Krelani, V., Ferreira, S.R., Toledo Filho, R.D., and Silva, F.: "Effetto delle fibre naturali sulle capacità di autoriparazione di compositi cementizi fibrorinforzati", Atti 20° Congresso CTE, Milano, 6-8 Novembre 2014, pp. 285-292.
31. Ferrara, L., Krelani, V., Geminiani, M., Gorleza, R., Serna Ros, P., Roig Flores, M. and Sanchez Arevalo, G.: "Capacità di autoriparazione dei compositi cementizi fibrorinforzati ad elevate prestazioni", Atti 20° Congresso CTE, Milano, 6-8 Novembre 2014, pp. 293-302.
32. Martinelli, E., Barros, J.A.O., Etse, G., Ferrara, L., Folino, P.C., Koenders, E.A.B. and Toledo Filho, R.D.: "Il progetto EnCoRe: una iniziativa transnazionale per promuovere in concetto di sostenibilità del calcestruzzo e dei materiali cementizi", Atti 20° Congresso CTE, Milano, 6-8 Novembre 2014, pp. 701-710.
33. Dal Lago, B., Deegan, P., Ferrara, L., Pattarini, A., Sonebi, M. and Taylor, S.: "Design of steel-free prestressed reinforced concrete beams: theory and experimentation", in Bilotta A. et al., eds., Proceedings The New Boundaries of Structural Concrete, 4th workshop ACI Italy chapter, Capri, September 29-October 1 2016, pp. 137-146.

ISBN 9788898720149.

34. Ferrara, L.: “Five years of research experience at Politecnico di Milano on self-healing cement based materials”, Proceedings Italian Concrete Days, Rome, October 27-28, 2016.
35. Dal Lago, B., Muhaxheri, M. and Ferrara, L.: “Structural behaviour of an innovative precast system for light-weight wall panels”, Proceedings Italian Concrete Days, Rome, October 27-28, 2016.
36. Dal Lago, B., Mariani Orlandi, G., Rocci, A., Ferrara, L.: “Efficiency of mechanical roof-to-beam connections on the diaphragm action of precast structures”, Proceedings Italian Concrete Days, Rome, October 27-28, 2016.

### List of seminars

- October 1999, Universitat Politecnica de Catalunya, Barcelona, Spagna: “Non-local damage modelling of mixed-mode fracture in concrete”;
- April 2004, ACBM Northwestern University, Evanston, IL, USA: “Quality control of steel fiber reinforced self consolidating concrete continuing production: fresh and hardened state performance and fiber dispersion”
- May 2004, Tongji University, Shanghai, China: “Pseudodynamic tests on precast and cast-in-place reinforced concrete frames”
- June 2005, National Institute of Standards and technology, NIST, Gaithersburg, MD, USA: “Connections between fresh state behavior, fiber dispersion and toughness in Steel Fiber Reinforced Concrete: an example of industrial scale applications”
- March 2007, ACBM semiannual meeting, Evanston IL, USA: “Mix design methodology for self consolidating fiber reinforced concrete”
- March 2008, ACBM semiannual meeting, Evanston, IL, USA: “Recent research on self consolidating fiber reinforced concrete” (also at ACI 2008 Spring Convention, Los Angeles, day in honor of prof. Anthoine Naaman)
- November 2008, University of Michigan, Ann Arbor, MI, USA: “Seismic behaviour of precast r/c structures: an overview over 15 years of research in Italy”
- June 2009, Universidad Politecnica de Madrid, Spain: “Self consolidating fiber reinforced concrete”
- August 2010, Beijing Jiaotong University, Beijing, China: “Self consolidating fiber reinforced concrete: from material concept to structural applications”. The talk, with updates, has been also held at Queen’s University of Belfast (April 2011), at University of Wisconsin at Milwaukee (June 2011), in September 2011, at Korean Institute of Construction Technology (Seoul, South Korea), Mjongjing University (Seoul, South Korea), Sejong University (Seoul-South Korea), and Ulsan National Institute of Science and Technology, Ulsan, South Korea, and, in November 2011, at University of Malta.
- September 2011, Daewoo Research Institute of Construction Technology, South Korea: “Rheology of fresh concrete: from the identification of rheological properties to casting flow simulation”.
- March 2012, University of Houston, TX, USA, “High Performance Fiber Reinforced Cementitious Composites: from material to structures”.
- October 2012, Indian Institute of Technology Madras, Chennai, India, also sponsored by Indian Concrete Institute, “Benefits of High Performance Fiber Reinforced Concrete”.
- November 2012, Korean Institute of Construction Technology and Ulsan National Institute of Science and Technology, “Self healing capacity of cementitious composites”.
- March 22, 2013: Universidad Politecnica de Catalunya, Barcelona, Spain. “Double Edge Wedge Splitting test to identify tensile behaviour of HPRFRCs”.
- May,16 2013: Northwestern University, Evanston, IL, USA. “A fracture testing based approach to assess the self healing capacity of cementitious composites.
- August, 8 2013: Beijing Jiaotong University, Beijing, China. “The new boundaries of structural concrete”; the talk has also been held on August 27 at Université de Sherbrooke, Canada and on October 25, 2013 at Arizona State University, Tempe, AZ, USA.
- April, 11, 2014: “Effects of connection behaviour on the seismic response of precast reinforced concrete industrial buildings”, Taiyuan University of Technology, Taiyuan, China.
- July, 23 2014: Université Laval, Quebec, Canada: “Citius, Altius, Fortius: pushing ahead the boundaries of structural concrete through fibre reinforced cementitious composites with adapted rheology”; the talk has also been held on September 5, 2014 at Universidade Federal do Rio de Janeiro, Brasil; on September 12, 2015 at Technical University of Lulea, Sweden; University of Malta, November, 26 2015.
- April, 22 2015: Istituto Universitario di Architettura, Venezia, Italy: “Self healing capacity of advanced cementitious composites”; the talk has been also held on November, 27 2015 at the University of Malta.
- March 2 2016: European Polytechnic University, Pernik, Bulgaria: “Citius, Altius, Fortius: pushing ahead the boundaries of structural concrete through fibre reinforced cementitious composites with adapted rheology” and “Self healing capacity of advanced cementitious composites”. Seminars held also on July 21, 2016 at Tsinghua University, Beijing, PRC; on July 23, 2016 and China Building Materials Academy, Beijing, PRC; on July 18, 2017 at Sonoma corporation intl., Ltd., Beijing, PRC; on July 20, 2017 at Hunan University, Changsha, PRC.

### Lectures in the professional development courses:

- corso CTE “Progetto agli stati limite delle strutture di calcestruzzo in zona sismica-Limit state design of r/c structures vs. earthquake” (Milano, October 2003; Arezzo, February 2004);
- corso CISE-Scuola Master F.lli Pesenti “Progettazione agli stati limite: Eurocodici 2-8 Strutture in c.a. – Limit state design: Eurocodes 2 and 8-concrete structures” (Milano, December 2003 and September 2004);
- corso Collegio degli Ingegneri di Lecco sulla progettazioni agli stati limite secondo gli Eurocodici delle strutture in calcestruzzo e acciaio-Limit state design according to Eurocodes of concrete and steel structures, March 19 2005;
- corso Collegio Geometri di Lecco sulla normativa sismica di cui all’Ordinanza 3274 del 20/03/2003 e successive modifiche ed integrazioni-Limit state design according to new Italian seismic code, January 18 2006;
- corso AICAP “Guida all’uso dell’Eurocodice 2 nella progettazione strutturale- Guide to r/c design according to EC2” (Verona, October 6 2006; Pisa, January 26 2007; Napoli, May 10 2007);
- corso UNI-CTE: “Progettazione delle Strutture in calcestruzzo con gli Eurocodici-Design of r/c structures according to Eurocodes” (Dalmine 9 febbraio 2007; Milano April 20 2007; Firenze June 28 2007);
- corso Assobeton-CTE: “Aspetti progettuali specifici delle strutture prefabbricate-Design of precast concrete structures”, Milano March 8 2007;
- convegno AICAP: “Le strutture di calcestruzzo: dall’Eurocodice 2 alle Norme Tecniche-Design of r/c structures according to EC2 and new Italian structural design code”, Bologna, March 13 2008;
- corso CTE: “Progettazione di strutture con le nuove norme tecniche per le costruzioni-Design of r/c structures according to new Italian structural design code”: Foggia, June 14 2008, Verona, June 2009, Piacenza, September 2009, Milano, January 2010 and May 2012.

**Member of PhD tribunal:**

March 2002: Universidad Politecnica de Catalunya, Spain

defendant: dr. Bryan E. Barragàn

Thesis title: Failure and toughness of Steel Fiber Reinforced Concrete under tension and shear

June 2009: Universidad Politecnica de Madrid, Spain

Defendant: dr. Ester Bermejo Nunez

Thesis title: Dosificación, propiedades y durabilidad en hormigón autocompactante para edificación

March 2010: Universidad Politecnica de Catalunya, Spain

Defendant: dr. Philipe Laranjeira de Oliveira

Thesis title: Design-oriented constitutive model for steel fiber reinforced concrete

March 2013: Universidad Politecnica de Catalunya, Spain

Defendant: Pablo Pujadas Alvarez

Thesis title: Caracterización y diseño del hormigón reforzado con fibras plásticas

August 2013: Université de Sherbrooke, Canada

Defendant: dr. Fodhil Kassimi

Thesis title: Effect du type/volume des fibres sur la performance des bétons autoplaçants pour réparation.

September 2013: Technical University of Dresden, Germany

Defendant: dr. Sergiy Shyshko

Thesis title: Numerical simulation of the rheological behaviour of fresh concrete

December 2013: Technical University of Bilbao

Defendant: dr. Aimar Orbe

Thesis title: Optimización del Uso de Hormigones Autocompactantes Reforzados con Fibras de Acero en Aplicaciones Convencionales de Resistencias Moderadas

January 2015: Politecnico di Milano

PhD in Structural Geotechnical and Earthquake Engineering

March 2015: University of Padova

PhD in Civil and Environmental Engineering Sciences.

March 12, 2018: University of Pavia

Defendant: dr. Valentina Mercuri

Thesis title: Form and structural optimization: from beam modeling to 3D printing in reinforced concrete members

“autorizzo il Politecnico di Milano a pubblicare il presente curriculum sul sito WEB di Ateneo, ai fini istituzionali e in ottemperanza al D. Lgs n. 33 del 14 marzo 2013 “Decreto trasparenza” come modificato dal D. Lgs. 97 del 2016”.