

## PERSONAL INFORMATION

## Alessandra Zanelli



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Sex Female | Date of birth 08/07/1968 | Nationality Italian

## CURRENT POSITIONS

From 2011 August 1 <sup>st</sup> to now	Associate Professor, Architecture, Built Environment and Construction Engineering (ABC) Department, Politecnico di Milano (POLIMI)
From 2014 February to now	Full Professor qualifying agreement
From 2015 to now	Coordinator of <i>TEXTILES HUB</i> , the Interdepartmental Laboratory on Textile materials and Polymers at POLIMI
From 2008 to now	Founder of <i>clusTEX</i> , the multidisciplinary research cluster on innovative textiles at POLIMI
From 2004 to now	Regional Representative and Associate Partner of <i>TensiNet</i> , the European thematic network for upgrading the built environment through tensile structures

## PREVIOUS POSITIONS

2005.01.01 – 2011.07.31 from 1997 to 2005	Researcher, BEST Department, POLIMI VII Level Technician Staff, BEST Department, POLIMI
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## EDUCATION

1997	PhD in Technology of Architecture and Environment, BEST Dept., POLIMI
1993	Master in Architecture, Structural and Technological Specialization, Faculty of Architecture, POLIMI, score: 100/100 cum laude
1987	Classical A levels, Liceo Rambaldi, Imola (Bo), Italy; score: 60/60 cum laude

**ADDITIONAL INFORMATION**

Mother tongue(s)	Italian				
Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
	English	C1	C1	C1	C1
Driving licence	B Category				
Publications	more than 150 publications; 3 patents; 1 European Design Patent				
ORCID	<a href="http://orcid.org/0000-0002-7635-1531">http://orcid.org/0000-0002-7635-1531</a>				
LINKEDIN	<a href="https://www.linkedin.com/in/alessandrazanellipolimi">https://www.linkedin.com/in/alessandrazanellipolimi</a>				
RESEARCH GATE	<a href="https://www.researchgate.net/profile/Alessandra_Zanelli">https://www.researchgate.net/profile/Alessandra_Zanelli</a>				
ABC Dept. Web Page	<a href="http://www.abc.polimi.it/it/persona/personale-docente/zanelli-alessandra/">http://www.abc.polimi.it/it/persona/personale-docente/zanelli-alessandra/</a>				

**FELLOWSHIPS & AWARDS**

2008	2 <sup>nd</sup> classified, winner of a grant for the Scientific productivity, BEST Dept. POLIMI
2006	1 <sup>st</sup> classified, winner of a grant for the Scientific productivity, BEST Dept. POLIMI
1997	winner of a position of 3 years fellowship, PhD Course, X cycle, in Technology of Architecture and Environment, BEST Dept., POLIMI
1997	winner of a position of 1 year fellowship at National Research Center, CNR - ICITE, Sesto Uteriano (Milan) on the research topic: Innovation in Technology and Construction; renunciatory as incompatible with the PhD fellowship

**TEACHING ACTIVITIES**

The following teaching activities of mine are all at POLIMI compuses:

## 1st LEVEL

- Teaching *Architectural Technology, Construction od Architecture Design Studio 1*, Bachelor course of Science of Architecture at School of Architecture, Urbanism and Construction Engineering;
- Teaching *Experimental Building Systems and Components*, Bachelor course of Interior Design at School of Design

2<sup>nd</sup> LEVEL

- Teaching *Design of Ultra-lightweight Building Systems*, optional course open to all Master level course at POLIMI;

3<sup>rd</sup> LEVEL

- Teaching *TEAL Sheltering Course: Temporary architecture and Textile technologies*; PhD level course offered every 2 years and open to all PhD courses at POLIMI.

## RESEARCH ACTIVITIES

My main interests deal with role of technological innovation in architecture and in industrial design. In particular, i have been focusing on:

- temporary systems (tents, minimal units for emergency; mobile homes);
- adaptive systems (smart, extensible, foldable, pivots systems);
- innovative application of lightweight systems;
- dry-techniques and demountable buildings for dwellings
- the application of the life cycle thinking design methodology to the whole design process, from the early phases to the construction ones.

I also have been the role of supervisor of scientific contents available on-line at the website: [www.architetturatessile.polimi.it](http://www.architetturatessile.polimi.it) (since 2007) and [www.textilearchitecture.polimi.it](http://www.textilearchitecture.polimi.it) (since 2011): the Italian site which promotes the dissemination of membrane architecture and lightweight structures (tensile structures, pneumatic systems, air inflatable and air supported structures, grid and shells), giving specific information to designers about textiles employed in nautical and other advanced fields and their potential transfer in the building sector

## GRANTED RESEARCH PROJECT

I was involved in different research projects, co-financed by Regional and International institutions (Cariplo Foundation, MIUR, Regione Lombardia, EU) with the role of Partner, Principal Intestigator, leading or co-leading some specific working packages, as follows:

1. Cost Action TU1303: Novel structural skins: Improving sustainability and efficiency through new structural textile materials and designs (2013-2017); co-leader (with Jan Cremers and Carol Monticelli) of WP2- Sustainability and member of the Management Committee.
2. Collaborative project EeB.NMP.2011-3 (2012-2016): project named EASEE - Envelope Approach to improve Sustainability and Energy efficiency in Existing multi-storey multi-owner residential buildings; Member of the WP 4: Retrofitting solutions using textiles and thin insulation materials;
3. Collaborative Project - Security FP7-SEC-2011-1 (2012-2016): project named S(P)EEDKITS - Rapid deployable & packaging kits as seeds for self-recover; role of principal investigator as partner POLIMI; leader of POLIMI team; leader of WP1: System design and modularity; co-leader of WP2: Sheltering: design and blueprints.
4. Research project co-financed by Region Lombardy - (2012-2014) named TIFAIN (Tessere Integrate di vetro Fotovoltaico per applicazioni Architettoniche INnovative) , a researchof industrial development on the creation of a new kind of OPV integrated- tile for facades ; role of principal investigator as partner POLIMI; Leader of WP1 on the designing of the new tiles;
5. Progetto Fondazione Cariplo – Advanced materials (2010-2011): project named SOFT (Smart, Organic, Flexible and Translucent) – PV. Creation of a Photovoltaic Organic Cell on Fluoropolymeric Substrate to Integrate into Smart Building Envelopes; role of principal investigator
6. MIUR PRIN 2005 – National funding Project (2005-2007). Project name: Membrane e scocche per l'architettura diffusa (membranes and shells for the built environment); role of co-leader (with Andrea Campioli) of POLIMI team.
7. MIUR PRIN 2000 – National funding Project (2000-2002). Project name: Tecnologie di intervento per l'innovazione negli insediamenti per l'emergenza (Innovative techniques for the emergency settlements response); role of member of POLIMI team
8. CNR Agenzia 2000 – National fulding project (2000-2002). Project name: Le scienze umane nella formazione dei progettisti tecnici (Human sciences for the training of technical designers); role of co-leader (with Marisa Bertoldini) of POLIMI team.

## MEMBERSHIPS OF SCIENTIFIC SOCIETIES

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- January 2004 - now Regional Representative for Italian Universities and Associate Member of the Research Network: *TensiNet - the thematic network for upgrading the built environment in Europe through tensile structures*
- January 2009 - now Associate Member of the Research network: *IASS - The International Association for Shell and Spatial Structures founded by Eduardo Torroja in 1959*
- November 2008 - now Member of Working Group ETFE and Working Group SPECIFICATIONS of the Research Network: *TensiNet - the thematic network for upgrading the built environment in Europe through tensile structures*
- December 2008- June 2010 Representative for Italy, *CEN/TC250 WG5 Membrane structures (group for preparation of a new Eurocode dealing with the structural application of textiles materials and foils)*
- January 2000 – December 2002 Member of the standardization group: UNI - Commissione Edilizia Eco-Compatibile, sottogruppo SG3: Materiali (*group for preparation of a Italian Standard*)

## EDITOR OF JOURNALS & SUPERVISOR OF BOOK SERIES

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- March 2006 - now Editor of the Italian Journal **Costruire in laterizio** - Section: Dettagli
- March 2008 - now Editor of the Italian Architectural Magazine **Arketipo** – Section: Projects
- January 1999 - now Editor of the Italian Journal **Costruzioni Metalliche** – Section: Architecture
- January 2015 - now Editor of the Italian Journal **TENDA** – Section: Textile Architecture
- January 2002 - December 2010 Scientific Supervisor of the Book Series **Tecnologia e Progetto**, Libreria Clup, Milano (with Marisa Bertoldini, Andrea Campioli, Anna Mangiarotti e Guido Nardi)
- March 2006 – December 2008 Editor of the Journal **@BEST** – Four-Month Journal of the Building Environment Science & Technology BEST Department at POLIMI (with Anna Delera, Gabriele Masera e Tiziana Poli) - ISSN 1827-3351
- January 2002 – December 2004 Editor of the on-line Journal **NEHS** - Network of Engineering and Human Sciences
- January 2005 – January 2006 Scientific supervisor of the on-line portal **INFOBUILD** (with Ingrid Paoletti)
- February 1997 - December 2008 Scientific supervisor of CD-ROM Series: **Aeditoria Elettronica** - "Banca Dati per l'Architettura e l'Edilizia"

## ORGANISATION OF SCIENTIFIC MEETINGS

- 16-17 March 2016 Organization of two Plenary sessions (1. Networking; 2. Envisioning) of COST ACTION TU1303 *Novel structural skins* at POLIMI
- 25-27 September 2012 Scientific coordination of a 3-days Multidisciplinary Design Workshop entitled: *Novel Sheltering, Second Design workshop of WP2*, ABC Dept. with Design Dept., European Project *S(p)eedkits*.
- 22-23 May 2012 Scientific coordination of the *Milestone 1 - general meeting of the European Project S(p)eedkits* and organization of 1week collateral exhibition: *Sheltering & Packaging*.
- 11 June- 22 July 2010 Scientific coordination of a *Conferences Cycle on Textile Architecture* at Milan Architects Professional Office: Ordine degli Architetti, Pianificatori, Paesaggisti e Conservatori della Provincia di Milano, via Solferino, Milan, with the patronage of Politecnico di Milano e della Facoltà di Architettura e Società, supported by Giovanardi, Canobbio, Serge Ferrari.
- 16-17 April 2007 Organization of the TensiNet Symposium 2007 and correlated Exhibition entitled: “Ephemeral Architecture: time and textiles, School of Architecture and Society, POLIMI
- April – June 2005 Organization (with Ingrid Paoletti and Monica Lavagna) of the Conference cycle “Projects in Progress”. Invited lecturers: Dominique Perrault (14 April) and Kengo Kuma (13 June)

## MEMBER OF SCIENTIFIC COMMITTEES & CHARMAN OF CONGRESS SESSIONS

- Next 25-28 September 2017 Co-Chairman of the Session (with Jianhui Hu and Wujun Chen): Membrane Structures - Architectural Membrane Structures (Integrated Photovoltaics) of the next Annual Symposium of the International Association for Shell and Spatial Structures IASS 2017 entitled: Interfaces: Architecture, Engineering, Science, Hamburg,
- 26-28 October 2016 Co-Chairman of the Session (with John Chilton): Sustainability and Life Cycle Analysis of Structural Skins at TensiNet - COST Action TU1303 Symposium 2016, University of Newcastle, UK
- 26-28 October 2016 Member of the Scientific Committee and reviewer of the TensiNet - COST Action TU1303 Symposium 2016 entitled “Novel Structural Skins”, University of Newcastle, UK
- 8-10 May 2013 Member of the Scientific Committee and reviewer of the TensiNet Symposium 2013 entitled “[RE]THINKING lightweight structures”, Mimar Sinan Fine-Art Univ., Istanbul.
- 16-18 September 2010 Member of the Scientific Committee and reviewer of the TensiNet Symposium 2010 entitled “Tensile Architecture: Connecting Past and Future”, University of Architecture, Civil Engineering and Geodesy, Sofia.
- 16-17 April 2007 Member of the Scientific Committee and reviewer of TensiNet Symposium 2007 entitled: “Ephemeral Architecture: time and textiles”, School of Architecture & Society, POLIMI.
- Dec. 2004 - Dec. 2005 Member of the Scientific Committee and reviewer Annual Report of Graduated Students of the School of Architecture and Society, POLIMI:

## ARCHITECTURAL WORKS & TEMPORARY INSTALLATION

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- 8 December 2013 Construction site advisor of the Temporary Artwork of the artist Toshiko Horiuchi, MACRo Museum, Rome; co-design of the interface details between the listed building of the Museum and the tensile net of nylon handmade by the artist.
- 2011 Design and economical support (65%) of the textile-based Pavilion which hosts the TEXTILES HUB Laboratory at POLIMI, 14A Building, 9 Bonardi street, Milan.
- 2010 Installation of the SOFT-CUBE temporary Pavilion designed by POLIMI students of the Construction of Architecture Design Studio 2010-2011, Via Solferino, Milan; supported by Fratelli Giovanardi, Canobbio textile Engineering and Serge Ferrari Textiles.
- 12-15 March 2008 Installation of the “Lightweight Construction” Pavillion at Cuore Mostra – SAIE Spring Exhibition, Bologna Fair, in collaboration with TensiNet and POLIMI.
- 1-2 July 2008 Installation of the ClusTEX Pavillion at Salone Architex, *II Congresso Mondiale degli Architetti, Lingotto Fiere, Torino, invited by TECTEXCLUB association.*

## INSTITUTIONAL RESPONSABILITIES

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- March 2017- February 2019 Member of the Scientific Commission of ABC Department, POLIMI
- January 2014 - now Responsible of teaching and research activities of laboratories at ABC Dept.
- April 2011- March 2014 Member of the departmental Board, ABC Dept.
- March 2008 - February 2011 Member of the preliminary Commissions “Research” and “Communication” working on the definition of the Strategic 3-Years Research Plan at BEST (currently ABC) Dept.
- January 2006- July 2008 Member of the Teaching Commission of ABC Department, with the role of reference person for the Science of Architecture Bachelor Course, Milan.
- Jan - Dec. 2012 Member of the Qualifying Evaluation Board for Architects and Planners, Italy.
- From 1999 to now Member of the Degree Panel of the Bachelor in Science of Architecture at POLIMI
- From 1999 to now Member of the Degree Panel of Master in Architecture at POLIMI
- 2004 - 2014 Member of Evaluation commission of 22° and 28° Cycle of Doctoral course in Technology and Design for the environmental quality, POLIMI.

**COMMISSION OF TRUST**

Jan - Dec. 2012	Member of the Qualifying Evaluation Board for Architects and Planners, Italy.
From 1999 to now	Member of the Degree Panel of the Bachelor in Science of Architecture at POLIMI
From 1999 to now	Member of the Degree Panel of Master in Architecture at POLIMI
2004 – 2014	Member of Evaluation commission of 22° and 28° Cycle of Doctoral course in Technology and Design for the environmental quality, POLIMI.
2016	Member of Evaluation Commission of the Final PhD Exam, Doctoral course in Civil Engineering at VUB - Free University of Brussels, Brussels, Belgium.

**RECENT SELECTED PUBLICATIONS**

**Zanelli A.**, Spinelli M.L., Monticelli C., Pedrali P. (eds.) (2016), *Lightweight Landscape - Enhancing Design through Minimal Mass Structures*, Polimi SpringerBriefs, Cambridge.

Barozzi M., Lienhard J., **Zanelli A.**, Monticelli C. (2016), *The Sustainability of Adaptive Envelopes: Developments of Kinetic Architecture*, in *Procedia Engineering 155*, p. 275-284, 2016.

**Zanelli A.**, (2015), *Architectural fabric structures in refurbishment of archaeological and cultural heritage areas*, in: Llorens Duran, J.I., *Fabric structures in architecture*, Woodhead Publishing Limited, Cambridge, 2015, pp. 481-527, doi:10.1016/B978-1-78242-233-4.00015-2.

Hua S., Angelotti A., **Zanelli A.** (2015), *Thermal-physical behaviour and energy performance of air-supported membranes for sports halls: a comparison among traditional and advanced building envelopes*, in: ENERGY AND BUILDINGS, vol. 109, pp. 35-46.

Monticelli C., **Zanelli A.**, *Eco-efficiency and life cycle analysis of structural membranes in architecture*, in FALK A., VEGH P. e CHILTON J. (eds.) (2015), *Proceedings of the IASS Working Groups 12+18 International Colloquium “Bio-based and Bio-inspired Environmentally Compatible Structures”*, 10 - 13 April, Tokyo Denki University, Japan

Monticelli C., **Zanelli A.** (2016), *Life Cycle Design and Efficiency Principles for Membrane Architecture: Towards a New Set of Eco-Design Strategies*, in *Procedia Engineering 155*, p. 416-425, 2016.

Jakica N., **Zanelli A.** Frontini F (2015), *Experimental Validation of Optical Simulation for Complex Building Integrated Photovoltaic System*, Proceedings of the 31st European Photovoltaic Solar Energy Conference and Exhibition, Hamburg, Germany.

Jakica N., **Zanelli A.** (2014), *Dynamic Visualization of Optical and Energy Yield Co-Simulation of New Generation BIPV Envelope in Early Design Phase Using Custom Ray Tracing Algorithm in Python*, in: *Proceedings of Advanced Building Skins Conference*, Bressanone, Italy, October 28-29, 2014, ISBN 978-3-98120537-4.

Z. Fan, M. Garbugli, C. Monticelli, M. Caironi, **A. Zanelli** (2014), *Mechanical Robustness investigation of organic photovoltaics for membrane integrated flexible solar cells*, in: IASS WG18 (edited by), *Proceedings of the 11th International Seminar on Environmentally Compatible Structures (ECS)*, November 7-9 2013, Cluj-Napoca, Romania, UTPress - The Publishing House of the Technical University of Cluj-Napoca, ISBN 978-973-662-970-9.