

# CURRICULUM VITAE

Full name: Francesca Sciarretta

Nationality: Italian

Date of birth: 30/08/1978

Webpage: <http://www.iuav.it/Ateneo1/docenti/docenti201/Sciarretta/index.htm>

## 1. Education

- **Dec. 2006 – Mar. 2010:** PhD in Structural Civil Engineering – Modelling, preservation and Control of Materials and Structures, University of Trento, Italy. Cum laude.
- **Oct. 2004:** Master's Degree in Architecture, IUAV University of Venice, Italy.

## 2. Current position

- **Jun. 2012 to Jun. 2017:** Assistant Professor in Structural Civil Engineering, Department of design and Planning in Complex Environments, IUAV University of Venice, Italy.

## 3. Previous positions

- **2010 – 2012** Teaching Associate, IUAV University of Venice, Italy
- **2007 – 2010** Grant holder, IUAV University of Venice, Italy
- **2006 – 2009** Teaching Assistant, IUAV University of Venice, Italy

## 4. Research and expertise expeditions

- **May 2015:** Visiting Researcher at Budapest Neutron Centre, project "Non-destructive prompt gamma activation analysis (PGAA), prompt gamma activation imaging (PGAI) and neutron imaging for the in-depth analysis of cultural heritage construction materials", approved and co-funded by NMI3 FP7 Transnational Access Programme
- **May-Jun. 2009:** member of the Support Expedition "IUAV per l'Abruzzo" of IUAV University of Venice in Abruzzo, Italy, after the earthquake of 2009, as Team Chief Surveyor for investigations on the damaged heritage buildings

## 5. Academic teaching activities

As Assistant Professor, Dept. of Design and Planning in Complex Environments, IUAV University of Venice:

- a. y. 2016-17: Building Design Studio course (Structural Design)
- a. y. 2015-16: Course of Sustainable Design with Innovative Materials
- a. y. 2014-15: Infrastructures Design Studio course (Structural Design)
- a. y. 2012-13 to 2014-15: Building Design Studio course (Structural Design)

As Teaching Associate, Faculty of Architecture, IUAV University of Venice:

- a. y. 2011-12: Lecturer in Structural Civil Engineering.
- a. y. 2010-11: Lecturer in Building Design Studio course (Structural Design).

As Teaching Assistant, Faculty of Architecture, IUAV University of Venice:

- a. y. 2009-10: Assistant to Pre-graduation Design Workshops

- a. y. 2006-07: Assistant to Building Design Studio course (Structural Design)

6. Teaching in courses for professionals

- **May 2016:** "Design of fire resistive structures. Part 4: Post-fire structural diagnosis and residual mechanical parameters for the re-use of structures damaged by fire. Introduction: Fire and cultural heritage buildings". Technical course organized by the Professional Engineers' Association of Verona, the Engineers' Board of Verona and ATE – Association of Building Technologists.
- **Feb. 2016:** "Design of fire resistive structures. Module 3: Fire resistance of masonry structures", Technical course organized by the Professional Engineers' Association of Monza and Brianza
- **Jun. 2015:** "Design of fire resistive structures – tabulated data and analytical methods", Technical course organized by the Professional Engineers' Association and the Syndicate of the Province of Bergamo.

7. Mentoring and supervising activities

- **2016:** Co-supervision of undergraduate students Andrea Bizzotto and Giosuè Sella, thesis' title: "Restoration and re-use of a 1900 paper factory in the surroundings of Amalfi"
- **2013:** Tutor of undergraduate student Yang Yaochen incoming from Fuzhou University, China, to IUAV University of Venice
- **2014:** Supervisor of grant holder Dr Arch Carlo Casalegno, at Dept. of design and Planning in Complex Environments, IUAV University of Venice. Research project: Traditional brickwork structures under severe actions: structural retrofit with high performance materials

8. Organisation of national and international conferences

- **2016:** Member of the Scientific Committee of GCCAE - Global Conference on Civil and Architectural Engineering, Guangzhou, China, 12-14<sup>th</sup> August 2016
- **2014:** Member of the Technical Committee of ICMPM - International Conference on Mechanical Properties of Materials, Amsterdam, The Netherlands, 15-16<sup>th</sup> December 2015
- **2010:** Member of the Organizing Committee of National Seminar on the Safety and Preservation of Cultural Heritage Hurt by Earthquake: Reconstruction Strategies and Techniques One year after the Abruzzo Earthquake, Venice 8-9<sup>th</sup> April 2010.
- **2009:** Member of the Organizing Committee of MuRiCo3 – National Conference on Strengthening and Repair of Masonry Structures with Composite Materials, Venice, Italy, 22-24<sup>th</sup> April 2009
- **2007:** Member of the Organizing Committee of International Symposium of IASS – International Association of Shell and Spatial Structures. Venice, Italy 3-6<sup>th</sup> December 2006
- **2006:** Member of the Organizing Committee of National conference on Testing on Materials and Structures, Venice, Italy 5-7<sup>th</sup> December 2006

9. Major conferences and seminars attended

- **Jun. 2016:** IB2MAC, 16<sup>th</sup> International Brick and Block Masonry Conference, Padua, Italy June 26-30<sup>th</sup> 2016. Accepted speaker.
- **Jun. 2015:** ICCS18 - 18<sup>th</sup> International Conference on Composite Structures, Lisboa, Portugal, June 15-18, 2015. Accepted speaker.
- **Mar. 2015:** Mediterranean Green Energy Forum – MGEF, Marrakech, Morocco. Keynote lecturer.
- **Apr. 2015:** 3<sup>rd</sup> Michelangelo Workshop, Rome, Italy. Invited speaker.

- **Sep. 2014:** MuRiCo4 – National Conference on Strengthening and Repair of Masonry Structures with Composite Materials, Ravenna, Italy, 9-11<sup>th</sup> September 2014. Session co-chair
- **Oct. 2012:** 8th International Conference on Structural Analysis of Historical Constructions - SAHC 2012, Wroclaw, Poland 15-17th October 2012. Accepted speaker.
- **Sep. 2011:** 12th International Conference on Structural Repairs and Maintenance of Heritage Architecture – STREMAH, 5-7th September 2011 Chianciano Terme, Italy. Accepted speaker.
- **Jun. 2009:** 1st Conference on Protection of Historical Buildings – ProHiTech 09, Rome 21-24th June 2009. Accepted speaker.

#### 10. Commission of trust

- **2016:** Reviewer for *Engineering Structures*, international peer-reviewed journal, publ. Elsevier, ISSN: 0141-0296
- **2015:** Reviewer for the *International Journal of Masonry Research and Innovation*, international peer-reviewed journal, publ. Inderscience, ISSN: 2056-9467 (online), 2056-9459 (print)
- **2013:** Reviewer for the *International Journal of Architectural Heritage*, international peer-reviewed journal, publ. Taylor and Francis, ISSN 1558-3058 (Print), 1558-3066 (Online)

#### 11. Membership in scientific organizations

- **2014 to now:** Representative of IUAV University of Venice inside the Mediterranean Network of Engineering Schools (RMEI)

#### 12. Funding received

- **2015:** Collaborative project "Non-destructive prompt gamma activation analysis (PGAA), prompt gamma activation imaging (PGAI) and neutron imaging for the in-depth analysis of cultural heritage construction materials". NMI3 FP7 Transnational Access Programme co-funding (reimbursement)
- **2014:** Project "Traditional brickwork under severe actions: structural refurbishment with high performance materials". Department funding: 1500€
- **2013:** Project: "Brickwork and fire: new theoretical-experimental studies on structural reliability after high temperatures". Department funding: 3500€

#### 13. Selected publications

##### Peer-reviewed journal and conference papers

- S. Russo, F. Sciarretta (2016). Numeric research on the mechanical properties of different masonry units during and after fire. In: Proceedings of IB2MAC, 16th International Brick and Block Masonry Conference "Masonry in a world of challenges", Padua, Italy June 26-30th 2016
- S. Russo, F. Sciarretta (2015). Numerical investigation on the residual behaviour of masonry walls damaged by fire exposure. **Key Engineering Materials**, 624, 230-237
- F. Sciarretta (2015). First evaluation of the structural performance of traditional brickwork after standard fire exposure. **Advanced Materials Research** 1119, 706-715
- S. Russo, F. Sciarretta (2015). Residual mechanical parameters of masonry exposed to fire: a new numerical approach. **Advanced Materials Research** 1119, 700-705

- G. Boscato, A. Dal Cin, G. Riva, S. Russo, F. Sciarretta (2014). Knowledge of the construction technique of the multiple leaf masonry façades of Palazzo Ducale in Venice with ND and MD tests. **Advanced Materials Research**, 919-921, 318-324
- F. Sciarretta, Modeling of mechanical damage in traditional brickwork walls after fire exposure (2014). **Advanced Materials Research**, 919-921, 495-499
- G. Boscato, A. Dal Cin, S. Russo, F. Sciarretta (2014). SHM of Historic Damaged Churches. **Advanced Materials Research** 838-841, 2071-2078
- S. Russo, F. Sciarretta (2013). Masonry exposed to high temperatures: Mechanical behaviour and properties — An overview, **Fire Safety Journal**, 55, 69-86
- S. Russo, F. Sciarretta (2012). Experimental and Theoretical Investigation on Masonry after High Temperature Exposure, **Experimental Mechanics**, 52 (4), 341-359
- G. Boscato, A. Dal Cin, F. Sciarretta, E. Sperotto, S. Russo (2012). Structural health monitoring of basilica plan churches damaged by earthquake. In: Proceedings of International Conference on Engineering and Applied Sciences - ICEAS, Beijing, 24-27th July 2012, China
- G. Boscato, D. Rocchi, S. Russo, F. Sciarretta, M. Pizzolato (2012). Modelling procedure for structural characterization of monumental buildings. In: Proceedings of 14th International Conference on Computing in Civil and Building Engineering - ICCCBE, Moscow, June 27-29, 2012
- G. Boscato, S. Russo, F. Sciarretta (2012), The double-layered façades of Palazzo Ducale in Venice: results from testing and long-term monitoring. In: Proceedings of 8th International Conference on Structural Analysis of Historical Constructions - SAHC 2012, Wroclaw 15-17th October 2012
- G. Boscato, S. Russo, F. Sciarretta (2011). Structural Monitoring of the Slender Double-Layered Façade of Palazzo Ducale in Venice - Preliminary Analysis of Measurements, **Masonry International**, 24 (3), 57-72
- G. Boscato, G. Riva, S. Russo, F. Sciarretta (2011). ND tests for a first assessment of mechanical behaviour of the stone-covered façades of Palazzo Ducale in Venice. In: Proceedings of 12th International Conference on Structural Repairs and Maintenance of Heritage Architecture – STREMAH, 5 - 7 September 2011 Chianciano Terme, Italy
- G. Boscato, A. Di Tommaso, F. Guerra, L. Lazzarini, A. Mazzucato, M. Pizzolato, S. Russo, F. Sciarretta, E. Sperotto (2010). Approach and methodology in understanding the structural behaviour of historic arch bridges through dynamic monitoring: the case of Rialto Bridge in Venice. In: Proceedings of 34th IABSE Symposium, Venice, Italy, September 22-24, 2010
- S. Russo, F. Sciarretta (2009). Residual strength of traditional brick masonry subjected to high temperatures. In: Proceedings of 1st Conference on Protection of Historical Buildings – ProHiTech 09, Rome 21-24 June 2009
- D. Andreozzi, A. Barbieri, G. Boscato, A. Dei Svaldi, F. Guerra, A. Di Tommaso, L. Lazzarini, G. Mirabella-Roberti, F. Peron, G. Riva, S. Russo, L. Scappin, F. Sciarretta, B. Zan (2009). Integrated control in monitoring historic buildings: the case of wall structures of Palazzo Ducale in Venice. In: Proceedings of 1st Conference on Protection of Historical Buildings – ProHiTech 09, Rome 21-24 June 2009
- S. Russo, G. Boscato, F. Sciarretta (2008). Behaviour of a Historical Masonry Structure Subjected to Fire, **Masonry International**, 21 (1), 1-14

#### Chapters in collective volumes

- S. Russo, F. Sciarretta, High temperature effects on masonry materials. In: *Brick and Mortar research*, S. M. Rivera and A. L. Pena Diaz editors. Nova Science Publishers, 2012, ISBN: 978-161942927-7

- F. Sciarretta, Muratura. In: *Strutture Resistenti al fuoco*. P. G. Gambarova, A. Fantilli and S. Tattoni editors. Roma: EPC, 2016 (in Italian) in press

#### Conference Proceedings as Editor

- G. Boscato, F. Guerra, S. Russo, F. Sciarretta, E. Sperotto editors (2010). *Sicurezza e conservazione nel recupero dei beni culturali colpiti dal sisma, strategie e tecniche di ricostruzione ad un anno dal terremoto abruzzese*, Venezia 8 – 9 aprile 2010. Conference proceedings. (in Italian)

#### 14. Institutional responsibilities

- **Jul. 2012 – Jul. 2015:** Member of Academic Senate of IUAV University of Venice, as the delegate of Assistant Professors
- **Sep. 2010 to present:** National Secretariat of Scientific Sector ICAR09 “Structural Engineering”
- **2007 – 2011:** Technical secretariat of the Research Unit “Assessment of Monumental Buildings” at IUAV University of Venice, Italy

#### 15. Spoken languages

- **Italian:** mother tongue. **English:** C. **French:** A

**Description of the major career accomplishments** Since the beginning of my career in 2006, I devoted my attention to traditional masonry structures, which are vulnerable, representative of people’s cultural heritage and forever challenging from the point of view of scientific study. The PhD Course I have chosen at the University of Trento was aimed at the Modelling, preservation and Control of Materials and Structures; it added a specific scholarly engineering education to my background of architectural studies. As well, I’ve always tried to focus on novel or scarcely explored fields; in fact, very soon the peculiar topic of masonry and fire caught my passion and efforts. This culminated in my PhD thesis in 2010, which was the first scientific work ever done about this subject and was awarded the committee’s honours. Today, I am still the only woman involved in these topics in Italy. As well, structural evaluation, diagnostics and monitoring has also always attracted me, and I had the privilege to work at monitoring programmes on monuments like the Palazzo Ducale and the Rialto Bridge in Venice (2009-2013). After these experiences, I believe that integrated and multi-disciplinary programmes are recommendable and feasible to assess vulnerable monumental structures. I am also responsible of a trans-national research for exploration of neutron-based techniques for non-destructive evaluation of building materials. In 2009, I’ve also acquired field experience of seismic damage survey in emergency condition after earthquake in Abruzzo. All through my career, I’ve become particularly skilled in the use of computer-aided calculation software for academic use, particularly DIANA9.6, to carry on linear and nonlinear analyses (e.g. structural, spectra and transient heat flow). I am also concerned with the practical usefulness of my research to professional architects and engineers, through whom my findings would be beneficial to building constructors, owners and users; I devote a constant effort in preparing and improving lectures at professional courses, dealing with design of fire-resistive masonry structures. When I became Assistant Professor in 2012, I also spent much time in developing new teaching skills, by studying and observing senior professors’ activities. I have always tried to bring my research’s findings to the curiosity of my Architecture students and I have shown them the essential role of Structural Design in beginning to think as architects.