

## *Curriculum Vitae of*

# **MASSIMO FRAGIACOMO**



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*(updated on July 2018)*

### **Highlight of qualifications**

- Seventeen years successful experience teaching undergraduate courses.
- Ability to develop and sustain sponsored research programs.
- Expertise in timber, steel, composite structures, earthquake engineering, finite element numerical modelling, fire engineering, and experimental research.
- 334 papers published, 117 of which on peer reviewed international journals.
- h index=33/27/22 and 3938/2284/1469 citations according to Google Scholar/Scopus/Web of Science data bases, respectively.
- Ranked 142<sup>nd</sup> in the Top Italian Scientists Engineering.
- Registered professional engineer, province of Trieste, Italy.
- Network of international partnership.
- Member of Eurocode 5 and Eurocode 8 Technical Committees.
- Excellent knowledge of English language (reading, writing and speaking).

### **Personal data**

- Born in Italy on November 24, 1967.
- Nationality: Italian.

### **Education**

- Ph.D. in Design and Conservation of Structures at the University Institute of Architecture of Venice in February 23, 2001, with flying colours and a Thesis entitled “Long-term behaviour of timber-concrete composite structures”, supervisors: Prof. R. Di Marco and Prof. A. Ceccotti.

- Degree in Civil Engineering, specialization in Structural Engineering, at the University of Trieste on April 8, 1992 with the score of 110/110 cum laude after five years studying, and Dissertation Thesis in Steel Construction entitled “Influence of viscous phenomena on long-term behavior of steel-concrete composite structures”, supervisor: Prof. C. Amadio.
- Diploma as Master Builder at the Technical School “A. Volta” in Trieste on July 1986 with the score of 60/60.

### **Attended courses**

- “Timber Construction in the new Millennium”, Venice, Sept. 28-29, 2000.
- “Seismic Resistant Steel Structures: Progress and Challenge”, Udine, October 18-22, 1999.
- “Timber Structures in new Constructions and Refurbishment”, Udine, June 8-12, 1999.
- “Wind Resistant Design of Structures: Codified and Advanced Methods”, Udine, Sept. 21-25, 1998.
- FIB “Advanced Design of Concrete Structures”, Treviso, July 13-31, 1998.
- “Management in the Public Administration”, organized by the School of Public Management, Bocconi University, Trieste, Sept. 24-Nov. 13, 1996.

### **Military Service**

- Midshipman in the Coast Guard, Italian Army of the Navy, with honourable discharge in 1993.

### **Positions held**

- From 01/09/2015 to present: Professor of Structural Engineering (“Professore Ordinario”), Department of Civil, Construction-Architectural and Environmental Engineering, University of L’Aquila (Italy).
- From 30/12/2009 to 31/08/2015: Associate Professor of Structural Design with tenure (“Professore Associato confermato”), Department of Architecture, Design and Urban Planning, University of Sassari (Italy).
- From 30/12/2006 to 29/12/2009: Associate Professor of Structural Design without tenure (“Professore Associato non confermato”), Department of Architecture, Design and Urban Planning, University of Sassari (Italy).
- From 2005 to 2006: Senior Lecturer (equivalent to US and Italian Associate Professor) in the Department of Civil Engineering, University of Canterbury (New Zealand).
- From 1999 to 2005: Research Fellow (“Assegnista di Ricerca”) in the Department of Civil Engineering, University of Trieste (Italy).
- From 1994 to 1999: Civil Engineer in the City Council of Trieste (Italy), with duties of designer and building construction management.

### **Positions offered**

- Offer of a position as Professor of Structure Engineering, University of Technology Sydney (Australia), Febr. 16, 2015.

- Appointment to Professor of Wooden Structures, Aalto University, Helsinki (Finland), Sept. 1, 2014.

### **Research experiences abroad**

- 2018: Visiting Professor, College of Engineering, Fuzhou University, China 2018 High-end Foreign Experts Recruitment Program, working on the preservation of the Tulou, historical construction made of rammed earth and wood.
- 2017: Visiting Professor, College of Engineering, Fuzhou University, China 2017 High-end Foreign Experts Recruitment Program, working on the development of timber-concrete composite bridges.
- 2016: Visiting Professor, College of Engineering, Fuzhou University, China 2016 High-end Foreign Experts Recruitment Program, working on the development of a short procurement chain of timber.
- 2013: Visiting Scientist in the Wood Products Division, FPInnovations, Vancouver, and Visiting Professor in the Department of Wood Science, the University of British Columbia, Vancouver, Canada, working on seismic design of cross-laminated timber buildings.
- 2007, 2008, 2009, 2010 and 2012: Visiting Academic, Department of Civil Engineering, University of Canterbury, Christchurch, New Zealand, working on experimental projects on timber engineering and lecturing at undergraduate and postgraduate level.
- 2007 and 2008: Colorado State University, Fort Collins, Colorado, U.S.A., working on experimental tests and modelling of wood-concrete composite beams.
- From 2005 to 2006: Department of Civil Engineering, University of Canterbury, Christchurch, New Zealand, working as Senior Lecturer in Civil Engineering.
- 1999, 2001, 2002 and 2003: Building Research Establishment (B.R.E.), U.K., working on experimental tests on wood-concrete composite floors.
- 2001: Colorado State University, Fort Collins, Colorado, U.S.A., working on experimental tests on wood-concrete composite beams.

### **Awards and honours**

- Recipient of the one-off incentive for research, teaching and administration activities at the University of Sassari for the years 2011 and 2013, according to art. 29 clause 19 of the L. 240 / 2010.
- Prize offered by the AGLC – Licio Cernobori's Geophysical Association, in 2013 to Rinaldin, G. for the best paper presented at the 32<sup>nd</sup> National Conference of the GNGTS, Italian Group of Geophysics of Solid Ground, Trieste (Italy), November 19-21, by an author less than 35-year old in the stream "Seismic Hazard, Vulnerability, and Damage Scenarios", for the article: "Effectiveness of the N2 method for the seismic analysis of structures with different hysteretic behaviour" by Rinaldin, G., Amadio, C., and Fragiaco, M.
- Recipient of the Frederick Palmer Prize offered by the Institution of Civil Engineers – UK in 2012 for the paper: "Development of prefabricated timber-concrete composite floor systems." by Fragiaco, M., and Lukaszewska, E. ICE Journal Structures and Buildings – Timber Special Issue, 2011, Vol. 164 No. SB2, pp. 117-129.

- Recipient of the Research Prize offered by the University of Sassari, Italy, for the scientific production during the five-years period 2004-2008. He was assessed the first Associate Professor in Italy for scientific production in Structural Engineering, and within the first five Italian Academics (Assistant, Associate and Full Professors) in Structural Engineering.
- Prize of € 8.640,00 € offered by the University of Sassari, Italy, for the success in the Research Project: “Building with Environmentally Sustainable Structural Timber” funded by the European Union, International Research Staff Exchange Scheme, Call: FP7-PEOPLE-IRSES-2008, 79,200 €, 2009-2012.
- Recipient of the Research Prize of 5,000 € offered by the University of Sassari, Italy, for the research activity during the two year period 2006-2007.
- Prize for the Best Research Paper at the New Zealand Society for Earthquake Engineering Conference 2008, Wairakei (New Zealand), for the paper: “Feasibility and detailing of prestressed timber buildings for seismic areas” by Smith, T., Pampanin, S., Buchanan, A., and Fragiaco, M. (2008).
- Inclusion in the “Who’s Who in Computational Science and Engineering” (2005-2006 Edition) and “Madison Who’s Who” (2007 Edition).
- Awarded in 2005 with a Fulbright scholarship for a six-month period at Colorado State University, U.S.A., for the research project entitled: “Time-dependent and collapse behavior of wood-concrete composite structures”. Scholarship not used because of the appointment as Senior Lecturer at the University of Canterbury, New Zealand.
- Degree award of 500 € in memory of Prof. R. Puhali, University of Trieste, 1992.

### **Main research interests**

The following sections summarize the main research projects carried out alone or in cooperation with other researchers in Italy and abroad.

#### ***Timber-concrete and steel-concrete composite structures***

- *Finite Element modelling of composite beams.* Specific software for non-linear analysis to failure and time-dependent behaviour of timber-concrete and steel-concrete composite beams has been developed. The software accounts for the flexibility of the shear connection and for all sort of mechanical nonlinearity of the component materials (concrete, reinforcement, shear connection, timber and steel beams). Advanced rheological models for the time-dependent behaviour of the component materials (creep, mechano-sorption, shrinkage) have been implemented. The software has been used in some institutions (Colorado State University, University of Canterbury, Lulea University of Technology, and University of Trieste) for research on time-dependent behaviour of timber-concrete composite beams.
- *Dynamic, collapse and long-term performance of timber-concrete composite beams.* A number of experimental tests have been performed on full-scale floors, strips of floors, beams and connection systems in different institutions (United Kingdom, United States, New Zealand, Sweden, and Italy). The outcomes of the tests have demonstrated the excellent mechanical performance and economical feasibility of the composite system for stiffness upgrading of existing floors as well as new prefabricated or semi-prefabricated floors. Some dynamic tests have also been performed to evaluate the natural frequency, damping ratio, and mode shapes of the composite structure. A simplified analytical procedure for the design of the composite structure in the long-term has been developed. This procedure considers a number of important phenomena such as concrete shrinkage, thermal and hygroscopic strains of concrete and timber, and type of construction (propped or unpropped) which are neglected by current Codes of

Practice. An implementation in the next revision of the Eurocode 5 is currently under discussion.

- *Collapse and long-term performance of steel-concrete composite beams.* Several aspects of the collapse behaviour such as the moment redistribution from the interior support to mid-span in continuous beams, the time-dependent behaviour, the segmental construction of composite girders where the concrete slab is cast at different times and with different order, the type of construction (propped or unpropped), the effect of concrete shrinkage, creep and cracking are being and have been extensively investigated.
- *Effective width of concrete slabs in steel-concrete composite beams.* Simplified solutions based on the outcomes of finite element modelling carried out with software packages such as ABAQUS and ADAPTIC, as well as on results of experimental tests to failure have been proposed for nonlinear and long-term analyses.

### **Timber Engineering**

- *Use of locally grown timber for multi-storey buildings.* An experimental programme aimed to develop structural solutions for multi-storey buildings using locally grown timber is being developed at the University of Sassari in cooperation with the University of Cagliari, IVALSA Trees and Timber Institute, and with the Forestry Association of Sardinia. After mechanical characterization (tensile tests of boards) of the timber grown in Sardinia, tests (in-plane shear and out-of-plane bending) will be carried out on cross-laminated timber panels made from locally grown timber. Analytical design formulas will be then derived for these panels.
- *Long-term behaviour of Laminated Veneer Lumber (LVL) and glulam members prestressed with unbonded tendons.* Creep and relaxation tests have been performed at the University of Canterbury to evaluate the prestress losses over time and at the end of the service life, and separate the contributions of different phenomena such as creep parallel and perpendicular to grain, relaxation of the tendon, environmental temperature and relative humidity variations. An extension of the simplified formulas suggested by the Eurocode 2 for the evaluation of the prestress losses in precast concrete structures has been proposed. More recently, the study has been continued at ETH, Zurich (Switzerland) on glulam beams and frames prestressed with unbonded tendons.
- *Long-term behaviour of epoxy glued connections between glulam members.* Creep tests have been carried out at the University of Canterbury to evaluate the increase in rotation and the redistribution of stresses between timber and rods in epoxy glued moment resisting beam-column connections due to the creep of timber and epoxy resin. Analytical formulas have been derived and used to predict the stress distribution and increase in rotation of the joint due to creep.
- *Influence of ductility on the behaviour of timber structures.* This research was carried out within Cost Action E55 ‘Modelling of the performance of timber structures’ with the aim to identify the best definition of ductility for timber structures and connections, and the implications of this quantity on the design of timber structures. The research also aimed to evaluate the overstrength ratios, which are needed for capacity design of timber structures in earthquake-prone areas.
- *Influence of the environmental conditions on the behaviour of timber beams.* This research, carried out within COST Action E55 in co-operation with VTT Finland and the University of Brescia, aimed to estimate the self equilibrated stress distribution (‘eigenstresses’) arising in a timber beam exposed to different environmental conditions. Advanced numerical model of wood allowing for creep, mechano sorption, shrinkage/swelling was used to carry out a parametric study for different section sizes exposed to different environmental climates. A

correlation between the severity of the climate and the variation of eigenstresses was found, demonstrating the possibility of failure for tension perpendicular to grain of cross-sections exposed to environmental conditions characterized by strong relative humidity variations.

- *Resistance of connections with multiple glued-in rods.* An extensive experimental program was undertaken at Lulea University of Technology with the aim to investigate the applicability of current design equations for single glued-in rods to the case of connections with multiple glued-in rods. Provisions to obtain ductile failure were also provided.
- *Prefabricated stabilising timber walls anchored with glued-in rods.* An innovative construction system made of posts-and-beams and cantilevered walls was developed at Lulea University of Technology. This research investigated the behaviour of the wall-foundation connection, and provided a simplified analytical method to design this connection.
- *Buckling of log-house walls.* This research project, funded by Rubner Haus Spa, European leader in the production of timber houses, aims to investigate the buckling load of log-house walls loaded in-plane. Experimental and numerical studies on walls with different geometrical configurations have been carried out with the aim to investigate the effect of openings such as windows and doors, and load eccentricities. Simple design equations have been derived and will be proposed for the new generation of the Eurocode 5.

### ***Fatigue and fracture***

- *Fatigue of shear connections for timber-concrete composite beams.* Tests under repeated (cyclic) loading of notched and steel metal plate shear connections for timber-concrete composite beams have been performed at the University of Canterbury and at Metropolitan State College of Denver. The aim of the tests, carried out on both push-out specimens and full-scale beams, is to derive the S-N lines for these types of connections, which are crucial for the design of timber-concrete composite bridges.
- *Fracture mechanics of timber beams.* With the aim of investigating the performance and design of LVL beams with holes, an extensive experimental programme has been undertaken at the University of Canterbury. Results of the tests include fracture toughness and fracture energy in Mode I (opening) and II (shear) for LVL loaded in tension perpendicular to grain and longitudinal shear, respectively. In addition, tests on LVL beams weakened by holes placed at different locations and with different diameters have been carried out. Numerical FE models based on linear fracture mechanics and on cohesive elements have been developed and used, in conjunction with the experimental results, to carry out a parametric study aimed to extend the experimental results to different beam geometries and to derive a design method. The influence of different types of reinforcement used in the proximity of the hole was also investigated via experimental and numerical analysis.

### ***Structural Fire Engineering***

- *Fire resistance of timber connections.* A number of experimental tests at constant high temperature, and under fire conditions have been performed at the University of Canterbury. The purpose was to assess the fire resistance of different types of timber connections (bolted, screwed, nailed, with steel or timber splice plates). A simplified design has been derived and will be proposed for implementation in the new generation of the Eurocode 5-Part 1-2.
- *Numerical modelling of timber members subjected to fire.* A FE model has been implemented in ABAQUS software package with the aim to allow the user to perform a coupled thermal-structural analysis for prediction of the fire resistance of loaded timber members exposed to fire. Comparison with experimental tests of LVL members loaded in tension and subject to fire showed the excellent accuracy of the model developed.

- *Fire resistance of crosslam panels loaded in-plane and out-of-plane.* Fire tests to failure were conducted at IVALSA Trees and Timber Institute, Italy on full-scale cross-laminated panels loaded in-plane and out-of-plane. Analytical formulas based on the Eurocode 5-Part 1-2 approach were compared with the experimental results. The results are also being compared with the fire tests performed at SP Swedish National Testing and Research Institute, Sweden on strips of panels. The FE model discussed in the previous bullet point was validated on the experimental results, and is being used to extend the results to other cases of technical interest.
- *Fire resistance of timber-concrete composite beams.* Full-scale fire tests of timber-concrete composite floors were carried out at Building Research Association of New Zealand. Based on the experimental results, an analytical design model was developed and used to provide some tabular design values for the fire resistance.
- *Simplified design method for the fire resistance of timber members.* A research carried out in co-operation with SP Traetek (Sweden) and ETH (Switzerland) has looked into the accuracy of the reduced cross-section method for the evaluation of the fire resistance of timber members, which is currently adopted by the Eurocode 5-Part 1-2. The determination of the zero-strength layer thickness for members in bending, tension and compression was investigated, and guidelines on the use of standard experimental tests to determine this quantity were provided. It was shown that the zero-strength layer may exceed the value used in practice, indicating that the Eurocode 5-Part 1-2 may be non-conservative and should be revised.

### ***Structural Earthquake Engineering***

- *Preparation of a new background document for the Section 8 of Eurocode 8 on Seismic design of timber structures.* This research aims to develop a new background document on the above to reflect the current state-of-the-art and to implement the results of several research projects recently completed in the new generation of the Eurocode 8.
- *Seismic resistance of log-house buildings.* This research project, funded by Rubner Haus Spa, European leader in the production of timber houses, aims to investigate the seismic resistance of log-house timber buildings. Experimental and numerical studies are being carried out with special emphasis on developing an advanced FE model to characterize the complex hysteretic behaviour of these types of structures. Provisions for capacity based design will be given, and derivation of conservative values of the q-factor will be sought.
- *Seismic resistance of moment-resisting timber frames.* A numerical study is being performed to investigate the seismic performance of moment-resisting timber frames with high ductility steel tube fastener connections. The aim is to estimate the behaviour factor depending on the joint ductility for inclusion in the next generation of the Eurocode 8. The advanced FE model will be calibrated on the results of experimental cyclic tests carried out on full-scale beam-column moment joints carried out at Eindhoven Technical University.
- *Innovative seismic-resistant multi-storey timber buildings made from glulam.* A research project has been carried out in cooperation with the Italian Wood Processor Association, three glulam producers, the University of Trieste, Italy, and IVALSA Timber and Trees Institute to develop innovative multi-storey timber buildings using glulam as main structural materials. A new wall-foundation connection using innovative lead extruded dampers invented at the University of Canterbury has been experimentally investigated showing appropriate seismic resistance and larger energy dissipation when compared to the traditional bolted connection.
- *Cyclic behaviour of typical connections and wall subassemblies for cross-laminated buildings.* A research project in cooperation with the IVALSA Trees and Timber Institute and the University of Trieste, Italy has been carried out to experimentally characterize the cyclic behaviour of typical connections (hold-downs, angle brackets, screw connections) used in cross-

laminated timber buildings. Ductility ratios, strength values, overstrength factors, and impairment of strength have been measured and are now available to designers, together with simplified analytical design formulas, and capacity based design criteria to avoid brittle failure in the connection and ensure ductile behaviour. Cyclic tests on single and coupled cross-laminated timber wall panels with different metal connector distribution have also been performed and analytical rules have been proposed to ensure a dissipative behaviour of the subassembly.

- *Seismic design of cross-laminated timber buildings.* Design methods for cross-laminated timber buildings in accordance with the Eurocode 8 have been proposed, with special emphasis on suggesting simplified FE schematizations that can account for the typical seismic behaviour of the metal connectors. It was shown that the connection flexibility cannot be ignored in linear static and linear dynamic analysis. A design procedure based on the N2 method proposed by Fajfar was also developed. Capacity based rules for the design of the buildings, currently missing in the Eurocode 8, were also proposed.
- *Development of advanced FE models for seismic performance of multi-storey timber buildings made from cross-laminated panels.* An advanced hysteretic model capable to follow the typical cyclic behaviour of metal connectors (hold-downs, angle brackets, and screws) used in cross-laminated buildings has been developed and implemented in ABAQUS and OpenSees software packages. The hysteretic model has been calibrated on experimental tests carried out on the connectors, and then used to model both the experimental cyclic behaviour of cross-laminated panels and subassemblies, and the shaking table tests performed on entire buildings, finding good agreement. The model is now being used to carry out parametric studies aimed to assess the behaviour factor  $q$ , currently missing in the Eurocode 8 for this type of buildings, depending on the construction method (e.g. use of small wall panels with several vertical screw joints as opposed to the use of a long wall panel without vertical screw joints). A further development, in co-operation with IVALSA Trees and Timber Institute, is the use of this model to predict the cyclic behaviour of the metal connector itself (hold-downs and angle brackets) starting from the behaviour of the single nail used to connect the angle bracket to the timber panel. With this new model available, it will be possible to predict the cyclic behaviour of the metal connectors without the need for experimental cyclic tests on the entire metal connector.
- *Use of Single and Multi-Tuned Mass Dampers for seismic mitigation of cross-laminated timber buildings.* The possibility to use single and multi-tuned mass dampers as a way to reduce the high accelerations typically induced by earthquake on medium and high-rise multi-storey cross-laminated timber buildings is being investigated via advanced FE modelling in co-operation with IVALSA Trees and Timber Institute. A reduction of up to 40% has been obtained when using genetic optimization algorithms to optimize the mechanical properties and locations of the TMDs.
- *Use of passive base isolation systems for timber buildings.* The possibility to use passive base isolation has been investigated by designing a three-storey building with lightframe construction with and without passive base isolation. The structural performances and costs of both solutions were compared, demonstrating passive base isolation can be effectively used also for timber buildings providing the design is not governed by wind.
- *Seismic performance of timber structures prestressed with unbonded tendons.* A wide experimental program has been undertaken at the University of Canterbury, New Zealand to develop an innovative seismic resistance system characterized by energy dissipation with limited damage at the end of the seismic event. The system is very promising and has already been used for multi-storey buildings with vertical and horizontal structure made entirely from timber.



- *Seismic design using the capacity spectrum method.* An extensive parametric study carried out on different structural systems using numerical methods and design approaches has shown the different degree of accuracy achievable using different codes of practice. The N2 method proposed by Fajfar fitted with the numerical results better than the other analytical methods. Studies are currently in progress to extend the use of this method to timber structures.
- *Effectiveness of passive base isolation systems.* An analytical design method for the evaluation of the properties of the best passive base isolation system has been developed. The procedure is extremely simple and easy to use, and leads to accurate results.
- *Effect of repeated earthquakes on structures.* The outcomes of a parametric study carried out on different types of steel, reinforced concrete frames, and masonry panels have led to a design proposal aimed to limit the structural damage in earthquake-prone areas where sequences of two or more medium-high intensity shakings may be likely to occur.
- *Out-of-plane seismic behavior of masonry walls via rocking analysis.* A research into the out-of-plane behaviour of masonry walls has been carried out. Both rocking analysis and kinematic analysis as suggested by the Italian code have been performed. It has been shown that the latter approach is generally over-conservative and therefore potentially inappropriate for historic buildings, where rehabilitation can be expensive and can affect their cultural value. The equation of motion given by the Housner formulation, corresponding to the movement of a rigid block, has been modified to account for different boundary conditions at different heights of the wall. These boundary conditions can represent vaults, transverse walls or retrofitting devices such as steel tie-rods. A systemic analysis of walls having different dimensions and slenderness has been performed, and the results from the Italian code and rocking analysis have been compared.
- *In-plane behaviour of masonry structures in earthquake-prone regions.* The seismic performance of masonry buildings has been investigated using two-dimensional models based on the use of shell elements (ABAQUS code) and equivalent frames (beam elements – SAP 2000 code) for the in-plane behaviour of masonry walls. The fragility curves of an existing stone-masonry building typical of the North-East of Italy have been drawn.
- *Seismic behaviour of steel and steel-concrete composite frames with rigid and semi-rigid beam-to-column connections.* Numerical component models have been implemented in the ABAQUS finite element software to investigate the dynamic behaviour of the frames. The possibility to significantly improve the seismic performance using dissipative bracings was also analysed.

### **Miscellaneous**

- *Glass-steel joints.* An extensive experimental program of tests to failure followed by finite element modelling with the ABAQUS and STRAUS packages has led to the formulation of a simplified design method based on the use of the stress intensity factor.
- *Use of evolutionary multi-objective algorithms for structural optimization.* Those algorithms have been used for the design of a barrel vault roof made from glass and steel. The algorithm is based on the use of the code MODE FRONTIER for optimization and the code STRAUS for structural analysis. A significant reduction in cost has been obtained.

### **Number of citations and h-index:**

- Listed in the Top Italian Scientists Engineering with rank 142.
- Number of papers according to Google Scholar: 333.

- Number of papers according to Scopus: 175.
- Number of papers according to Web of Science: 120.
- Number of citations according to Google Scholar: 3938 (2515 since 2013).
- Number of citations according to Scopus: 2284 (1723 excluding self citations).
- Number of citations according to Web of Science: 1469 (1163 excluding self citations).
- h-index according to Google Scholar: 33 (25 since 2013).
- i-10 index (number of papers with at least 10 citations) according to Google Scholar: 98 (77 since 2013).
- h-index according to Scopus: 27 (25 excluding self citations).
- h-index according to Web of Science: 22.

### **Summary of scientific production:**

#### ***Summary – Entire production***

Technical regulations	4
Chapters of book	6
Editorials of international journals	2
Refereed international journal papers	117
National journal papers	11
Refereed conference papers	30
Other papers presented at international conferences	97
Other papers presented at national conferences	60
Research reports	11
<b><i>Total</i></b>	<b><i>334</i></b>

#### ***Summary – Production in the last five years***

Technical regulations	3
Chapters of book	2
Editorials of international journals	2
Refereed international journal papers	60
National journal papers	3
Refereed conference papers	9
Other papers presented at international conferences	29
Other papers presented at national conferences	17
Research reports	0
<b><i>Total</i></b>	<b><i>125</i></b>

### ***Papers not yet published***

Journal papers under review

8

### **List of publications:**

(the name of the undersigned is underlined for immediate evidence; the names of the Ph.D./Master students supervised by the undersigned are *in italic and with an asterisk*\*)

### ***Technical regulations:***

4. Dias, A., Fragiacomo, M., Harris, R., Kuklík, P., Rajčić, V., and Schänzlin, J. (2018). “Background Document – Eurocode 5: Design of Timber Structure. Structural design of timber-concrete composite structures – Common rules and rules for buildings.” CEN, 65 pp.
3. Dias, A., Fragiacomo, M., Harris, R., Kuklík, P., Rajčić, V., and Schänzlin, J. (2018). “Technical Specification – Eurocode 5: Design of Timber Structure. Structural design of timber-concrete composite structures – Common rules and rules for buildings.” CEN, 63 pp.
2. Bedon, C., Brunetti, M., Calderoni, B., Ceraldi, C., Faggiano, B., Ferracuti, B., Fragiacomo, M., Follesa, M., Gattesco, N., Giubileo, C., Gubana, A., Lauriola, M.P., Martinelli, E., Metelli, G., Piazza, M., Pizzo, B., Pampanin, S., Podestà, S., Sandoli, A., and Zanon, P. (2018). “Norme CNR-DT 206 R1/2018: Instructions for design, execution and control of timber structures (Istruzioni per la progettazione, l’esecuzione ed il controllo delle strutture di legno).” 160 pp., CNR. (in Italian).
1. Panecaldo, M., Lucchese, A., Lorenzi, G., Zanon, P., Piazza, M., Fragiacomo, M., Tomasi, R., Ceccotti, A., and Luchetti, M. (2012). “Guidelines for evaluating the compliance of timber products and structural systems to the Italian Technical Regulation of Construction” (Linee Guida per la certificazione dell’idoneità tecnica all’impiego di materiali e prodotti innovativi in legno per uso strutturale (DM 14.01.08 – Norme Tecniche per le costruzioni, paragrafo 11.1, lettera C)). Presidency of the Upper Council of Public Works, Central Technical Service (Presidenza del Consiglio Superiore dei Lavori Pubblici, Servizio Tecnico Centrale), Rome (Italy), pp. 14 (in Italian).

### ***Chapters of books:***

6. *Izzi, M.\**, and Fragiacomo, M. (2018). “Hysteretic behaviour of connections and wall systems used in CLT structures.” Chapter of a special book celebrating the 65<sup>th</sup> birthday of Dr. Simon Aicher, 15 pp, in press.
5. Trulli, N., Valdes, M., De Nicolo, B., and Fragiacomo, M. (2017). “Grading of low quality wood for use in structural elements.” Chapter of the book “Wood Engineering”, edited by Intech, ISBN 978-953-51-5018-3, doi: 10.5772/63178.
4. Fragiacomo, M., and *Rinaldin, G.\** (2011). “Advanced models for seismic analyses of timber buildings.” Chapter of the book “Außergewöhnliche Einwirkung - Erdbeben - im Holzbau”, Workshop on crosslam construction “Grazer Holzbau-Fachtagung – 9. Gra FHT’11”, Technical University of Graz, Austria, pp. J-1 – J-28.
3. *Gavric, I.\**, Ceccotti, A., and Fragiacomo, M. (2011). “Experimental cyclic tests on cross-laminated timber panels and typical connections.” Chapter of the book “Außergewöhnliche Einwirkung - Erdbeben - im Holzbau”, Workshop on crosslam construction “Grazer Holzbau-

Fachtagung – 9. Gra FHT'11", Technical University of Graz, Austria, pp. H-1 – H-28.

2. Fragiacomo, M., Yeoh, D.C.\*, and Davison, R. (2007). "Timber Flooring." Chapter 25 of the "Timber Design Guide", Third Edition, edited by Prof. Andy Buchanan, published by New Zealand Timber Industry Federation Inc., pp. 273-281.
1. Amadio, C., Fragiacomo, M., and Macorini, L.\* (2006). "Advanced analysis methods for continuous steel-concrete composite beams". Chapter of the book "Composite structures: new construction, refurbishment, bridges", edited by L. Dezi and N. Gattesco, International Centre for Mechanical Sciences (CISM), Udine, pp. 43-73 (in Italian).

#### ***Editorials of international journals:***

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97. van de Lindt, J.W., Amini, M.O., Furley, J., Pei, S., *Tamagnone, G.\**, Barbosa, A.R., Line, P., Rammer, D., and Fragiacomo, M. (2018). "Experimental seismic behavior of a two-story CLT platform building: shake table testing results." 15<sup>th</sup> World Conference on Timber Engineering WCTE 2018, Seoul (South Korea), August 20-23, 2018, 7 pp., CD.
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53. Follesa, M., Vassallo, D., Fragiacomo, M., Piazza, M., Tomasi, R. Rossi, S., and Casagrande, D. (2015). "Una proposta di revisione del Capitolo 8 sulle strutture di legno dell'Eurocodice



- 8.” 16<sup>th</sup> ANIDIS Conference “The Earthquake Engineering in Italy”, L’Aquila (Italy), Sept. 13<sup>th</sup>-17<sup>th</sup>, Franco Braga & Dante Galeota Editors, 13 pp., CD (in Italian).
52. Bedon, C., Rinaldin, G., Fragiacomo, M., and Amadio, C. (2015). “Exploratory cyclic and dynamic numerical investigation for the assessment of the seismic vulnerability of *Blockhaus* shear walls under in-plane lateral loads.” 16<sup>th</sup> ANIDIS Conference “The Earthquake Engineering in Italy”, L’Aquila (Italy), Sept. 13<sup>th</sup>-17<sup>th</sup>, Franco Braga & Dante Galeota Editors, 12 pp., CD.
  51. Fong, L.Y., *Abd. Ghafar, N.H.\**, Abd Rahman, N., Fragiacomo, M., Ibrahim, Z., and Buchanan, A. (2014). “Comparison between the vibration performance of LVL-concrete composite (LCC) flooring system made of Malaysian and New Zealand LVL.” The National Seminar on Civil Engineering Research (SEPKA 2014), UTM Training Centre, Universiti Teknologi Malaysia (UTM) Johor Bahru, April 14-15, Malaysia, pp. 10, CD.
  50. Bedon, C., Fragiacomo, M., Amadio, C., and Sadoch, C. (2013). “Experimental and numerical seismic characterization of ‘Blockhaus’ shear walls under in-plane lateral loads.” 32<sup>nd</sup> National Conference of the GNGTS, Italian Group of Geophysics of Solid Ground, Trieste (Italy), November 19-21, Vol. 2, pp. 22 – 29, ISBN 978-902101-7-4.
  49. Rinaldin, G., Amadio, C., and Fragiacomo, M. (2013). “Effectiveness of the N2 method for the seismic analysis of structures with different hysteretic behaviour.” 32<sup>nd</sup> National Conference of the GNGTS, Italian Group of Geophysics of Solid Ground, Trieste (Italy), November 19-21, Vol. 2, pp. 131 – 136, ISBN 978-902101-7-4 (*Recipient of the prize offered by the AGLC – Licio Cernobori’s Geophysical Association, to the best paper in the stream “Seismic Hazard, Vulnerability, and Damage Scenarios” presented by an author less than 35-year old*).
  48. *Poh’sie, G.H.\**, Amadio, C., *Rinaldin, G.\**, Fragiacomo, M., and Ceccotti, A. (2013). “Application of tuned mass dampers on multi-storey timber buildings.” 15<sup>th</sup> ANIDIS Conference “The Earthquake Engineering in Italy”, Franco Braga & Claudio Modena Editors, Padua (Italy), June 30<sup>th</sup>-July 4<sup>th</sup>, 10 pp., CD (in Italian).
  47. *Rinaldin, G.\**, Amadio, C., and Fragiacomo, M. (2013). “Accuracy of the N2 and overdamped spectrum method for different hysteretic models.” 15<sup>th</sup> ANIDIS Conference “The Earthquake Engineering in Italy”, Franco Braga & Claudio Modena Editors, Padua (Italy), June 30<sup>th</sup>-July 4<sup>th</sup>, 10 pp., CD.
  46. *Rinaldin, G.\**, Fragiacomo, M., *Poh’sie, G.H.\**, and Amadio, C. (2013). “A component model for seismic analysis of light frame timber structures.” 15<sup>th</sup> ANIDIS Conference “The Earthquake Engineering in Italy”, Padua (Italy), Franco Braga & Claudio Modena Editors, June 30<sup>th</sup>-July 4<sup>th</sup>, 9 pp., CD (in Italian).
  45. *Wrzesniak, D.\**, Amadio, C., *Rinaldin, G.\**, and Fragiacomo, M. (2013). “Non-linear cyclic modelling of moment-resisting timber frames.” 15<sup>th</sup> ANIDIS Conference, Padua (Italy), Franco Braga & Claudio Modena Editors, June 30<sup>th</sup>-July 4<sup>th</sup>, 9 pp., CD.
  44. Bedon, C., Fragiacomo, M., Amadio, C., and Sadoch, C. (2013). “Experimental and numerical investigation of “Blockhaus” shear walls under in-plane cyclic loads.” 15<sup>th</sup> ANIDIS Conference “The Earthquake Engineering in Italy”, Franco Braga & Claudio Modena Editors, Padua (Italy), June 30<sup>th</sup>-July 4<sup>th</sup>, 11 pp., CD.
  43. *Rinaldin, G.\**, Amadio, C., and Fragiacomo, M. (2012). “Non-linear springs for cyclic analysis of wooden structures.” Proceedings of the OpenSees Days – Modelling, calculation and analysis of structures in earthquake-prone regions – 1<sup>st</sup> Italian Conference. Roma, May 24-25.

42. Fragiacomo, M., Amadio, C., and *Sancin, L.\** (2011). "Numerical modeling of a strategic timber building in L'Aquila with and without passive base isolation." 30<sup>th</sup> National Conference of the GNGTS, Italian Group of Geophysics of Solid Ground, Trieste (Italy), November 14-17, pp. 208-210, ISBN 978-88-902101-6-8.
41. Amadio, C., Fragiacomo, M., Macorini, L., and Lovato, S. (2011). "Long-term analysis of steel-concrete composite beams in cracked and uncracked phase." 23<sup>rd</sup> CTA (Italian Steel) Conference, Ischia (Italy), October 9-12, pp. 111-123 (in Italian).
40. Fragiacomo, M., *Menis, A.\**, Clemente, I., and Bochicchio, G. (2011). "Fire resistance of cross-laminated timber floors." 23<sup>rd</sup> CTA (Italian Steel) Conference, Ischia (Italy), October 9-12, pp. 571-578 (in Italian).
39. *Rinaldin, G.\**, Amadio, C., and Fragiacomo, M. (2011). "A component approach for non-linear behavior of cross-laminated solid timber panels." 14<sup>th</sup> ANIDIS Conference, Bari (Italy), September 18<sup>th</sup>-22<sup>nd</sup>, 10 pp., CD.
38. *Gavric, I.\**, Ceccotti, A., and Fragiacomo, M. (2011). "Experimental cyclic tests on cross-laminated timber panels and typical connections." 14<sup>th</sup> ANIDIS Conference, Bari (Italy), September 18<sup>th</sup>-22<sup>nd</sup>, 12 pp., CD.
37. Newcombe, M.P., van Beerschoten, W.A., Carradine, D., Pampanin, S., Buchanan, A.H., Deam, B.L., and Fragiacomo, M. (2009). "In-plane experimental testing of timber-concrete composite floor diaphragms." New Zealand Society for Earthquake Engineering Conference 2009, Christchurch (New Zealand), April 3-5, Paper No. 19, CD, 8 pp.
36. Fragiacomo, M. (2009). "Timber-concrete composite bridges." 3<sup>rd</sup> Italian Workshop on Bridge Design "BridgeItaly 2009", Padova (Italy), December 14.
35. *Smith, T.\**, Pampanin, S., Buchanan, A., and Fragiacomo, M. (2008). "Feasibility and detailing of prestressed timber buildings for seismic areas." New Zealand Society for Earthquake Engineering Conference 2008, Wairakei (New Zealand), April 11-13, Paper No. 53, CD, 8 pp. (*recipient of the Prize for the Best Research Paper at the New Zealand Society for Earthquake Engineering Conference 2008*).
34. *Abd. Ghafar, N. H.\**, Deam, B., Fragiacomo, M., and Buchanan, A. (2008). "Susceptibility to vibrations of LVL-concrete composite floors." 7<sup>th</sup> Italian Workshop on Composite Construction, Benevento (Italy), October 23-24, pp. 321-328.
33. *Yeoh, D.*, Fragiacomo, M., *De Franceschi, M.\**, and Clemente, I. (2008). "Short- and long-term investigations of LVL-concrete composite floors in Australasia." 7<sup>th</sup> Italian Workshop on Composite Construction, Benevento (Italy), October 23-24, pp. 309-320.
32. Gattesco, N., Macorini, L., and Fragiacomo, M. (2008). "Moment redistribution limits for steel-concrete composite beams accounting for ULS and SLS requirements." 7<sup>th</sup> Italian Workshop on Composite Construction, Benevento (Italy), October 23-24, pp. 23-32.
31. *Smith, T.\**, *Ludwig, F.\**, Pampanin, S., Fragiacomo, M., Buchanan, A., Deam, B., and Palermo, A. (2007). "Seismic response of hybrid-LVL coupled walls under quasi-static and pseudo-dynamic testing." New Zealand Society for Earthquake Engineering Conference 2007, Palmerston North (New Zealand), March 30-April 1, Paper No. 60, CD, 8 pp.
30. *Pettigrew, T.M.\**, Fragiacomo, M., and Bull, D.K. (2006). "Verification of raker shores using New Zealand timber." New Zealand Society for Earthquake Engineering Conference 2006, Napier (New Zealand), March 10-12, Paper No. 10, CD, 10 pp.
29. Amadio, C., Clemente, I., Fragiacomo, M., and *Macorini, L.\** (2005). "Seismic analysis of partially restrained composite frames coupled with dissipative bracings." 20<sup>th</sup> CTA

Conference “Advances in Steel Construction”, Ischia (Italy), Sept. 26-28, pp. 1-8.

28. Amadio, C., Clemente, I., Fragiacomo, M., and *Macorini, L.\** (2005). “Modelling of steel-concrete composite frames with semi-rigid joints by means of the component method.” 20<sup>th</sup> CTA Conference “Advances in Steel Construction”, Ischia (Italy), Sept. 26-28, pp. 9-16.
27. Fragiacomo, M., Amadio C., and *Macorini, L.\** (2004). “Stud connector ‘Tecnaria’ for timber-concrete composite beams: short- and long-term experimental tests.” 6<sup>th</sup> Italian Workshop on Composite Construction, Trieste (Italy), November 22-23, CD (in Italian).
26. Amadio, C., Fragiacomo, M., Ferro, D., *Macorini, L.\**, and Pasquale, D. (2004). “On the modeling of steel-concrete semi-rigid joints and PR composite frames using the component method.” 6<sup>th</sup> Italian Workshop on Composite Construction, Trieste (Italy), November 22-23, CD (in Italian).
25. Amadio, C., *Martin, A.\**, and Fragiacomo, M. (2004). “Seismic analysis of a steel frame coupled with dissipative bracings.” 6<sup>th</sup> Italian Workshop on Composite Construction, Trieste (Italy), November 22-23, CD (in Italian).
24. Amadio, C., De Luca, O., *Fedrigò, C.\**, Fragiacomo, M., and *Sandri, C.\** (2004). “Experimental tests and numerical analysis of a glass-to-steel connection subjected to shear.” 6<sup>th</sup> Italian Workshop on Composite Construction, Trieste (Italy), November 22-23, CD (in Italian).
23. Amadio, C., *Lucia, P.\**, Fragiacomo, M., and De Luca, O. (2004). “Optimal design of steel-glass barrel vaults using the genetic algorithm code ‘Frontier’.” 6<sup>th</sup> Italian Workshop on Composite Construction, Trieste (Italy), November 22-23, CD (in Italian).
22. Fragiacomo, M., Amadio, C., and *Macorini, L.\** (2004). “Collapse and serviceability behaviour of a stud connector for timber-concrete composite structures.” 15<sup>th</sup> CTE Conference, Bari, November 4-6, Vol. 1, pp. 313-322 (in Italian).
21. Gattesco, N., *Macorini, L.\**, and Fragiacomo M. (2004). “Numerical evaluation of the possible moment redistribution in steel-concrete composite beams” 15<sup>th</sup> CTE Conference, Bari, November 4-6, Vol. 1, pp. 211-220 (in Italian).
20. *Macorini, L.*, Amadio, C., *Foresto, E.\**, and Fragiacomo, M. (2003). “Evaluation of effective width for steel-concrete composite beams under long-term loading.” 19<sup>th</sup> CTA Conference, Genoa, September 28-30, Vol. 1, pp. 281-292 (in Italian).
19. Amadio, C., *Clemente, I.\**, Fragiacomo, M., *Macorini, L.\**, Noè, S., and Pasquale, D. (2003). “On the numerical modelling of partially restrained steel frames in seismic regions”. 19<sup>th</sup> CTA Conference, Genoa, September 28-30, Vol. 1, pp. 157-168 (in Italian).
18. Amadio, C., Fragiacomo, M., *Macorini, L.\**, and Urizio, M. (2002). “Evaluation of deflections under the service load for composite beams with different static schemes and modalities of construction”. 5<sup>th</sup> Italian Workshop on Composite Construction, Salerno, November 28-29, Vol. 1, pp. 37-51 (in Italian).
17. Amadio, C., Fragiacomo, M., *Macorini, L.\**, and Qualli, A. (2002). “Effect of casting sequence on behaviour under the service load of composite girder bridges in cracked and uncracked phase”. 5<sup>th</sup> Italian Workshop on Composite Construction, Salerno, November 28-29, Vol.1, pp. 113-128 (in Italian).
16. Amadio, C., *Fedrigò, C.\**, Fragiacomo, M., and *Macorini, L.\** (2002). “Experimental investigation of the shear lag phenomenon in steel-concrete composite beams”. 5<sup>th</sup> Italian Workshop on Composite Construction, Salerno, November 28-29, Vol.1, pp. 53-70 (in Italian).

15. Amadio, C., Fragiacomo, M., *Macorini, L.\**, and Urizio, M. (2002). "On the serviceability limit state verification of propped and unpropped steel-concrete composite beams with deformable connection." 14<sup>th</sup> CTE Conference, Mantua, November 7-9, Vol. 2, pp. 465-473 (in Italian).
14. Amadio, C., Fragiacomo, M., Grandelis, F., and *Macorini, L.\** (2001). "On the modelling of semi-rigid steel-concrete composite joints." 18<sup>th</sup> CTA Conference, Venice, September 26-28, Vol. 2, pp. 341-354 (in Italian).
13. Amadio, C., Fragiacomo, M., and *Kliman, I.\** (2001). "Effect of repeated earthquakes on structures." 10<sup>th</sup> ANIDIS Conference, Potenza, September 9-13, CD (in Italian).
12. Amadio, C., *Fedrigo, F.\**, Fragiacomo, M., *Pozzetto, O.\**, Ceccotti, A., and Di Marco, R. (2000). "Numerical modelling and long-term behavior of timber-concrete composite beams". 4<sup>th</sup> Italian Workshop on Composite Construction, Palermo, November 23-24, pp. 293-305 (in Italian).
11. Amadio, C., Fragiacomo, M., and *Macorini, L.\** (2000). "Parameters affecting the short-and long-term modelling of steel-concrete composite beams." 4<sup>th</sup> Italian Workshop on Composite Construction, Palermo, November 23-24, pp. 36-49 (in Italian).
10. Amadio, C., Ceccotti, A., Di Marco, R., and Fragiacomo, M. (2000). "Effects of rheological phenomena on behaviour of timber-concrete composite beams." 13<sup>th</sup> CTE Conference, Pisa, November 9-11, Vol. 1, pp. 59-68 (in Italian).
9. Amadio, C., Fragiacomo, M., and *Macorini, L.\** (2000). "Effects of shrinkage and creep on steel-concrete composite beams with normal or high strength concrete slab". 13<sup>th</sup> CTE Conference, Pisa, November 9-11, Vol. 1, pp. 69-78 (in Italian).
8. Amadio, C., Briganti, D., and Fragiacomo, M. (1999). "Effective width in steel-concrete composite beams for an ultimate analysis." 17<sup>th</sup> CTA Conference, Naples, October 3-7, Vol. 2, pp. 239-249.
7. Amadio, C., and Fragiacomo, M. (1999). "A finite element model for short and long term analysis of steel-concrete composite beams in cracked phase." 17<sup>th</sup> CTA Conference, Naples, October 3-7, Vol. 2, pp. 251-261.
6. Amadio, C., and Fragiacomo, M. (1998). "Influence of connection properties on evaluation of short- and long-term effects for steel-concrete composite beams under service loading." 3<sup>rd</sup> Italian Workshop on Composite Construction, Ancona, October 29-30, pp. 21-42 (in Italian).
5. Amadio, C., and Fragiacomo, M. (1997). "Effects produced by creep on steel-concrete composite beams with slab reinforcement and simplified evaluation based on the AAEM method." 16<sup>th</sup> CTA Conference, Ancona, October 2-5, pp. 33-46 (in Italian).
4. Amadio, C., and Fragiacomo, M. (1995). "Evaluation of shrinkage effects in steel-concrete composite beams with deformable connection." 15<sup>th</sup> CTA Conference, Riva del Garda (Trento), October 15-18, pp. 1-12 (in Italian).
3. Amadio, C., and Fragiacomo, M. (1995). "Simplified evaluation of creep effects in composite beams with deformable connection." 2<sup>nd</sup> Italian Workshop on Composite Construction, Naples, June 22-23, pp. 19-38 (in Italian).
2. Amadio, C., and Fragiacomo, M. (1993). "Evaluation of creep and shrinkage effects in steel-concrete composite beams with rigid or deformable connection using a simplified approach based on the AAEM method." 14<sup>th</sup> CTA Conference, Viareggio, October 24-27, pp. 22-38 (in Italian).
1. Amadio, C., and Fragiacomo, M. (1993). "On the evaluation of rheological phenomena in

composite beams with rigid or deformable connection using the AAEM method.” 1<sup>st</sup> Italian Workshop on Composite Construction, Trento, June 17-18, pp. 133-151 (in Italian).

### **Research reports**

11. Bedon, C., Amadio, C., and Fragiacomo, M. (2012). “Buckling experiments on full-scale blockhaus walls under in-plane compression.” Research Report, University of Trieste, Italy, 31 pp.
10. Fragiacomo, M. (2012). “Experimental-analytical behaviour of multilayer timber panels under in-plane and out-of-plane loading.” Final Research Report for the Sardinia Region, founding agency of the corresponding research project, University of Sassari, Italy, 19 pp. (in Italian).
9. Bedon, C., Fragiacomo, M., and Amadio, C. (2012). “Implementation of an advanced numerical model in Abaqus for in-plane cyclic behaviour of ‘Blockhaus’ (log-house) timber walls.” Research Report, University of Sassari, Italy, 180 pp. (in Italian).
8. *Wallington, C.C.\**, Fragiacomo, M., Buchanan, A., and Batchelar, M. (2009). “Long term deformation of epoxy glued glulam portal frame knee joints.” Final Report for Building Research Association of New Zealand Inc. – Contract No. 85147, May 2009.
7. Crews, K., Gerber, C., *Yeoh, D.\**, Buchanan, A., and Fragiacomo, M. (2008). “Innovative engineered timber building systems for non residential applications. Summary report testing of prototype components and floor beams for Forest and Wood Products Australia.” Milestone 4 – September 2008.
6. Crews, K., Gerber, C., Buchanan, A., and Fragiacomo, M. (2008). “Innovative engineered timber building systems for non residential applications. Report Of Test Specification And Results - Prototype Components - For Forest And Wood Products Association.” Milestone 3 – May 2008.
5. Crews, K., Gerber, C., Choi, F., Buchanan, A., and Fragiacomo, M. (2007). “Innovative engineered timber building systems for non residential applications. Preliminary report (concept design) and literature review for Forest and Wood Products Association.” Milestone 2 – November 2007.
4. *Pasticier, L.\**, Pampanin, S., Fragiacomo, M., Buchanan, A., and Palermo, A. (2006). “Experimental and numerical validation of innovative connections for LVL (laminated veneer lumber) frame systems: Laboratory results from tests carried out on a column-foundation subassembly.” Research report, Dept. of Civil Engineering, University of Canterbury, New Zealand, 68 pp.
3. Amadio, C., Fragiacomo, M., *Martin, A.\**, and *Pasquale, D.\** (2004). “Seismic analysis of partially restrained frames coupled with dissipative bracings.” Technical report No. 3, Scientific research programme of relevant national interest “Advanced design and system performance control of steel-concrete composite frames in earthquake-prone areas” – June 2004.
2. Amadio, C., Clemente, I., Ferro, D., Fragiacomo, M., and *Pasquale, D.\** (2003). “Component modeling of semi-rigid composite joints under cyclic loading.” Technical report No. 2, Scientific research programme of relevant national interest “Advanced design and system performance control of steel-concrete composite frames in earthquake-prone areas” – December 2003.
1. Amadio, C., *Clemente, I.\**, Fragiacomo, M., and *Pasquale, D.\** (2003). “Cyclic modelling of joint and seismic analysis of frames with semi-rigid composite joints.” Technical report No. 1, Scientific research programme of relevant national interest “Advanced design and system performance control of steel-concrete composite frames in earthquake-prone areas” –

September 2003.

### **Courses and lectures taught at the undergraduate and postgraduate level**

- 2018, May 18 and 19: lectures on “Design of timber structures according to Eurocodes 5 and 8” within the 2<sup>nd</sup> level Master “Europroject: structural design according to Eurocodes”, University of Roma Tre (12 hours).
- 2016, May 20 and 21, June 16: lectures on “Design of timber structures according to Eurocodes 5 and 8” within the 2<sup>nd</sup> level Master “Europroject: structural design according to Eurocodes”, University of Rome La Sapienza (18 hours).
- 2015, November 6: lecture on “Design of timber structures for fire resistance” within the 2<sup>nd</sup> level Master “Fire Safety and Fire Engineering - SAFEng”, University of Ferrara (4 hours)
- 2015, May 29 and 30: lectures on “Design of timber structures according to Eurocodes 5 and 8” within the 2<sup>nd</sup> level Master “Europroject: structural design according to Eurocodes”, University of Rome La Sapienza (12 hours).
- 2014, September 13: lecture on “Seismic Risk and Vulnerability of Buildings and the Built Environment”, Resilient places and spaces - Design for risk reduction, 6th International School: Awareness and Responsibility of Environmental Risk, Nuoro (Italy) (1 hour).
- 2014, July, 9: course “Use of timber for sustainable housing” within the 2<sup>nd</sup> level Master “Sustainable and Affordable Housing”, University of Sassari (4 hours).
- 2014, June 21, 28 and July, 4: course “Timber engineering” within the 2<sup>nd</sup> level Master “Innovation in Design, Rehabilitation and Control of Structures: Assessment and Retrofitting in Seismic Areas”, University of Roma Tre (12 hours).
- 2014, May 22-23-24, and May 29-30: courses “Timber as a structural material” and “Seismic design of timber structures” within the 2<sup>nd</sup> level Master “Earthquake engineering: Seismic design of construction and mitigation of seismic hazard of existing buildings”, University of Enna ‘Kore’ (28 hours).
- 2014, February 28-March 1: course “Timber Engineering” within the 2<sup>nd</sup> level Master “Innovative Solutions in Architectural Engineering”, University of Pisa (8 hours).
- 2013, December 9: 3-hour lecture on “Timber Engineering” for 4<sup>th</sup> and 5<sup>th</sup> year engineering undergraduate students, University of Bologna, Italy.
- 2012 and 2009: Short course “Timber Engineering” for PhD students, Doctoral School in Structural Engineering, Building and Urban Refurbishment, University of Salerno, Italy (9 hours in 2012 and 6 hours in 2009).
- 2011: 5-hour lecture on “Design of timber arches and timber trusses” and 2-hours tutorial on the same subject for the course “Timber Engineering – Advanced level”, 4<sup>th</sup> year engineering students, Lulea University of Technology, Sweden.
- 2009: 1-hour lecture on “Fire safety in timber buildings”, 2<sup>nd</sup> year undergraduate students, Faculty of Engineering, Luleå University of Technology, Sweden.
- 2009: Lecture on “Structural Design of Ply Shear Walls Multi-Storey Buildings” within the Postgraduate course “Advanced topics in timber housing design”, Doctoral School in Engineering of Civil and Mechanical Structural Systems, University of Trento, Italy (2 hours).
- From 2008 to present: Course on “Timber engineering – Material properties, design process of structural members and connections, ply-shear walls and innovative multi-storey buildings”, 2<sup>nd</sup>

level Master in “Seismic Design of Structures” – MUPAC, Dept. of Civil and Environmental Engineering, University of Trieste, Italy (12 hours).

- 2008: Monographic course “Advances in Timber Engineering” for PhD students, Doctoral School in Engineering of Civil and Mechanical Structural Systems, University of Trento, Italy (20 hours).
- 2008: Timber Structures for 5<sup>th</sup> year undergraduate students at the Faculty of Architecture, University of Sassari, Italy (12 hours) as a part of the Architecture Technology course.
- 2008: invited lecturer for the course “Design Studio 1” (2<sup>nd</sup> year undergraduate students) at the Faculty of Engineering, University of Canterbury, New Zealand (10 hours lecture and 15 hours tutorials).
- 2008, September 4: 2-hours lecture on “Floor solutions for multi-storey buildings” for the course “Steel Design 1” for 3<sup>rd</sup> and 4<sup>th</sup> year undergraduate students, Civil Engineering Technology, Metropolitan State College of Denver, Denver, USA.
- 2008, August 7: 2-hours lecture on “Timber floors” for the course “Steel and timber design” for 2<sup>nd</sup> year undergraduate students, School of Civil and Environmental Engineering, University of Technology, Sydney, Australia.
- 2008, May 12: 2-hours lecture on “Laminated Veneer Lumber (LVL) and Plywood” for the course “Process and Construction Technique” for 1<sup>st</sup> year undergraduate students, Faculty of Architecture “Valle Giulia”, University of Rome “La Sapienza”, Rome, Italy.
- From 2007 to present: Structural Design for 4<sup>th</sup> year undergraduate students at the Faculty of Architecture, University of Sassari, Italy (120 hours), with good teaching assessment from the students (average of 7.5 out of 10 over the last 7 years, and 8.2 out of 10 over the last 2 years).
- 2006, April 11: 2-hours lecture on “Buildings with timber structures” for undergraduate students on structural engineering, University of Trento (Italy).
- 2006, April 11: 2-hours lecture on “Buildings with timber structures” for undergraduate students on architectural engineering, University of Trento (Italy).
- From 2005 to 2007: 3-year teaching of Design Studio 1 (2<sup>nd</sup> year undergraduate students – 20 hours lectures and 36 hours tutorials) and Timber Engineering (4<sup>th</sup> year undergraduate students – 48 hours lectures and tutorials) and 1-year teaching of Advanced Timber Engineering (postgraduate students and practicing engineers (20 hours lectures and tutorials) at the Faculty of Engineering, University of Canterbury (New Zealand).
- From October 2001 to May 2005: Theory and Design of Steel Construction (4<sup>th</sup> year undergraduate students) at the Faculty of Architecture, University of Trieste, Italy (40 hours).
- November 2000: lectures on “Timber Construction” for the course “Structural Design” (4<sup>th</sup> year undergraduate students) at the Faculty of Architecture, University Institute of Architecture of Venice, Italy (8 hours).
- From March 1999 to May 2005: lectures on “Fire Engineering” and “Finite Element Modelling” for the course “Structural Design” (5<sup>th</sup> year undergraduate students), including tutorials, at the Faculty of Engineering, University of Trieste, Italy (30 hours).
- From November 1999 to September 2001: lectures on “Theory of Reinforced Concrete” for the course “Structural Design” (2<sup>nd</sup> year undergraduate students), including tutorials, at the Faculty of Architecture, University of Trieste, Italy (10 hours).

## **Adjunct appointments, fellowships to other institutions, membership to Doctoral schools and Master coursed**

- From 2018 to present: member of the scientific-didactic committee of the 2<sup>nd</sup> level Master “Europroject: structural design according to Eurocodes”, Universities of Roma Tre, La Sapienza, Tor Vergata, Niccolò Cusano, L’Aquila, Chieti-Pescara, Camerino, Politecnica university of Ancona, and Politecnico of Bari.
- From 2017 to present: Associate fellow at CNR IVALSA Trees and Timber Institute (Italy).
- From 2016 to present: member of the academic body of the Doctoral School in Civil Engineering, University of L’Aquila (Italy)
- From 2012 to 2015: Adjunct Associate Professor at the Department of Civil and Natural Resources Engineering, University of Canterbury (New Zealand).
- From 2011 to 2015: Associate fellow at CNR IVALSA Trees and Timber Institute (Italy).
- From 2009 to 2013: member of the academic body of the Doctoral School in Structural Engineering, University of Cagliari (Italy).
- From 2007 to 2009: member of the academic body of the Doctoral School in Architecture, University of Sassari (Italy).
- From 2005 to 2006: member of the academic body of the Doctoral School in Civil Engineering, University of Canterbury (New Zealand).
- From 2001 to 2005 and from 2010 to 2015: member of the academic body of the Doctoral School in Civil and Environmental Engineering, University of Trieste (Italy).

## **Student supervision**

### ***Main supervisor of post-docs (“Assegnisti di Ricerca”)***

4. Maurizio Follesa, “Numerical and analytical modeling of cross-laminated (X-lam) panels”, 7/2014-12/2015, University of Sassari (Italy).
3. Linda Giresini, “Techniques and analysis for the restoration of historic and traditional buildings in the Mediterranean basin”, 5/2014-10/2015, University of Sassari (Italy).
2. Giovanni Rinaldin, “Numerical modelling and design of multi-storey timber buildings in earthquake-prone areas”, 7/2012-6/2017, University of Sassari (Italy).
1. Nicoletta Trulli, “Development of sustainable buildings using low-quality Sardinia timber”, 1/2011-12/2012, University of Sassari (Italy).

### ***Main supervisor of graduated research fellows (“Borse di studio post lauream”)***

9. Giuseppina Porcu, “Seismic analysis of reinforced concrete buildings via pushover analysis”, 11/2014-06/2015, University of Sassari (Italy).
8. Daniela Wrzesniak, “Innovative wall and moment-resisting frames for multi-storey timber buildings: technical implications of the use in Sardinia of new Italian Technical Regulations for Construction”, 2/2014-4/2014, University of Sassari (Italy).
7. Igor Gavric, “Seismic analyses of new timber buildings: implications of the use in Sardinia of the new Italian Technical Regulations for Construction”, 1/2014-6/2014, University of Sassari (Italy).
6. Agnese Menis, “Design of buildings with timber load-resisting systems: implications of the



use in Sardinia of the new Italian Technical Regulations for Construction”, 1/2014-12/2014, University of Sassari (Italy).

5. Giuseppina Porcu, “Seismic analyses of existing buildings: technical and economical implications of the use in Sardinia of new Italian Technical Regulations for Construction”, 11/2013-10/2014, University of Sassari (Italy).
4. Igor Gavric, “Experimental analysis of the cyclic behaviour of timber walls and connections”, 1/2013-12/2013, University of Sassari (Italy).
3. Chiara Bedon, “Implementation in Abaqus software package of an advanced numerical model for non-linear cyclic behaviour of log-house timber wall panels loaded in-plane”, 8/2012-7/2013, University of Sassari (Italy).
2. Agnese Menis, “Numerical analyses of the structural behaviour of cross-laminated timber panels, and comparison with experimental results”, 4/2012-2/2013, University of Sassari (Italy).
1. Ljuba Sancin, “Experimental-numerical behaviour of timber cross-laminated panels loaded in-plane and out-of-plane”, 10/2011-12/2011, University of Sassari (Italy).

#### ***Main supervisor of Ph.D. students***

11. Vincenzo Rinaldi, “Seismic behaviour of mixed reinforced concrete and timber buildings”, 1/2018-12/2020, University of L’Aquila (Italy) (in progress).
10. Martina Sciomenta, “Analytical and numerical analysis of log-haus wall systems”, 1/2016-12/2018, University of L’Aquila (Italy) (in progress).
9. Gabriele Tamagnone, “Seismic design of cross-laminated timber buildings”, 1/2016-12/2018, University of Trieste (Italy) (in progress).
8. Matteo Izzi, “FE modelling of cyclic resistance of timber members and connections”, 1/2014-12/2016, University of Trieste (Italy) (completed with flying colours).
7. Riccardo Riu, “Development of a short procurement chain of the Sardinia wood for the construction sector”, 1/2012-12/2015, University of Cagliari (Italy) (completed with flying colours).
6. Guillaume Hervé Poh’sie, “Ductility of multi-storey timber buildings and seismic mitigation using Tuned Mass Dampers”, 1/2012-12/2014, University of Trieste (Italy) (completed with flying colours).
5. Maurizio Follesa, “Seismic design of timber structures - A proposal for the revision of Chapter 8 of Eurocode 8”, 1/2011-12/2014, University of Cagliari (Italy) (completed with flying colours).
4. Daniela Wrzesniak, “Connection systems in multi storey timber buildings under seismic action”, 1/2011-12/2013, University of Trieste (Italy) (completed with flying colours).
3. Igor Gavric, “Seismic behaviour of cross-laminated timber buildings”, 1/2010-12/2012, University of Trieste (Italy), <http://hdl.handle.net/10077/8638> (completed with flying colours).
2. Agnese Menis, “Fire resistance of laminated veneer lumber (LVL) and cross-laminated timber (XLAM) elements”, 1/2009-12/2011, University of Cagliari (Italy) (completed with flying colours).
1. David Yeoh Eng Chuang, “Behaviour and design of timber-concrete composite floor system”, 1/2007-12/2009, University of Canterbury (New Zealand) (completed with flying colours).

### ***Associate supervisor of Ph.D. students***

12. Giuseppe D'Arenzo, "Seismic behaviour of innovative connectors for cross-laminated timber structures", 1/2017-12/2019, Enna Kore University (Italy) (in progress).
11. Mattia Tiso, "Contribution of the insulation materials on the fire resistance of timber members", 12/2014-12/2017, Tallinn University of Technology (Estonia) (in progress).
10. Fabiana Riparbelli, "The large roof structures made of small sawn timber members. Computational models for the gridshells", 1/2014-12/2016, University of Roma Tre (Italy) (completed with flying colours).
9. Flavio Wanninger, "Post-tensioned timber frame structures", 1/2012-8/2015, ETH Zurich (Switzerland) (completed with flying colours).
8. Nor Hayati Abd. Ghafar, "Dynamic Behaviour of LVL-Concrete Composite Flooring System", 1/2008-12/2014, University of Canterbury (New Zealand) (completed).
7. Giovanni Rinaldin, "Modelling and non-linear analysis of masonry and timber structures", 1/2010-12/2012, University of Trieste (Italy) (completed with flying colours).
6. Manoochehr Ardalany, "Analysis and design of laminated veneer lumber beams with holes and reinforcement around the holes", 1/2009-8/2012, University of Canterbury (New Zealand) (completed with flying colours).
5. Gabriela Tlustochowicz, "Stabilising system for multi-storey beam and post timber buildings", 1/2007-12/2011, Lulea University of Technology (Sweden) (completed with flying colours).
4. Elzbieta Lukaszewska, "Development of prefabricated timber-concrete composite floors", 1/2005-9/2009, Lulea University of Technology (Sweden) (completed with flying colours).
3. Lam Giang To, "3D finite element modelling of time-dependent behaviour of wood-concrete composite beams", 1/2006-12/2008, Colorado State University (USA) (completed with flying colours).
2. Isaia Clemente, "Steel and steel-concrete frames with partially-restrained connections subjected to seismic loads", 1/2002-12/2004, University of Trieste (Italy) (completed with flying colours) (in Italian).
1. Lorenzo Macorini, "Analysis of steel-concrete composite beams at strength and serviceability limit states", 1/2001-12/2003, University of Trieste (Italy) (completed with flying colours) (in Italian).

### ***Associate supervisor of Master students***

1. O'Neill, J.W. (2010). "The fire performance of timber-concrete composite floors." Main Supervisor: A. Buchanan. Master of Engineering in Fire Engineering, University of Canterbury (New Zealand).

### ***Main supervisor of undergraduate students***

17. Sette, A. (Academic Year 2017-18). "Definition of an analytical model for Block-haus walls with openings loaded in-plane, and numerical comparison." Supervisor: M. Fragiaco, Co-supervisor: M. Sciomenta. 3-year Thesis, University of L'Aquila (Italy) (in Italian).
16. Di Diego, B. (Academic Year 2016-17). "Seismic design of X-Lam buildings according to the draft of the new Chapter 8 of Eurocode 8." Supervisor: M. Fragiaco, Co-supervisor: M. Follesa. Diploma Thesis, University of L'Aquila (Italy) (in Italian).
15. Raggiunti, A. (Academic Year 2016-17). "The new proposal of the European standard about timber-concrete composite structures: critical discussion and application of a case of study."

Supervisor: M. Fragiaco. Diploma Thesis, University of L'Aquila (Italy) (in Italian).

14. Murri, L. (Academic Year 2016-17). "The prestress: design of a precast reinforced concrete beam and viscoelastic analysis." Supervisor: M. Fragiaco, Co-supervisor: V. Rinaldi. 3-year Thesis, University of L'Aquila (Italy) (in Italian).
13. Stracquadaino, A. (Academic Year 2016-17). "Fire resistance of a reinforced concrete building and worked example". Supervisor: M. Fragiaco. 3-year Thesis, University of L'Aquila (Italy) (in Italian).
12. Rinaldi, V. (Academic Year 2016-17). "Direct Displacement Based Design of hybrid seismic resistant precast concrete moment resisting frames." Supervisor: M. Fragiaco. Diploma Thesis, University of L'Aquila (Italy) (in Italian).
11. Pesce, V. (Academic Year 2016-17). "Properties and technologies of the FRP composites for the seismic retrofitting". Supervisor: M. Fragiaco. 3-year Thesis, University of L'Aquila (Italy) (in Italian).
10. Nucatola, G. (Academic Year 2016-17). "Serviceability limit state design of a two-bay, three-storey reinforced concrete frame". Supervisor: M. Fragiaco. 3-year Thesis, University of L'Aquila (Italy) (in Italian).
9. D'Amico, G. (Academic Year 2015-16). "Seismic design of lightframe timber buildings in accordance with the new working draft of Section 8 of Eurocode 8". Supervisor: M. Fragiaco. Diploma Thesis, University of L'Aquila (Italy) (in Italian).
8. Berardinucci, B. (Academic Year 2015-16). "Mechanical behaviour of timber-concrete joints with inclined metal fasteners". Supervisor: M. Fragiaco. Co-Supervisors: A. Gregori and S. Di Nino. Diploma Thesis, University of L'Aquila (Italy) (in Italian).
7. Fringuello, L. (Academic Year 2010-11). "Design of a fire safety vedette – Development of a solution made of locally-grown timber". Supervisors: M. Fragiaco and A. Lino. Diploma Thesis, University of Sassari (Italy) (in Italian).
6. Soddu, S. (Academic Year 2009-10). "Development of a sustainable solution for public housing: from masonry to cross-laminated timber structures." Supervisor: M. Fragiaco. Diploma Thesis, University of Sassari (Italy) (in Italian).
5. Paglia, G. (Academic Year 2009-10). "Opportunities for the production a cross-laminated timber structures in Sardinia." Supervisors: M. Fragiaco and G. Maciocco. Diploma Thesis, University of Sassari (Italy) (in Italian).
4. Davies, M. (2007). "Long term behaviour of prestressed LVL members." Supervisor: M. Fragiaco. Final year research project, University of Canterbury (New Zealand).
3. O'Neill, J. (2007). "Performance of connections for concrete-LVL composite systems." Supervisor: M. Fragiaco. Final year research project, University of Canterbury (New Zealand).
2. Stub, M. (2007). "Fire resistance of bolted and screwed connections in timber structures." Supervisors: M. Fragiaco, P. Moss. Final year research project, University of Canterbury (New Zealand).
1. Pettigrew, T. (2005). "Verification of raker shores constructed with New Zealand timber." Supervisor: M. Fragiaco. Final year research project, University of Canterbury (New Zealand).

### *Associate supervisor of undergraduate students*

49. Elia, P. (Academic Year 2014-15). "Terrestrial laser scanning and structure from motion: comparison between two methods applied to the study of the Santo Stefano Protomartire church in Santo Stefano di Sessanio". Main Supervisor: R. Continenza. Diploma Thesis, University of L'Aquila (Italy).
48. Tamagnone, G. (Academic Year 2014-15). "Numerical analysis of X-Lam buildings under seismic loads and validation of design procedures." Main Supervisor: B. Chiaia. Diploma Thesis, Technical University of Turin (Italy).
47. Tiso, M. (Academic Year 2013-14). "Charring behavior of cross laminated timber with respect to the fire protection; comparison of different methods in small, model and large scale with simulations." Main Supervisor: I. Clemente. Diploma Thesis, University of Trieste (Italy) (in Italian).
46. Lisci, E., and Fadda, G. (Academic Year 2013-14). "The design of the new Rubner exhibition hall: Report of an experimental architectural research." Main Supervisor: Josep Miàs. Diploma Thesis, University of Sassari (Italy) (in Italian).
45. Conti, E. (Academic Year 2012-13). "The eco-luxury tourism as a means of landscape exploitation and protection. Design of a luxury eco-lodge for the National Park of La Maddalena, Sardinia (Italy)." Main Supervisor: S. Tischer. Diploma Thesis, University of Sassari (Italy) (in Italian).
44. Rigonat, R. (Academic Year 2010-11). "Fire resistance of cross-laminated floor panels: experimental-numerical analysis." Main supervisor: I. Clemente. Diploma Thesis, University of Trieste (Italy) (in Italian).
43. Gratton, P. (Academic Year 2010-11). "Experimental-numerical investigation of the fire resistance of cross-laminated wall panels." Main supervisor: I. Clemente. Diploma Thesis, University of Trieste (Italy) (in Italian).
42. Tononi, D., and Usardi, I. (Academic Year 2009-10). "On the deflection control of timber floors." Main supervisor: E. Giuriani. Diploma Thesis, University of Brescia (Italy).
41. Sancin, L. (Academic Year 2009-10). "Seismic analysis of a lightframe multi-storey timber building with and without passive base isolation system." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
40. Goina, M. (Academic Year 2009-10). "Fire resistance of cross-laminated solid wall panels loaded in compression." Main supervisor: I. Clemente. Diploma Thesis, University of Trieste (Italy) (in Italian).
39. Murray, R. (2009). "Fatigue analysis of timber-concrete composite connections." Main supervisor: A. Buchanan. 3<sup>rd</sup> year research project, University of Canterbury (New Zealand).
38. Nielsen, T. M. (2009). "Fire resistance of connections in timber structures." Main supervisor: A. Buchanan. 3<sup>rd</sup> year research project, University of Canterbury (New Zealand).
37. Fiori, S. (Academic Year 2008-09). "Experimental-numerical analysis of crosslam floor panels exposed to fire." Main supervisor: I. Clemente. Diploma Thesis, University of Trieste (Italy) (in Italian).
36. Channing-Pearce, K. R. (2008). "Dynamic Characteristics of a Timber-Concrete Composite Floor." Main supervisor: B. Deam. 3<sup>rd</sup> year research project, University of Canterbury (New Zealand).
35. Wallington, C. (2008). "Long term deformation of epoxy glued glulam portal frame knee joints." Main supervisor: A. Buchanan. 3<sup>rd</sup> year research project, University of Canterbury

(New Zealand).

34. De Franceschi, M. (Academic Year 2007-08). "Experimental behavior of LVL-concrete composite connections." Main supervisor: I. Clemente. Diploma Thesis, University of Trieste (Italy).
33. Menis, A. (Academic Year 2007-08). "Numerical and experimental analyses of timber members exposed to fire." Main supervisor: I. Clemente. Diploma Thesis, University of Trieste (Italy) (in Italian).
32. Smith, T. (2006). "LVL rocking shear walls with external dissipater attachment." Main supervisor: S. Pampanin. 3<sup>rd</sup> year research project, University of Canterbury (New Zealand).
31. Grohe, R. (Academic Year 2005-06). "Comparison of different design methods for timber-concrete composite systems." Main supervisors: U. Kuhlmann and J. Schänzlin. Diploma Thesis, University of Stuttgart (Germany).
30. Soddu, S. (Academic Year 2005-06). "Evolution of Japanese domestic architecture: from underground house to the Nagakin capsule tower apartment block." – Main supervisor: P. Rizzi. 3<sup>rd</sup> year Thesis, University of Sassari (Italy) (in Italian).
29. Moschino, D. (Academic Year 2004-05). "Probabilistic analysis of steel-concrete composite frames in earthquake-prone areas." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
28. Predetto Bonvecchio, G. (Academic Year 2003-04) "Church in Val Visdende (province of Belluno, Italy): architectural and structural design." – Main supervisor: F. Benussi. 3<sup>rd</sup> year Thesis, University of Trieste (Italy) (in Italian).
27. Pasticier, L. (Academic Year 2003-04). "Non-linear analysis of a masonry building in seismic area." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
26. Lucia, P. (Academic Year 2003-04). "Structural optimization of a steel-to-glass vault roof using evolutionary multi-objective algorithms." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
25. Ferro, D. (Academic Year 2003-04). "Analysis and cyclic modelling of steel-concrete composite beam-to-column connections." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
24. Pavan, T. (Academic Year 2002-03). "Modelling of partially restrained steel and steel-concrete composite beam-to-column connections using the component method and the Adaptic FE code." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
23. Zanchin, M. (Academic Year 2002-03). "Analysis of shape-resistant steel-to-glass vault roof structures." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
22. Sandri, C. (Academic Year 2002-03). "Laboratory tests and numerical modelling of steel-to-glass connections" Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
21. Zidarič, I. (Academic Year 2002-2003). "Numerical-experimental behaviour of timber-concrete composite beams at strength limit state." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
20. Nogarol, C. (Academic Year 2002-2003). "Numerical-experimental time-dependent behaviour of timber-concrete composite floors." Main supervisor: C. Amadio. Diploma

Thesis, University of Trieste (Italy) (in Italian).

19. Bincoletto, G. (Academic Year 2002-2003). "Evaluation of the moment plastic redistribution domain for steel-concrete composite beams." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
18. Pasquale, D. (Academic Year 2001-2002). "Seismic behaviour of partially restrained steel frames." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
17. Padovan, M. (Academic Year 2001-2002). "Refurbishing the storehouse-silo in Trieste (Italy): analysis of the structural problems." Main supervisor: F. Benussi. Diploma Thesis, University of Trieste (Italy) (in Italian).
16. Fedrigo, C. (Academic Year 2001-2002). "Experimental evaluation of the effective width of steel-concrete composite beams." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
15. Bittesnich, E. (Academic Year 2001-2002). "Storehouse No. 26 in the old harbour of Trieste (Italy): investigation of the structural behaviour of the existing steel and reinforced concrete floors." Main supervisor: F. Benussi. Diploma Thesis, University of Trieste (Italy) (in Italian).
14. Rorato, F. (Academic Year 2000-2001). "Experimental-analytical investigation of timber-concrete composite floors." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
13. Petrovich, F. (Academic Year 1999-2000). "Performance of partially restrained steel frames under repeated earthquake ground motions." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
12. Calzi, S. (Academic Year 1999-2000). "Short- and long-term behaviour of continuous steel-concrete composite beams at serviceability limit state." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
11. Kliman, I. (Academic Year 1999-2000). "Performance of steel structures under repeated earthquake ground motions." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
10. Pozzetto, O. (Academic Year 1999-2000). "Effect of time-dependent phenomena on the behavior of timber-concrete composite beams." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
9. Cimadom, F. (Academic Year 1999-2000). "Passive protection of structures in earthquake-prone regions." Main supervisor: S. Rajgelj. Diploma Thesis, University of Trieste (Italy) (in Italian).
8. Berardinucci, M. (Academic Year 1999-2000). "Durability and strengthening of normal and high-performance concrete structures." Main supervisor: F. Benussi. Diploma Thesis, University of Trieste (Italy) (in Italian).
7. Barazza, G. (Academic Year 1999-2000). "Design of a road tunnel for by-passing the historical center of Muggia (province of Trieste, Italy)." Main supervisor: F. Benussi. Diploma Thesis, University of Trieste (Italy) (in Italian).
6. Fedrigo, F. (Academic Year 1999-2000). "Behaviour of timber-concrete composite beams at serviceability limit state." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
5. Ussai, D. (Academic Year 1999-2000). "Refurbishment of 'Villa Ritter' in Gorizia (Italy) for a special service school." Main supervisor: F. Benussi. Diploma Thesis, University of Trieste

(Italy) (in Italian).

4. Basilisco, G. (Academic Year 1998-1999). "The civic library of Trieste (Italy): refurbishment and fire design." Main supervisor: F. Benussi. Diploma Thesis, University of Trieste (Italy) (in Italian).
3. Macorini, L. (Academic Year 1998-1999). "Short- and long-term analyses of steel-concrete composite beams in cracked phase." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
2. Scarabelli, F. (Academic Year 1998-1999). "Influence of repeated earthquake ground motions on the performance of structures." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).
1. Altinier, T. (Academic Year 1996-1997). "Time-dependent analysis of steel-concrete composite beams using the Age-Adjusted Effective Modulus Method." Main supervisor: C. Amadio. Diploma Thesis, University of Trieste (Italy) (in Italian).

### **Administration duties**

#### ***ANVUR (Italian National Agency for the Evaluation of Universities and Research Institutes)***

- From 10/2015 to 03/2017: Member of the National Expert Panel for the Third Mission of the University (CETM), Research Quality Assessment VQR 2011-14.

#### ***University of L'Aquila (Italy)***

- From 6/2017 to present: Member of the University Committee for the Management of the Emergencies.
- From 1/2017 to 12/2019: Head of the University Committee on the consultancy and external teaching activity of the university staff.
- From 3/2017 to present: Manager of the Laboratory for Material and Structure Testing.
- From 2/2017 to present: Course Coordinator, Bachelor in Civil and Environmental Engineering & Master in Civil Engineering.
- From 02/2016 to present: Chairman of the Dept. Panel for the Third Mission of the University.
- From 11/2015 to 2/2017: Deputy Head of the Department, Dept. of Civil, Construction-Architecture and Environmental Engineering.
- From 11/2015 to present: University Officer for the construction of the new Laboratory for Seismic Engineering Research, which include a six dofs shaking table.
- From 9/2015 to 3/2017: member of the University Teaching Committee.

#### ***University of Sassari (Italy)***

- From 2014 to 2015: reference person for the EU Erasmus mobility programme to and from Riga Technical University, Riga, Latvia.
- September 2013: member of the selection committee of teaching assistants for the laboratories in architectural design.
- From 2013 to 2015: reference person for the EU Erasmus mobility programme to and from Kauno Technologijos Universitetas, Kaunas, Lithuanian.

- From 2009 to 2015: reference person for the EU Erasmus mobility programme to and from Lulea University of Technology, Sweden.

### ***University of Canterbury (New Zealand)***

- 2006: member of the Health and Safety committee, Dept. of Civil Engineering.
- Patron for an International Memorandum Of Understanding between the University of Canterbury and Colorado State University (US), signed in December 2006. Designated representative for the Dept. of Civil Engineering, and contact person for the University of Canterbury, in the aforementioned IMOU.
- March 2006: member of the selection committee for the Civil Engineering Grant (500 NZ\$ for 12 3<sup>rd</sup> professional students).
- May 2006: member of the selection committee for the McCallion Engineering Scholarship (1500 NZ\$).

### **Scholarly activities and organization of conferences and professional courses**

#### ***Reviewer activity***

- For international journals (167 papers): ASCE Journal of Structural Engineering (18 papers), ASCE Journal of Engineering Mechanics (2 papers), Earthquake Engineering and Structural Dynamics (7 papers), Engineering Structures (40 papers), ASCE Journal of Bridge Engineering (3 papers), ASCE Journal of Performance of Constructed Facilities (3 papers), Structural Engineering & Mechanics (5 papers), Material and Structures (6 papers), Journal of Mechanical Sciences (1 paper), Structures and Buildings (10 papers), Steel and Composite Structures (4 papers), Structural Engineering International (5 papers), Journal of Structural Fire Engineering (7 papers), Fire Safety Journal (2 papers), Fire and Materials (1 paper), Wood and Fiber Science Journal (2 papers), Construction and Building Materials (10 papers), Proceedings of the Institution of Civil Engineers (2 papers), Earthquake Spectra (4 papers), Journal of Earthquake Engineering (5 papers), Earthquakes and Structures (2 papers), European Journal of Wood and Wood Products (3 papers), Wood and Fiber Science Journal (2 papers), Fire Technology (2 papers), International Journal of Adhesion and Adhesives (1 paper), Composite Structures (1 paper), Composites Part B: Engineering (1 paper), The Structural Design of Tall and Special Buildings (1 paper), ASCE Journal of Materials in Civil Engineering (1 paper), Construction Materials (1 paper), Journal of Civil Structural Health Monitoring (1 paper), Journal of Civil Engineering and Architecture (2 papers), International Wood Products Journal (1 paper), The Scientific World Journal (1 paper), Chinese Journal of Engineering (1 paper), Journal of Traffic and Transportation Engineering (1 paper), Advances in Civil Engineering (2 papers), Experimental Techniques (1 paper), Australian Journal of Structural Engineering (1 paper), Journal of Solids and Structures (1 paper), Journal of Mechanics of Materials and Structures (1 paper), New Zealand Timber Design Journal (2 papers), Journal of Civil Engineering and Management – Vilnius Gediminas Technical University (1 paper).
- For international conferences (223 abstracts and papers): First South Asia Conference on Earthquake Engineering (SACEE'19) (abstract selection: 2 papers); 5<sup>th</sup> International Network for Timber Engineering Research INTER 2018 (abstract selection: 19 papers); Structures in Fire Conference SiF 18 (abstract selection – 6 papers); 4<sup>th</sup> International Network for Timber Engineering Research INTER 2017 (abstract selection: 16 papers); The 2017 Global Conference on Polymer and Composite Materials (PCM 2017) (1 abstract); 3<sup>rd</sup> International Network for Timber Engineering Research INTER 2016 (abstract selection: 15 papers); 2<sup>nd</sup> International Conference on Civil, Structural and Transportation Engineering (ICCSTE '16) (3 papers); Structures in Fire Conference SiF 16 (abstract selection – 12 papers); The 2<sup>nd</sup> International



Conference on Historic Earthquake-Resistant Timber Frames in the Mediterranean Area (EaRT 2015) (3 papers and 4 abstracts); The 4<sup>th</sup> International Conference on Civil Engineering and Urban Planning (CEUP2015) (2 papers); 2<sup>nd</sup> International Symposium Advances in Civil and Infrastructure Engineering ACE 2015 (4 papers); IASS Working Groups 12 + 18 International Colloquium 2015 (6 abstracts and 5 full papers); 2<sup>nd</sup> International Network for Timber Engineering Research INTER 2015 (abstract selection: 19 papers); Conference Structures in Fire Conference SiF 14 (abstract selection – 10 papers); World Conference on Timber Engineering WCTE 2014 (abstract selection – 15 papers); Meeting forty-five of the Working Commission W18-Timber Structures, CIB, International Council for Research and Innovation (abstract selection – 14 papers); Structures in Fire Conference SiF 12 (abstract selection – 13 papers); World Conference on Timber Engineering WCTE 2012 (abstract selection – 38 papers); World Conference on Timber Engineering WCTE 2010 (abstract selection – 18 papers); 21<sup>st</sup> Australasian Conference on the Mechanics of Structures & Materials ACMSM21, Melbourne (Australia) (2 papers); 19<sup>th</sup> Australasian Conference on the Mechanics of Structures & Materials, Christchurch (New Zealand) (4 papers).

- For non-Italian funding organizations (14 research reports and proposals): Mountain Plains Consortium - A University Transportation Center of the U.S. Department of Transportation, Colorado, USA (3 independent reports on research funded by this organization, and 3 research funds applications); Estonian Science Foundation - postdoctoral research proposal (1); Natural Sciences and Engineering Research Council of Canada, Discovery Grants Program (1 research proposal); Ministry of Education of Greece, Research program "Archimedes III" - 'Enhancement of Research Groups at the Technological Educational Institutes of Greece' (1 preliminary proposal); the Portuguese Foundation for Science and Technology (2 final proposals); Czech Science Foundation (1 final proposal); Swiss National Science Foundation (1 final proposal); COST (1 final proposal).
- For Italian funding organizations (4 research proposals): Italian Ministry of University - Future for the Research FIR 2013 (Pre-selection of 1 Research Proposal); Italian Ministry of University - Scientific Independence of young Researchers Programme SIR (Pre-selection of 2 Research Proposals); University of Catania - Future for the Research FIR 2014 (Selection of 1 Research Proposal).
- For books: Timber Design Guide, Third Edition, edited by Prof. Andy Buchanan, published by New Zealand Timber Industry Federation Inc. (Chapter 16 "Timber beams" and Chapter 17 "Timber columns").
- For the Italian Research Quality Assessment (VQR) – period 2004-2010: 9 papers – period 2011-2014: 7 papers.
- External reviewer of Italian Master Thesis: 2 Theses.

### ***Member of journal editorial boards***

- Member of the Editorial Board of the Journal of Engineering, Civil Engineering Section, Hindawi, from 2018.
- Member of the Editorial Board of the Wood and Fiber Science Journal, The Sheridan Press, from 2017.
- Guest Editor, together with Dr. Barros, H., Adam, J.M., Ferreira, C., Loja, A., Infante Barbosa, J., and Nuno Silvestre, N., of the special issue "Structures Rehabilitation" of Engineering Structures, Vol. 129, 2016.

- Guest Editor, together with Prof. John van de Lindt (Colorado State University), of the special issue ‘Seismic Resistant Timber Structures’ of the ASCE Journal of Structural Engineering, Vol. 142 No. 4, 2016.
- Member of the Editorial Board of Engineering Structures, Elsevier, from 2014.
- Member of the Editorial Board of The Scientific World Journal, Civil Engineering Section, Hindawi, from 2013.
- Member of the Editorial Board of the Chinese Journal of Engineering, Civil Engineering Section, Hindawi, from 2013 to 2018.
- Member of the Editorial Board of the Structural Engineering and Mechanics International Journal, Technopress, from 2013.
- Member of the Editorial Board of the Journal of Civil Engineering and Architecture, David Publishing Company, from 2012.
- Member of the Editorial Board of the Journal of Structural Fire Engineering, Multi-science Publishing Company, from 2009.
- Member of the Peer Review Committee of the New Zealand Timber Design Journal from 2007.

***Member of conference scientific committees***

- Member of the International Scientific Committee of the First South Asia Conference on Earthquake Engineering (SACEE’19), Karachi, Pakistan, February 21-22, 2019.
- Member of the International Scientific Committee of the 3rd International Conference on Protection of Historical Constructions, PROHITECH’17, Instituto Superior Técnico, Universidade de Lisboa, Lisbon (Portugal), July 12-15, 2017.
- Member of the Scientific Committee of the 1<sup>st</sup> International Conference on Construction Materials for Sustainable Future, COMS 2017, Zadar (Croatia), April 19 – 21, 2017.
- Member of the Scientific Committee of the 2<sup>nd</sup> International Conference on Civil, Structural and Transportation Engineering ICCSTE’16, Ottawa (Canada), May 2016.
- Member of the International Advisory Board of the 14<sup>th</sup> World Conference on Timber Engineering WCTE 2016, Vienna, Austria, August 22-25, 2016.
- Member of the International Scientific Committee for the 8<sup>th</sup> International Conference on Wood and Fire Safety 2016, Hotel Patria, Strbske Pleso, Slovakia, May 8-12, 2016.
- Member of The OpenSees Days Committee since 2014.
- Member of the Organizing and Scientific Committee for the International Conference on Recent Advances in Rehabilitation and Sustainability of Structures RehabStructures 2015, Azores (Portugal), June 01-02, 2015.
- Member of the Scientific Committee of the International Conference on Civil, Structural and Transportation Engineering ICCSTE’15, Ottawa (Canada), May 4-5, 2015.
- Member of the International Scientific Committee for the IASS Working Groups 12-18 International Colloquium on Bio-based and Bio-inspired Environmentally Compatible Structures, Tokyo (Japan), April 9-13, 2015.
- Member of the Scientific Committee for the SAIE construction fair, Bologna (Italy) from 2013.
- Member of the Scientific Committee for the ‘Italian Forum of Structural Design’, MADE expo construction fair, Milano (Italy) from 2011 to 2012.

- Member of the International Panel of Reviewers for the 13<sup>th</sup> World Conference of Timber Engineering WCTE 2014, Quebec City (Canada), August 10 – 14, 2014.
- Member of the Scientific Committee for the 8<sup>th</sup> International Conference on Structures in Fire SiF2014, Tongji University, Shanghai (China), June 11 – 13, 2014.
- Member of the Program Committee of the 3<sup>rd</sup> International Conference on Civil Engineering and Urban Planning CEUP2013, Wuhan (China), November 20 – 22, 2013.
- Member of the International Advisory Board for the RILEM Conference ‘Materials and Joints in Timber Structures – Recent Advancement of Technology’, University of Stuttgart, Materials Testing Institute (MPA), Otto-Graf-Institute and Department of Construction Materials, Stuttgart (Germany), October 08 – 10, 2013.
- Member of the International Scientific Committee for the 12<sup>th</sup> World Conference of Timber Engineering WCTE 2012, Auckland (New Zealand), July 16 – 19, 2012.
- Member of the Scientific Committee for the 7<sup>th</sup> International Conference on Structures in Fire SiF2012, ETH Zurich (Switzerland), June 6 – 8, 2012.
- Member of the International Scientific Committee for the 7<sup>th</sup> International Conference on Wood and Fire Safety, Hotel Patria, Strbske Pleso, Slovakia, May 13-16, 2012.
- Member of the International Scientific Committee for the Structural Engineers World Conference SEWC 2011, Como (Italy), April 4-6, 2011, and co-organizer of the Special Session “Design of innovative solutions for timber structures”.
- Member of the Conference Advisory Committee for the 11<sup>th</sup> World Conference on Timber Engineering WCTE 2010, Riva del Garda, Trentino (Italy), June 20-24, 2010.
- Member of the International Scientific Committee for the International Symposium “Timber Structures from Antiquity to the Present”, Istanbul (Turkey), June 25-27, 2009.
- Member of the organizing committee of the 6<sup>th</sup> Workshop on Composite Constructions, Trieste (Italy), November 22-23, 2004.
- Secretary of the Meeting 34 of the Working Commission W18 – Timber Structures, International Council for research and Innovation in Building and Construction (CIB), Venice, August 22-24, 2001.

#### ***Moderator and chairman of national and international conferences***

- Moderator of the special session “Seismic design and behaviour of innovative timber systems” by M. Fragiaco, J. van de Lindt, H. Isoda, 14<sup>th</sup> World Conference on Timber Engineering WCTE 2016, Vienna (Austria), August 22-25, 2016.
- Moderator of the special session “Fire safety of structures made of timber and other bio-based products – COST Action FP1404” by J. Schmid, M. Fragiaco, S. Craft, K. Kagiya, 14<sup>th</sup> World Conference on Timber Engineering WCTE 2016, Vienna (Austria), August 22-25, 2016.
- Moderator of the sessions “H-Traditional and Innovative Materials”, “C-Design Methods and Structural Analysis” and “F-Timber Construction”, 16<sup>th</sup> ANIDIS (Italian National Association of Seismic Engineering) Conference, L’Aquila (Italy), September 13-16, 2015.
- Moderator of the session “Hybrid building systems”, 13<sup>th</sup> World Conference on Timber Engineering WCTE 2014, Quebec City (Canada), August 10-14, 2014.

- Moderator of the session “Timber and Concrete/Cement/Polymer Composites 2”, RILEM Conference “Materials and Joints in Timber Structures – Recent Advancement of Technology”, October 08 – 10, 2013, Stuttgart (Germany).
- Moderator of the sessions “Timber Construction” and “Technical Regulation for Construction, and Passive Base Isolation”, 15<sup>th</sup> ANIDIS (Italian National Association of Seismic Engineering) Conference, Padova (Italy), July 1-4, 2013.
- Moderator of the session “DS 38a: Innovative Seismic Resistant Systems for Multi-Storey Timber Buildings”, 15<sup>th</sup> World Conference on Earthquake Engineering 15WCEE, Lisbon (Portugal), September 24-28, 2012.
- Moderator of the session “b1 - Vulnerability and seismic hazard”, 14<sup>th</sup> ANIDIS (Italian National Association of Seismic Engineering) Conference, Bari (Italy), September 18-22, 2011.
- Moderator of the sessions “Wood Structures 1” and “Wood Structures 2”, Structural Engineers World Conference SEWC 2011, Como (Italy), April 4-6, 2011.
- Moderator of the session “Mechanical Modelling 4”, 11<sup>th</sup> World Conference on Timber Engineering WCTE 2010, Riva del Garda (Italy), June 20-24, 2010.
- Moderator of the session “Fire I”, 10<sup>th</sup> World Conference on Timber Engineering WCTE 2008, Myazaki (Japan), June 2-5, 2008.
- Moderator of the session “Seismic Frames and Fire”, Pacific Structural Steel Conference 2007 “Steel Structures in Natural Hazards”, Wairakei, New Zealand, March 13-16, 2007
- Moderator of the session “Timber Engineering”, 19<sup>th</sup> Australasian Conference on the Mechanics of Structures & Materials, Christchurch (New Zealand), Nov. 29-Dec. 1, 2006.
- Moderator of the session “Architecture III”, 9<sup>th</sup> World Conference on Timber Engineering WCTE 2006, Portland (U.S.A.), August 6-10, 2006.

***Member of University, Professional, Master and PhD examination panels***

- Member of the panel for the selection of a Fixed term researcher (RTDA) in Structural Engineering at the University of Roma Tre, Italy, 2018.
- Member of the panel for the PhD final exam in “Science and Technology: Computer Sciences”, XXX Cycles, University of Camerino, 07/05/2018, Dr. Scozzese – Ph.D. Thesis entitled: “An efficient probabilistic framework for seismic risk analysis of structural systems equipped with linear and nonlinear viscous dampers”.
- Member of the panel for the selection of a Full Professor in Structural Engineering at the Technical University of Turin, Italy, 2017-2018.
- External Reviewer for the Italian National Habilitation 2016 – Examination Sector 07/B2 – Science and Technology of Arboreal and Forest Systems.
- External examiner of the PhD Thesis “A temperature controlled semi-active tuned mass damper using shape memory alloy for vibration reduction applications” by Haoyu Huang, University of Bath, UK, 2017.
- External examiner of the PhD Thesis “Development of steel-timber composite system for large scale construction” by Amirhossein Hassanieh, The University of New South Wales, Australia, 2017.
- External examiner of the PhD Thesis “Nonlinear numerical approach to the analysis of Cross-Laminated Timber” by Agnese Scalbi, Technical University of Ancona, Italy, 2017.

- Member of the panel for the selection of an Associate Professor in Structural Engineering at the University La Sapienza of Rome, Italy, 2016.
- Member of the panel for the PhD final exam in “Structural and Geotechnical Engineering”, XXVIII Cycles, University of Roma La Sapienza, 26/02/2016, Dr. Gaetani – Ph.D. Thesis entitled: “Seismic performance of masonry cross vaults: Learning from historical developments and experimental Testing”.
- External examiner of the PhD Thesis “Insight into seismic behaviour of timber shear-wall systems” by Davide Trutalli, University of Padova, Italy, 2016.
- External examiner of the PhD Thesis “Seismic design of low-damage post-tensioned timber wall systems” by Francesco Sarti, University of Canterbury, New Zealand, November 2015.
- Faculty opponent/external examiner of the PhD Thesis “Aspects of mechanically jointed prefabricated composite floors elements with Cross Laminated Timber” by Nicolas Jacquier, Lulea University of Technology, Sweden, 7/5/2015.
- Member of the panel for the exam of qualification to practice the profession of architect, landscape designer and urban planner, Province of Sassari, Italy, June and November 2014.
- External examiner of the PhD “Thin-topping timber concrete composites” by Jonathan Skinner, University of Bath, UK, 2014.
- External examiner of the Master of Engineering in Fire Engineering “Charring Rates for Different Cross Sections of Laminated Veneer Lumber (LVL)” by Wey Heng (Kevin) Tsai, University of Canterbury, Christchurch, New Zealand, 2010.
- Member of the panel for the exam of qualification to practice the profession of engineer, Province of Trieste, Italy, November 2010.
- Substitute member of the panel for the PhD final exam in “Transportation, Infrastructure and Structural Engineering – XXI cycle”, University of Trieste, 22/4/2009.
- Member of the panel for the PhD final exam in “Modelling, Preservation and Control of Structures and Materials” and “Structural Engineering: Modelling, Preservation and Control of Structures and Materials”, University of Trento, 20-21/3/2009.

#### ***Organization of conferences, seminars and professional courses***

- Host of the Annual Management Committee Meeting of COST Action FP 1404 “Fire safe use of Bio-Based Building products”, L’Aquila (Italy), January 31<sup>st</sup>- February 2<sup>nd</sup>, 2018.
- Course coordinator, Professional Training course “Retrofit techniques of existing timber structures, and design of timber and timber-concrete composite structures”, Trieste, 25-26 January 2018, 8 hours on timber engineering offered to practicing engineers of the Province of Trieste (Italy).
- Co-organizer of the Seminar for continuing professional development and for the students: “Reconstruction: Planning and revitalizing after an earthquake. Comparing the cases of the Umbria, L’Aquila and Emilia with the most recent Japanese experiences.” L’Aquila, 25<sup>th</sup> February 2016.
- Professional course for students and practicing architects “The Principles of Timber Engineering - for Architects”, by Richard Harris, 1-month Visiting Researcher at the University of Sassari, and Massimo Fragiaco, on June 8-9, 2015, in Alghero (Italy).
- Course coordinator, Professional Training course “Retrofit techniques of existing timber structures, and design of timber and timber-concrete composite structures”, Gorizia, 27-28

March 2015, 8 hours on timber engineering offered to practicing engineers of the Province of Gorizia (Italy).

- Course coordinator, Professional Training course “Cycle of seminars on timber structures”, Jesi, 2-3 and 9-10 October 2014, 32 hours on timber engineering offered to practicing engineers of the Province of Ancona (Italy).
- Professional course for students and practicing engineers and architects “Masonry Construction”, by Linda Giresini, Ph.D. student at the University of Pisa, on April 11-13, 2013, in Alghero (Italy).
- Organizer of the First Sino-Italian Workshop “Advance in Timber Engineering”, November 9-10, 2012, Shanghai (China).
- Seminar for the profession “Design of timber structures in accordance with the new version of the technical regulations for construction” within the MADE expo fair, Milan, October 19, 2012.
- Professional course for students and practicing engineers and architects “Solid Timber Construction”, by Gerhard Schickhofer, 20-day Visiting Professor at the University of Sassari, Stephen John, and Andreas Ringhofer, on May 3-5, 2012, in Alghero (Italy).
- Course coordinator, Advanced Professional Training course “Design and execution of timber structures in accordance with the new regulations”, International Centre for Mechanical Sciences CISM, Udine, 9-10 and 16-17 March 2012.
- Seminar for the profession “Design of large span single-storey buildings made of glulam” within the MADE expo fair, Milan, October 6, 2011.
- Professional course for students and practicing engineers and architects “Design of timber structures according to Eurocode 5”, by Hans Larsen, 20-day Visiting Professor at the University of Sassari, and Massimo Fragiaco, on September 2-5, 2011, in Alghero (Italy).
- Host of the meeting forty-four of the Working Commission W18-Timber Structures, CIB, International Council for Research and Innovation, Alghero (Italy), August 28-Sept.1, 2011.
- Professional course for students and practicing engineers and architects “Use of timber as a construction material”, by André Jorissen, 20-day Visiting Professor at the University of Sassari, Giorgio Bignotti, Angelo M. Marchetti, Gabriela Tlustochowicz, and Massimo Fragiaco, on October 14-16, 2010, in Alghero (Italy).
- Course coordinator, together with Prof. B. De Nicolo, of the Professional training course “Structures and infrastructures of civil engineering”, Sassari, March-December 2010, about 120 hours in several modules offered to practicing architects and civil engineers of the Province of Sassari (Sardinia, Italy).
- Professional course for students and practicing engineers and architects “Use of timber as a construction material”, by Ian Smith, 10-day Visiting Professor at the University of Sassari, André Jorissen, Giorgio Bignotti and Massimo Fragiaco, on May 13-15, 2010, in Alghero (Italy).
- Course coordinator, Advanced Professional Training course “Timber structures: design and innovation solutions”, International Centre for Mechanical Sciences CISM, Udine, 29-31 October 2009.
- Professional course for students and practicing engineers and architects “A short course in timber structures” by Hank Bier, 40-day Visiting Professor at the University of Sassari, and Massimo Fragiaco, on October 22-24, 2009, in Alghero (Italy).

- Professional course for students and practicing engineers and architects “Use of timber in architecture” by Julius Natterer, Professor of Timber Engineering, University of Lausanne, Switzerland, 20-day Visiting Professor at the University of Sassari, and Richard Gutkowski, Professor of Civil Engineering, Colorado State University, Fort Collins, USA, 10-day Visiting Professor at the University of Sassari, on May 28-30, 2009, in Alghero (Italy).
- Course coordinator for the professional course “Structural Design of Timber and Composite Floor” for practising engineers and architects, organized by the Institution of Professional Engineers of New Zealand and by the New Zealand Timber Design Society, Auckland (New Zealand), February 4, 2009.
- Professional course for students and practicing engineers and architects “Bridges and viaducts: form and structure. Conceptual design, diagnostic, management, and rehabilitation” by Enzo Siviero, Professor of Structural Design, University of Venice, Italy; Tobia Zordan, Visiting Professor, Tongji University, China; and Bruno Briseghella, Visiting Professor, Fuzhou University, China, on October 3 and 4, 2008, in Alghero (Italy).
- Seminar for students and practicing engineers “Timber and composite floors: traditional and innovative solutions” by Massimo Fragiaco; Nor Hayati Abd. Ghafar, Lecturer at Kolej Universiti Teknologi Tun Hussien Onn, Malaysia; and Elzbieta Lukaszewska, PhD Candidate at Luleå University of Technology, Sweden, on October 2, 2008, in Alghero (Italy).
- Seminar for students and practicing engineers and architects “A way to sustainable architecture by new technologies for engineered timber structures” by Julius Natterer, Honorary Professor EPHL, Lausanne (Switzerland), on September 30, 2008, in Alghero (Italy).
- Seminar for students and practicing engineers “Structural fire resistance” by Dr. Jeremy Chang, assistant lecturer at the University of Canterbury, New Zealand, on May 7, 2008, in Alghero (Italy).
- Course coordinator for the professional course “Structural Design of Timber Floors” for practising engineers and architects, organized by the University of Canterbury, Christchurch (New Zealand), July 25-26, 2007.
- Seminar for practicing engineers “Concrete-timber composite floor”, by Massimo Fragiaco and Elzbieta Lukaszewska, PhD Candidate at Luleå University of Technology, Sweden, on November 28, 2006, in Christchurch (New Zealand).

## **Activity in national and international working groups, and membership in professional associations**

### ***Activity as representative in Italian and international committees***

- From 2017 to 2019: Member of the Project Team SC8.T2 “Material dependent sections of EN 1998-1” for the revision of the Eurocode 8 – Part 1, as an answer to the Mandate M/515 Phase 2.
- From 2015 to 2018: Member of the Project Team SC5.T2 on the preparation of a new Eurocode part on timber-concrete composite, as an answer to the Mandate M/515 Phase 1.
- From 2015 to 2018: Chairman of the Working Group WG3: “Timber Structures” within CEN/TC 250/SC 8 “Eurocode 8: Design of structures for earthquake resistance”.
- From 2014 to 2015: Chairman of the Working Group WG8: “Seismic Resistance” within CEN/TC 250/SC 5 “Eurocode 5: Design of Timber Structures”.

- From 2014 to 2018: Italian delegate, member of the Management Committee, and Vice-chairman of the COST Action FP1404 “Fire safe use of bio-based building products”.
- From 2014 to 2018: Italian delegate and member of the Management Committee of the COST Action FP1402 “Basis of structural timber design – from research to standards”.
- From 2014 to present: Member of the Working Group WG2: “Timber-Concrete Composites” within CEN/TC 250/SC 5 “Eurocode 5: Design of Timber Structures”.
- 2011: Member of the Italian working group for the preparation of the ‘Guidelines for timber buildings with four or more storeys’ (Linee Guida per edifici con sistemi costruttivi in legno a 4 o più piani (DPR 380/01 art 52)) and ‘Guidelines for evaluating the compliance of timber products and structural systems to the Italian Technical Regulation of Construction’ (Linee Guida per la certificazione dell’idoneità tecnica all’impiego di materiali e prodotti innovativi in legno per uso strutturale (DM 14.01.08 – Norme Tecniche per le costruzioni, paragrafo 11.1, lettera C)).
- From 2011 to 2015: Italian delegate and member of the Management Committee of the COST Action FP1004 “Enhanced mechanical properties of timber, engineered wood products and timber structures”.
- From 2011 to present: Representative for the Timber part (Liaison Officer) within CEN/TC 250/SC 8 “Eurocode 8: Design of structures for earthquake resistance” and the corresponding Italian mirror committee U7308 “Seismic-resistant structures”.
- From 2011 to present: Member of the International Working Group “Fire Safe Use of Wood”.
- From 2010 to present: Italian delegate within CEN/TC 250/SC 5 “Eurocode 5: Design of Timber Structures” and the corresponding Italian mirror committee U7305 “Timber Structures”.
- From 2008 to 2010: Italian delegate and member of the Management Committee of the COST Action E55 “Modelling of the performance of timber structures”.
- From 2008 to 2010: Member of the Italian working group “Timber Structures – Technical Rules for Construction 2008”.
- From 2006 to present: Member of the Working Commission W18-Timber Structures, CIB, International Council for Research and Innovation.
- New Zealand delegate at the meeting Number 025 of the Committee TM-001 “Timber Structures”, Australia/New Zealand Standards, Melbourne.
- New Zealand observer for the 19<sup>th</sup> ISO/TC 165 “Timber Structures” meeting in Rotorua, New Zealand, 1-3/11/2005.
- From 2000 to 2001: Italian delegate for the “Cost Action E5 Timber Frame Building System”.

#### ***Membership and activities in professional associations***

- Member of the New Zealand Timber Design Society during the period 2005-2009, and member of the management committee during the period 2006-2007 – No. 1008347.
- Member of the New Zealand Society for Earthquake Engineering Inc., and NZ Structural Engineering Society Inc., from 2005 to 2007 – No. 1008347.
- Registered Professional Engineer, Province of Trieste, Italy, since 21/05/1992 – No. 1762.



## **Invited speaker at conferences, seminars and professional courses**

### ***Invited speaker at conferences (5)***

- Key-note speaker, “A framework for seismic analysis of timber structures”, ECCOMAS Thematic Conference on “Computational Methods in Wood Mechanics - from Material Properties to Timber Structures - CompWood 2017”, Vienna, Austria, June 7-9, 2017.
- Key-note speaker, “Seismic design of cross-laminated timber buildings according to Eurocode 8”, 16<sup>th</sup> International Symposium of the Macedonian Association of Civil Engineers, Ohrid, Macedonia, October 1-3, 2015.
- Key-note speaker, “Innovative uses of Mediterranean wood for products and energy”, Scientific Seminar: “Profitable wood production in the Mediterranean: future or fantasy?”, EFIMED Week and INFORM-LIFE Final Conference, Kavala, Greece, November 5-7, 2014.
- Invited speaker, “Seismic behaviour of cross-laminated timber buildings: numerical modelling and design provisions”, COST Action FP1004 Conference on State-of-the Art in Cross Laminated Timber Manufacture, Design and Use, Graz, Austria, May 21-22, 2013.
- Invited speaker, “Wood-concrete composite beams: new regulations and state-of-the art” at the 6<sup>th</sup> Workshop on Composite Construction, Trieste (Italy), November 22-23, 2004, organized and coordinated by Prof. C. Amadio.

### ***Invited speaker at seminars, workshops and professional courses (64)***

- 8-hour lectures on “Seismic resistance of timber structures” within the course “Advanced design and analysis of structures for earthquake resistance”, Gorizia, 18-19 January 2016, offered to practicing engineers of the Province of Gorizia (Italy).
- 8-hour lectures on “Retrofit techniques of existing timber structures, and design of timber and timber-concrete composite structures”, Trieste, 25-26 January 2016, offered to practicing engineers of the Province of Trieste (Italy).
- Presentation on “A framework for non-linear seismic analysis of timber structures”, Fuzhou (China), July 1, 2017, within the International Workshop “Holistic Approach to Sustainable New and Existing Structures and Bridges” organized by Fuzhou University.
- Lecture on “Seismic resistant and sustainable timber solutions”, Potenza (Italy), April 20, 2016, panel discussion on “Seven years after L’Aquila’s earthquake: what has been done and what will be done. Comparison between institutions and enterprises.”
- 2-hour lecture on “Structural aspects and seismic design of timber structures”, Munich, Germany, April 2, 2016, within the Hochschuldialog mit Südeuropa - International Workshop on Traditional and Innovative Approaches in Seismic Design.
- 2-hour lecture on “Design of Timber Structures”, Roma, 8 March 2016, as a part of a professional course ‘Programme for continuing education development: The Italian technical regulation for construction’ offered to practicing engineers of the Province of Rome (Italy).
- 4-hour lecture on “Introduction of timber as a construction material, mechanical and physical properties of timber, and construction systems”, Roma, 28 January 2016, as a part of a professional course ‘Design of timber structures’ offered to practicing engineers of the Province of Rome (Italy).
- 12-hour lecture on “Building with wood and straw – Technologies” within the Professional Training course “Eco-friendly solutions for the re-use of the real estate”, Sassari, October 21 and 22, 2015.

- 8-hour lectures on “Retrofit techniques of existing timber structures, and design of timber and timber-concrete composite structures”, Gorizia, 27-28 March 2015, offered to practicing engineers of the Province of Gorizia (Italy).
- 2-hour lecture on “Mechanical properties of timber and design process of timber structures” within the Professional Training course “Timber buildings in earthquake-prone regions: design and building construction management”, Teramo (Italy), 13 November 2014.
- 1-hour lecture on “The use of locally-grown timber in construction: an opportunity of development for Sardinia” within the seminar: “Forestry technology and mechanization: the teaching, needs and research perspectives in Sardinia”, Nuoro (Italy), 10 October 2014.
- 4-hour lecture on “Mechanical properties of timber and design process of timber structures” within the Professional Training course “Cycle of seminars on timber structures”, Jesi (Italy), 2 October 2014.
- 4-hour lecture on “Timber-timber and timber-concrete composite structures” within the Professional Training course “Cycle of seminars on timber structures”, Jesi (Italy), 3 October 2014.
- 12-hours lecture on “Building with wood and straw – Technologies” within the Professional Training course “Eco-friendly solutions for the re-use of the real estate”, Sassari, July 11, 17 and 18, 2014.
- 3-hours lecture on “Modelling of cross-laminated (X-lam) timber buildings” within the Advanced Professional Training course “Design and modelling of timber buildings”, Engineer Professional Association of the Province of Udine (Italy), July 5, 2014.
- Lecture on “Wood as structural material and its performances” for practicing engineers and architects, within the seminar for the profession “High energy-efficient living solutions: Materials, performances and quality for sustainable and safe housing”, Campobasso, Italy, January 29, 2014.
- Lecture on “Seismic resistance of tall timber buildings” for practicing engineers and architects, within the seminar for the profession “Wooden skyscrapers”, Ljubljana, Slovenia, October 24, 2013.
- Lecture on “Capacity based design of timber buildings” for practicing engineers and architects, within the seminar for the profession “Timber and earthquake: seismic resistance timber buildings”, SAIE expo fair, Bologna, Italy, October 16, 2013.
- Lecture on “Construction systems for multi-storey timber buildings: prefabrication and new trends” for practicing engineers and architects, within the seminar for the profession “Multi-storey timber buildings”, MADE expo fair, Milan, Italy, October 4, 2013.
- Seminar “Seismic behavior of cross-laminated timber buildings: numerical modeling and design provisions” for undergraduate and postgraduate students, staff members and practising engineers, University of British Columbia, Vancouver, Canada, August 9, 2013.
- Seminar “Wood building systems – An international perspective” for undergraduate and postgraduate students, staff members and practising engineers, University of British Columbia, Vancouver, Canada, July 30, 2013.
- Lecture on “Basics of design, the earthquake and the ‘Flegrea’ region” for practicing engineers and architects, within the seminar for the profession “The new city of the science and the ‘Flegrea’ region: New timber construction systems and sustainable solutions”, Naples, Italy, June 21, 2013.

- Lecture on “Multi-storey timber buildings: seismic resistant and zero kilometers solutions” for practicing engineers and architects, within the seminar for the profession “Design and construction of seismic resistant buildings: technologies, materials and load resisting systems”, Smart Village in Tour, Cagliari, March 7, 2013.
- Lecture on “Seismic design of timber structures: ductility, energy dissipation, and overstrength” for practicing engineers, within the seminar for the profession “Design of timber structures in accordance with the new version of the technical regulations for construction”, MADE expo fair, Milan, October 19, 2012.
- Seminar “Use of timber in construction” for under-, postgraduate students and staff members, Universiti Tun Hussein Onn Malaysia, May 30, 2012.
- Seminar “Advances in Timber Engineering” for postgraduate students and staff members, Indian Institute of Technology, Kharagpur, February 14, 2012.
- 4-hours lecture on “Timber-timber and timber-concrete composite structures” within the Advanced Professional Training course “Design and execution of timber structures in accordance with the new regulations”, International Centre for Mechanical Sciences CISM, Udine, 17 March 2012.
- Lecture on “Seismic and fire resistance of multi-storey timber buildings” as a part of the Italian forum of structural design within the MADE expo fair, Milan, October 7, 2011.
- Lecture on “Innovative systems for multi-storey timber buildings” as a part of the seminar for the profession “Tall dwellings. Energy-efficient multi-storey timber buildings: regulations, design constraints, and feasibility in Italy and abroad” within the MADE expo fair, Milan, October 7, 2011.
- Lecture on “Traditional and innovative structural systems for single-storey timber buildings” as a part of the seminar for the profession “Design of large span single-storey buildings made of glulam” within the MADE expo fair, Milan, October 6, 2011.
- Lecture on “Advanced models for seismic analyses of timber buildings” for practicing engineers within the “Grazer Holzbau-Fachtagung – 9. Gra FHT’11”, Workshop on crosslam construction, Technical University of Graz, Austria, September 29, 2011.
- Seminar “Seismic behavior of cross-laminated buildings” for postgraduate students and staff, University of Canterbury, Christchurch, New Zealand, August 12, 2011.
- Seminar on “Fire behavior of cross-laminated timber panels” for postgraduate students, Master in Fire Engineering, University of Canterbury, Christchurch, New Zealand, July 22, 2011.
- 8-hour lecture on “Limit State Design” within the Professional training course “Structures and infrastructures of civil engineering”, Sassari, April 20, 2010.
- 8-hour lecture on “Limit State Design” within the Professional training course “Structures and infrastructures of civil engineering”, Sassari, May 6 and 8, 2010.
- 8-hour lecture on “Limit State Design” within the Professional training course “Structures and infrastructures of civil engineering”, Olbia, May 7, 2010.
- 8-hour lecture on “Timber Engineering” within the Professional training course “Structures and infrastructures of civil engineering”, Cagliari, January 26, 2010.
- Lectures on “Mechanical properties of timber”, “Innovative materials. Single-storey timber buildings”, and “Multi-storey timber buildings with lightframe and hybrid structure”, CISM course “Timber structures: design and innovation solutions”, Udine, 29-31 October 2009.

- Seminar entitled “Timber engineering research – An international perspective” for postgraduate and staff members, Luleå University of Technology, Sweden, September 29, 2009.
- Seminars entitled “Design of timber connections according to the Eurocode 5” and “Multi-storey timber buildings”, for practicing engineers and architects, organized by Luleå University of Technology, Sweden, September 28, 2009.
- Seminar entitled “Development of sustainable buildings using locally grown timber” for postgraduate students and practicing engineers, organized by the Forestry Association of Sardinia, Cagliari (Italy), April 17, 2009.
- Seminar entitled “Progress of construction techniques in timber engineering” for undergraduate, postgraduate students and practicing engineers organized by the University of Brescia (Italy), March 18, 2009.
- Seminar entitled “Use of timber in architecture” for postgraduate students organized by the University of Tokyo, Tokyo (Japan), December 10, 2008.
- Lectures on “Seismic timber design” and “Floor timber design” at the Timber Design Seminars for practicing engineers and architects organized by the New Zealand Timber Design Society in Tauranga, July 23, 2008 (New Zealand).
- Lectures on “Seismic timber design” and “Floor timber design” at the Timber Design Seminars for practicing engineers and architects organized by the New Zealand Timber Design Society in Napier, July 24, 2008 (New Zealand).
- Seminar entitled “Use of timber in construction” for students, practicing engineers and architects organized by the University of Cagliari (Italy), April 21, 2008.
- Lecture on “Innovative multi-storey timber buildings” at the Timber Design Seminars for practicing engineers and architects organized by the New Zealand Timber Design Society in Wellington, November 22, 2007 (New Zealand).
- Lecture on “Innovative multi-storey timber buildings” at the Timber Design Seminars for practicing engineers and architects organized by the New Zealand Timber Design Society in Christchurch, November 23, 2007 (New Zealand).
- Lecture on “Concrete-timber composite floors” at the Timber Design Seminars for practicing engineers and architects organized by the New Zealand Timber Design Society in Rotorua, July 5, 2007 (New Zealand).
- Lecture on “Concrete-timber composite floors” at the Timber Design Seminars for practicing engineers and architects organized by the New Zealand Timber Design Society in Auckland, July 4, 2007 (New Zealand).
- Lecture on “Concrete-timber composite floors” at the Timber Design Seminars for practicing engineers and architects organized by the New Zealand Timber Design Society in Wellington, November 15, 2006 (New Zealand).
- Lecture on “Concrete-timber composite floors” at the Timber Design Seminars for practicing engineers and architects organized by the New Zealand Timber Design Society in Christchurch, November 16, 2006 (New Zealand).
- Seminar “A finite element model for collapse and long-term analysis of wood-concrete composite beams” organized by Prof. Gutkowski for postgraduate students at Colorado State University, Fort Collins, Colorado, USA on May 28-29, 2007.
- Seminar entitled “Timber buildings” for practicing engineers and architects organized by the University of Ljubljana (Slovenia), February 1, 2007.

- Seminar entitled “Timber buildings” for practicing engineers and architects organized by the University of Sassari (Italy), January 24, 2007.
- Seminar on “Concrete-timber composite floors” for practicing engineers on November 28, 2006 in Christchurch (New Zealand).
- Two lectures at the Workshop for practicing engineers and architects “Developments in Wood-Concrete Bridge Construction”, organized by Prof. Gutkowski and sponsored by the Mountain Plains Consortium - A University Transportation Center of the U.S. Department of Transportation, August 14-15, 2006, Colorado State University, Fort Collins, Colorado, USA.
- Seminar on “Buildings with timber structures” for undergraduate and postgraduate students at the University of Naples “Federico II” (Italy), April 28, 2006.
- Seminar on “How to build with timber” for students and practicing engineers and architects at the University of Trieste (Italy), April 21, 2006.
- Seminar on “Use of timber and engineered materials for multi-storey buildings” for postgraduate students at the University of Ljubljana (Slovenia), April 14, 2006.
- Seminar on “Seismic resistant multi-storey timber buildings” at IVALSA Trees and Timber Institute, CNR, San Michele all’Adige (Italy), April 10, 2006.
- Lecture on “Using LVL in multi-level building and flooring” at the Workshop on “Strategies for Growing High Wood Quality Trees and, Processing and Utilisation of Wood Products”, Wood Technology Research Centre, University of Canterbury, Christchurch (New Zealand), February 2, 2006, organized by Prof. Shusheng Pang.
- Lecture on “Wood-concrete composite beams: issues under research” at the 1<sup>st</sup> Workshop on “Wood-Concrete Composite Structures”, Innsbruck (Austria), October 1, 2004, organized and coordinated by Prof. M. Flach.
- Lecture on “Modelling of timber-concrete floor structures”, Workshop “Seismic behaviour of timber buildings. Timber construction in the new millennium” held in Venice, September 28-29, 2000 organized and coordinated by A. Ceccotti and S. Thelandersson.

### **Research grants, contracts and sponsorships**

**(Exchange rate: 1 USD=0.77 €, 1 NZD=0.64 €, 1AUD=0.81 €, 1 GBP=1.24 €)**

#### ***Summary***

Total amount of research grants secured as PI:	1,358,800 €
Total amount of funds on which he has worked as a researcher or key researcher:	6,986,000 €

#### ***Detailed list***

40. University of L’Aquila’s coordinator for the research project: “RELUIS-Research line: Timber Structures – WP 3: Cross-laminated timber panels: reduction of the seismic vulnerability of existing buildings and regulation updating for new buildings”, funded by the Italian Department for Civil Protection, 15,300 €, 2017-2018 (2 years).
39. University of L’Aquila’s coordinator for the research project: “RELUIS-Research line: Timber Structures – WP3: Xlam buildings and WP4: Timber buildings with special systems and/or protective devices”, funded by the Italian Department for Civil Protection, 8,500 €, 2016 (1 year).

38. University of L'Aquila's coordinator for the research project: "The short supply chain in the biomass-timber sector: procurement, traceability, certification and Carbon Dioxide sequestration", funded by the Italian Ministry of the University within the Research Projects of National Interest PRIN 2015, national coordinator Prof. G. Scarascia Mugnozza, Tuscia University, 66,582 €, 2017-2019 (3 years).
37. Principal Investigator, "Development of glulam and X-lam products made of Sardinia wood", funded by the Sardinia Region to the Universities of Sassari and Cagliari within the "Funds for Basic Research Projects", 151,360 €, 2016-2018 (3 years).
36. Principal Investigator, "Analysis and retrofitting techniques of historical and traditional buildings within the Mediterranean basin", funded by the Centre for Logistics Systems of the University of Pisa, Italy, for 12,000 €, 2014-2015.
35. University of Sassari's coordinator for the research project: "RELUIS-Research line: Timber Structures – WP4: Timber buildings with special systems and/or protective devices", funded by the Italian Department for Civil Protection, 18,500 €, 2014-2015 (2 years).
34. Principal Investigator, "Design of cross-lam multi-storey timber buildings for fire safety", funded by the IVALSA Trees and Timber Institute, CNR, Italy, for 30,000 €, and by the University of Trieste, Italy, for 30,000 €. Funds are being used to pay a Ph.D. grant to Matteo Izzi at the Dept. of Civil and Environmental Engineering of the University of Trieste, 2014-2016.
33. Principal Investigator, "Sustainable use of Sardinia forests for production of timber panels and bio-energy", funded by Sardegna Ricerche, the Research Association of Sardinia, Cluster Research Programme: "Materials for Sustainable Construction", 191,304.7 €, 4/2014-4/2016 (24 months).
32. Principal Investigator, "Determination of a procedure for seismic design of log house timber buildings with 'Blockbau' system, and assessment of the seismic performance of multi-storey light-frame timber buildings", funded by Rubner Haus Spa, 75,000 €, 2012-2013 (18 months).
31. University of Sassari's coordinator for the research project: "The application in Sardinia of the new Italian technical rules for Construction", funded by the Sardinia Region to the Universities of Sassari and Cagliari within the "Funds for Research Projects on Selected Topics of Strict Regional Interest", 50,000 €, 2012-2015 (36 months).
30. Obtained a grant of 900 € from the University of Sassari for visiting Luleå University of Technology, teaching mobility, LLP Erasmus programme 2011/12.
29. Achieved a contribution of 6,000 € from 'Fondazione Banco Sardegna' and 3500 € from seven private companies for the sponsorship of the meeting forty-four of the Working Commission W18-Timber Structures, CIB, International Council for Research and Innovation, Alghero (Italy), August 28-Sept.1, 2011.
28. Principal Investigator, "Numerical modelling of timber elements and timber structures as part of the Cornet project OptimberQuake", Subcontract of the University of Kassel (Germany) within the Cornet Research project 'OptimberQuake: Optimization of Timber Multi-storey Buildings against Earthquake impact', 80,000 €, 2011-2013 (2 years).
27. University of Sassari's coordinator for the research project: "RELUIS-Seismic design of new timber buildings", funded by the Italian Department for Civil Protection, 8,500 €, 2010-2013 (3 years).
26. Principal Investigator, "Experimental-analytical behaviour of multilayer timber panels under in-plane and out-of-plane loading", funded by the Sardinia Region to the Universities of Sassari and Cagliari within the "Funds for Basic Research Projects", 70,000 €, 2010-2011 (18 months).

months).

25. Principal Investigator, “Seismic resistance of multi-storey glulam buildings”, funded by Federlegno, the Italian Federation of Timber Constructors, and by three timber enterprises, for 24,150 €, and by the University of Trieste, Italy, for 24,150 €. Funds used to pay a Ph.D. grant to Daniela Wrzesniak at the Dept. of Civil and Environmental Engineering of the University of Trieste, 2011-2013.
24. Principal Investigator, “Development of sustainable buildings using locally grown timber in Sardinia”, 50% co-fund of a research fellowship, University of Sassari, 18,905.13 €, 2010-2011.
23. Principal Investigator, “Structural analysis of cross-lam multi-storey buildings”, funded by the IVALSA Trees and Timber Institute, CNR, Italy, for 60,000 €, and by the University of Trieste, Italy, for 60,000 €. Funds used to pay a Ph.D. grant to Igor Gavrič at the Dept. of Civil and Environmental Engineering of the University of Trieste, 2010-2012, and a Ph.D. grant to Pohsie Guillaume Herve at the Dept. of Civil Engineering and Architecture of the University of Trieste, 2012-2014.
22. Grants for Visiting Professorships at the University of Sassari for Prof. J. Natterer (20 days in 2009 - 4000 €), Prof. R. Gutkowski (10 days in 2009 - 6000 €), Mr. Hank Bier (40 days in 2009 - 8000 €), Prof. Ian Smith (10 days in 2010 - 8000 €), Prof. André Jorissen (20 days in 2010 - 5000 €), Dr. David Yeoh (20 days in 2011 - 4000 €), Prof. Hans Larsen (20 days in 2011 – 5300 €), Prof. Gerhard Schickhofer (20 days in 2012 – 5300 €), Prof. Richard Harris (30 days in 2014– 3500 €) – Funds paid by the University of Sassari.
21. Obtained a grant of 1200 € from the University of Sassari for visiting Luleå University of Technology, OM mobility, LLP Erasmus programme 2008/09.
20. Co-Principal investigator, “Development of sustainable buildings using locally grown timber in Sardinia”, funded by the Forest Association of Sardinia to the Universities of Sassari and Cagliari, 95.879,15 €, 2009-2011.
19. University of Sassari’s coordinator for the Research Project: “Building with Environmentally Sustainable Structural Timber” funded by the European Union, International Research Staff Exchange Scheme, Call: FP7-PEOPLE-IRSES-2008, 28,800 €, 2009-2012.
18. Key researcher, “Structural timber building systems”, 10,000,000 NZD, Structural Timber Innovation Company, Christchurch, New Zealand, 2009-2013.
17. Granted 4,613 AUD in 2007 for the purchase of an instrumented impulse hammer for dynamic testing, Department of Civil Engineering, University of Canterbury, Christchurch, New Zealand.
16. Granted 10,315 USD in 2007 for the purchase of a long stroke shaker for dynamic testing, Department of Civil Engineering, University of Canterbury, Christchurch, New Zealand.
15. Principal Investigator, “Performance of composites of concrete slab and LVL beams at strength and serviceability limit state”, 3,000 NZD to support Mr David Yeoh, Ph.D. candidate, Department of Civil Engineering, University of Canterbury, Christchurch (New Zealand), June 2006 to May 2009.
14. Principal Investigator, “Dynamic response of concrete-timber composite floor systems”, 1,373 NZD to support Ms Nor Hayati Abd. Ghafar, Ph.D. candidate, Department of Civil Engineering, University of Canterbury, Christchurch (New Zealand), January 2007 to December 2009.
13. Key researcher, “Innovative engineered timber building systems for non residential applications”, 609,985 AUD, Forest and Wood Products Research and Development

Corporation, University of Technology of Sydney (Australia), and University of Canterbury (New Zealand), January 2007 to December 2008.

12. Key researcher, “LVL-concrete composite floor system”, 56,362 NZD, Carter Holt Harvey, University of Canterbury (New Zealand), June 2006 to June 2009.
11. Principal investigator, “Long-term behaviour of epoxy-glued connection between glulam members”, 18,130 NZD, Building Research, 1,000 NZD plus material, McIntosh Laminates, University of Canterbury (New Zealand), November 2006 to March 2009.
10. Principal investigator, “Performance of connections for composite concrete and LVL systems”, 2,000 NZD, Department of Civil Engineering, University of Canterbury (New Zealand), September 2006 to January 2007.
9. Principal investigator, “Long-term behaviour of prestressed LVL members”, 7,000 + 2,450 NZD, Department of Civil Engineering, and 6,300 NZD Carter Holt Harvey, University of Canterbury (New Zealand), November 2005 to October 2007.
8. Co-principal investigator, “Experimental and numerical validation of innovative connections for LVL (Laminated Veneer Lumber) frame systems”, 40,000 NZD, Carter Holt Harvey, University of Canterbury (New Zealand), October 2005 to March 2006.
7. Researcher, “Damage and seismic response evaluation of partially-restrained composite frames with or without dissipative bracings”, 23,700 €, Scientific Research Programme of Relevant National Interest PRIN 2004, University of Trieste (Italy), 2004.
6. Achieved a contribution of 1,000 € from a private company, Tecnaria SpA (Italy), for the sponsorship of the 6<sup>th</sup> Workshop on Composite Constructions, held at the University of Trieste (Italy), November 22-23, 2004.
5. Researcher, “Experimental tests on glass-steel joints”, 6,000 €, Permasteelisa Group, University of Trieste (Italy), 2003.
4. Researcher, “Advanced design and system performance control of steel-concrete composite frames in earthquake-prone areas”, 25,700 €, Scientific Research Programme of Relevant National Interest PRIN 2002, University of Trieste (Italy), 2002.
3. Principal Investigator, “Short- and long-term behaviour of wood concrete composite beams”, GBP 79,000 (1<sup>st</sup> phase) and 64,000 (2<sup>nd</sup> phase), EC TMR Large Scale Facilities Programme, Building Research Establishment, U.K., 2001-2003.
2. Principal Investigator, “Short- and long-term behaviour of timber-concrete composites”, 9,000 €, Young Researcher Project, University of Trieste (Italy), 2000.
1. Principal Investigator, “Short- and long-term behaviour of mechanical connections between wood and concrete”, 3,400 €, Tecnaria SpA, University of Trieste (Italy), 2000.

### **Network of national and international partnerships**

Research cooperation is currently ongoing with the Institutions listed in the following (in brackets the main contact persons):

- Eindhoven Technical University, The Netherlands (Prof. André Jorissen and Prof. Ad Leijten).
- SP Swedish National Testing and Research Institute, Stockholm, Sweden (Dr Joachim Schmid and Dr. Birgit Östman).
- VTT, Espoo, Finland (Dr. Stefania Fortino).
- University of Stuttgart, Stuttgart, Germany (Prof. Ulriche Kuhlmann and Dr. Jörg Schänzlin).



- University of Kassel, Kassel, Germany (Prof. Werner Seim).
- Technical University of Graz, Graz, Austria (Prof. Gerhard Schickhofer).
- ETH Zurich, Switzerland (Prof. Andrea Frangi).
- Contemporary Building Design (CBD), Celje, Slovenia (Dr. Bruno Dujic).
- Imperial College, London, U.K. (Dr. Lorenzo Macorini).
- IVALSA Trees and Timber Institute, CNR, San Michele all'Adige (Trento) and Sesto Fiorentino, Italy (Dr. Andrea Polastri, Giovanna Bochicchio, Dr. Michele Brunetti, Dr. Michela Nocetti).
- University of Cagliari, Italy (Prof. Barbara De Nicolo, Dr. Giovanna Concu, Dr. Monica Valdes)
- University of Trieste, Italy (Prof. Claudio Amadio, Prof. Natalino Gattesco, Dr. Chiara Bedon).
- University of Brescia, Italy (Prof. Ezio Giuriani and Dr. Giovanni Metelli).
- University of Camerino, Italy (Dr. Alessandro Zona).
- University of Pisa, Italy (Prof. Mauro Sassu).
- University of Canterbury, Christchurch, New Zealand (Prof. Geoff Chase, Prof. Peter Moss, Prof. Andy Buchanan).
- Colorado State University, Fort Collins (Prof. Richard Gutkowski) and Metropolitan State College of Denver (Prof. Jeno Balogh), Colorado, USA.
- FPInnovations, Vancouver, Canada (Dr. Marjan Popovski).