



# POLITECNICO MILANO 1863

**PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2023\_PRO\_DABC\_3 OF 01/03/2023 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 14/3/2023, n.20 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 08/B2 - STRUCTURAL MECHANICS - SDS ICAR/08 - STRUCTURAL MECHANICS, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF ARCHITECTURE, BUILT ENVIRONMENT AND CONSTRUCTION ENGINEERING (PROCEDURE CODE 2023\_PRO\_DABC\_3).**

## FINAL REPORT

The Selection Board, appointed with RD Index No. 5344 ref. No. 108582 of 09 May 2023, composed by the following Professors:

Prof. COLOMBI Pierluigi - Politecnico di Milano;  
Prof. TORRES LLINAS Lluís - Universitat de Girona;  
Prof. BALÁZS György László - Budapesti Műszaki és Gazdaságtudományi Egyetem,

met on June 13th at 7:45, for the first teleconference meeting.  
Each board member was connected from his/her workstation.

At the start of the session the members of the Selection Board named the Chairman and the Secretary of the Selection Board:

Prof. TORRES LLINAS Lluís - Universitat de Girona, Chairman;  
Prof. COLOMBI Pierluigi - Politecnico di Milano, Secretary;

Each member of the board declared not to have conjugal nor family relationship or other degree of kinship or affinity up to the fourth degree, not to be in same-sex civil union (as per art. 1 of Law No. 76 of 20.05.2016) and not to form a cohabiting couple (as per art. 1, paragraphs 37 et seq. of Law No. 76 of 20.05.2016) with the other members of this board and that there were no reasons for abstention pursuant to arts. 51 and 52 of the Civil Procedure Code.

The members of the Selection Board and the Secretary declared, pursuant to art. 35-bis of Legislative Decree 165/2001, not to have criminal convictions, even with non-definitive sentences, for offences provided for in Chapter I, Title II of the second book of the Criminal Code.

The Selection Board established the criteria and the parameters according to which the assessment was carried out, and set the minimum score below which the candidate shall not be included in the ranking of candidates.

On July 11th at 10:00, the Selection Board met on teleconference for the second meeting to inspect the list of applicants, who were:

- 1) Bocciarelli Massimiliano
- 2) Carvelli Valter
- 3) Corbi Ottavia
- 4) Fedele Roberto
- 5) Placidi Luca
- 6) Tornabene Francesco

Each member of the board declared not to have conjugal nor family relationship or other degree of kinship or affinity up to the fourth degree, not to be in same-sex civil union (as per art. 1 of Law No. 76 of 20.05.2016) and not to form a cohabiting couple (as per art. 1, paragraphs 37 et seq. of Law No. 76 of 20.05.2016) with the candidates and stated that there were no reasons for abstention pursuant to arts. 51 and 52 of the Civil Procedure Code.

Pursuant to the examination and after adequate evaluation, the Selection Board assigned a score to each of the established criteria and a judgment to each publication submitted by the candidate; furthermore, the board evaluated the knowledge of the English language.

Therefore the board, considering the sum of the scores given, expressed a collective judgment in relation to the quantity and the quality of publications, evaluating the overall productivity of the applicant, also with regard to his/her period of activity.

The above-mentioned judgments are attached to this report and they are an integral part of it (Attachment No. 1 to this final report).

The Selection Board drew up, according to the majority of its members, a ranking of candidates selected to carry out the scientific/teaching functions for which the selection was called, in a number equal to a maximum of five times the number of positions available in the competition (Attachment No. 2 to this final report).

#### THE SELECTION BOARD

*Prof. TORRES LLINAS Lluís (Chairman)*

*Prof. BALÁZS György László (Member)*

*Prof. COLOMBI Pierluigi (Secretary)*

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**PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2023\_PRO\_DABC\_3 OF 01/03/2023 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 14/3/2023, n.20 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 08/B2 - STRUCTURAL MECHANICS - SDS ICAR/08 - STRUCTURAL MECHANICS, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF ARCHITECTURE, BUILT ENVIRONMENT AND CONSTRUCTION ENGINEERING (PROCEDURE CODE 2023\_PRO\_DABC\_3).**

## ATTACHMENT No. 1 to the FINAL REPORT

CRITERIA	Quality of scientific and/or project production, assessed on the basis of criteria and parameters recognized by the international scientific community of reference	Teaching activity at the university level in Italy or abroad	Scientific responsibility for funded research projects	Results obtained in technology transfer in terms of participation in the creation of new enterprises (spin off), development, use and marketing of patents	Total
Bocciarelli Massimiliano	31.5	36	10	0.5	78.0
Carvelli Valter	34.0	38	12	1.0	85.0
Corbi Ottavia	27.8	36	9	2.0	74.8
Fede Roberto	28.5	36	12	0.5	77.0
Placidi Luca	30.3	36	6	1.0	73.3
Tornabene Francesco	32.3	36	2	1.0	71.3

CANDIDATE: BOCCIARELLI Massimiliano

### CURRICULUM:

The candidate received the M.S. degree in Civil Engineering from Politecnico di Milano in 2001, a master in Structural Engineering from Chalmers University of Goteborg (SWE) in 2002 and the doctoral degree in Structural Engineering from Politecnico di Milano in 2005. He is associate professor at Politecnico di Milano from 2014. He was visiting academic at the University of Sidney (AUS) in 2015, 2016 and 2017. He received an International Research Collaboration Award from the University of Sidney (AUS) in 2014. He is member of the Scientific Commission of the Department ABC of the Politecnico di Milano from 2017.

With reference also to the scientific production, didactic activity, funded research, and results from technology transfer evaluated below, the Selection Board formulates a very good evaluation of the candidate's curriculum.

### SUBMITTED PUBLICATIONS:

No. of publications	Type/Title of Publication	Judgment
1	Article/ Identification of the parameters contained in a cyclic cohesive zone model for fatigue crack propagation	1.35
2	Article/ A new cohesive law for the simulation of crack propagation under cyclic loadings. Application to steel- and concrete-FRP bonded interface	1.35
3	Article/ A rate dependent cohesive model for the analysis of concrete-FRP bonded interfaces under dynamic loadings	1.30

4	Article/ Irreversible cyclic cohesive zone model for prediction of mode I fatigue crack growth in CFRP-strengthened steel plates	1.35
5	Article/ Stochastic and recursive estimation of the hygro-thermo-chemical-mechanical parameters of concrete through Monte Carlo analysis and Extended Kalman Filter	1.10
6	Article/ Intermediate crack induced debonding in steel beams reinforced with CFRP plates under fatigue loading. Engineering Structures	1.35
7	Article/ An inverse analysis approach for the identification of the hygro-thermo-chemical model parameters of concrete	1.10
8	Article/ A numerical procedure for the pushover analysis of masonry towers	1.05
9	Article/ Modified force method for the nonlinear analysis of FRP reinforced concrete beams	1.10
10	Article/ An inverse analysis approach based on a POD direct model for the mechanical characterization of metallic materials	1.20
11	Article/ Elasto-plastic debonding strength of tensile steel/CFRP joints	1.30
12	Article/ Fatigue performance of tensile steel members strengthened with CFRP plates	1.30
13	Article/ A constitutive model of metal-ceramic functionally graded material behaviour: formulation and parameter identification	1.20
14	Article/ Indentation and imprint mapping method for identification of residual stresses	1.20
15	Article/ Parameter identification in anisotropic elastoplasticity by indentation and imprint mapping	1.30
16	Article/ Shakedown analysis of train wheels by Fourier series and nonlinear programming	1.10
17	Article/ Prediction of debonding strength of tensile steel/CFRP joints using fracture mechanics and stress based criteria	1.25
18	Article/ Indentation and imprint mapping for the identification of interface properties in film substrate systems	1.10
19	Article/ On the elasto-plastic behavior of continuous steel beams reinforced by bonded CFRP lamina	1.10
20	Article/ Identification of the material properties of Al 2024 alloy by means of inverse analysis and indentation tests	1.20
21	Article/ Algebrized approach for the finite element analysis of heterogeneous viscoelastic structures	1.00
22	Article/ Energy-based analytical formulation for the prediction of end debonding in strengthened steel beams	1.00
23	Article/ Identification of the hygro-thermo-chemical-mechanical model parameters of concrete through inverse analysis	1.10
24	Article/ Mechanical characterization of anisotropic elastoplastic materials by indentation curves only	1.10
	TOTAL	28.5

#### Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The 24 submitted publications, mainly in Q1 and Q2 quartile, were ranked in the table above, assigning a maximum score of 1.5 to each one. The Selection Board assesses a very positive evaluation of the scientific publications presented by the candidate.

The candidate is author/co-author of 93 publications, 50 of which in scientific journals with a satisfactory relevance. The candidate has from the Scopus database a total number of citations equal to 1383 and an h-index equal to 20. The overall scientific production is very good and continuous in time. The scientific activity of the candidate focuses on parameters identification of a cyclic cohesive zone model, simulation of fatigue crack propagation in steel and concrete-FRP bonded interface, rate dependent analysis of FRP bonded interface under dynamic loads, mode I fatigue crack propagation in CFRP strengthened steel plates, intermediate crack induced reinforcement debonding under fatigue

loading in strengthened steel beams, identification of a chemo-physical model for concrete, pushover analysis of masonry towers, non-linear analysis of FRP reinforced concrete beams, inverse analysis for the mechanical characterization of anisotropic elasto-plastic materials, homogeneous and functionally graded materials, residual stresses evaluation, elasto-plastic debonding strength and fatigue performance of CFRP-steel joints, elasto-plastic analysis of steel beams reinforced by bonded CFRP plates, shakedown analysis of train wheels, finite element analysis of heterogeneous viscoelastic structures.

The overall scientific production is assessed 3/4.

#### DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

Starting from the academic year 2005-2006 the candidate has been teacher in 33 courses. He is Member of the Board of the PhD program "Preservation of the Architectural Heritage", Politecnico di Milano since 2017, taking care of the periodic review of the PhD theses related to the structural behaviour of existing buildings. He was the teacher in one PhD courses at Politecnico di Milano.

Globally, the teaching activity of the candidate is very satisfactory. It is assessed 36/40.

#### SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate was the coordinator of the project "Characterization and modeling of an innovative composite material for enhancing the performance of friction pendulum seismic isolators" funded by Politecnico di Milano and of the project "Composite materials for high-performance buildings", funded by the University of Sydney (AUS). He was Scientific Responsible of 19 research projects from 2007-2022 funded by private companies. In particular, "Stress and strain analysis of a wind turbine blade Gen K50", funded by Covet Spa (2007); "Seismic vulnerability analysis of the Gabbia Tower in Mantua", funded by the Municipality of Mantua (2012); "Analysis of the seismic response of Schock connection systems", funded by Schock Italia Srl (2013); "Static analysis of the main spire of the Duomo di Milano", funded by Veneranda fabbrica del Duomo of Milan (2017); "Time-dependent behavior of normal and self-compacting concrete", funded by Swiss Beton Technology SA (2015); "Shrinkage effect on precast concrete elements", funded by Progress SpA (2016); "Seismic vulnerability analysis of Villa San Carlo Borromeo a Senago" (2016), "Static analysis of the Tiburio vaults of Duomo di Milano", funded by Veneranda Fabbrica del Duomo of Milan (2017), "Seismic vulnerability analysis of the Mellini school building", funded by Municipality of Chiari (Bs) (2018), "Seismic vulnerability analysis of a historical masonry structure", funded by the Municipality of Mazzano (Bs) (2018); "Seismic vulnerability analysis of the Toscanini school building", funded by Municipality of Chiari (Bs) (2018); "Finite Element Analysis of the Waste Heat Boiler Economizer MWHB-120066 under thermo-mechanical loading", funded by Tenova Spa (2018); "Definition of design guidelines of precast shear walls named Thermowand with non-dissipative behavior" (2018); "Structural Analysis of the Palazzo del Capitano in Mantua", funded by Complesso Museale di Palazzo Ducale of Mantua (2018); "Structural analysis of two existing bridges, belonging to the Italian cultural heritage", funded by Consorzio di Bonifica Dugali Naviglio Adda Serio (2021); "Seismic vulnerability analysis of three school buildings within the PNRR intervention lines", funded by Città Metropolitana di Milano (2022); "Seismic vulnerability analysis of the main hospital in Lodi (MI)", funded by Azienda Socio Sanitaria Territoriale di Lodi (LO) (2022); "Seismic vulnerability analysis of the Bestetti hangar in Arcore (MB)", funded by Municipality of Arcore (MB) (2022); "Long-term behavior of a newly produced concrete containing recycled material, coming from asphalt milling", funded by Drytech SA (2022).

Globally, the responsibility in research projects is satisfactory. It is assessed 10/15.

#### RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS:

The candidate does not report the participation in the creation of spin offs or the development, use and marketing of patents. Anyway, the technological transfer is proved by the numerous funded projects with private companies. It is assessed 0.5/5.

#### SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Since the publications of the candidate are in English, it is concluded that he has an excellent knowledge of this language.

**CANDIDATE: CARVELLI Valter**

#### CURRICULUM:

The candidate received the M.S. degree in Civil Engineering from University of Bologna in 1994 and the doctoral degree in Structural Engineering from Politecnico di Milano in 1999. He is associate professor at Politecnico di Milano since 2007. He was visiting researcher at the Doshisha University (JPN) in 2014, 2016 and 2019, at the Technische Universit

Kaiserslautern (DEU) in 2014 and 2016, at the University of Mons (BEL) in 1998 and German Aerospace Center, Braunschweig (DEU) in 1995. The candidate is member of the Editorial Board of 4 international journals, Review Editor of 2 international journals, member of the Advisory Board of one international journal and Guest Editor of a special issue of one international journal. He was member of the scientific committee of 17 international conferences and organizers of 8 mini-symposia in international conferences. The candidate was/is member of the Scientific Commission of the department ABC of the Politecnico di Milano from 2013-2016 and from 2020.

With reference also to the scientific production, didactic activity, funded research, and results from technology transfer evaluated below, the Selection Board formulates an extremely good evaluation of the candidate's curriculum.

SUBMITTED PUBLICATIONS:

No. of publications	Type/Title of Publication	Judgment
1	Article/ A micromechanical model for the analysis of unidirectional elastoplastic composites subjected to 3D stresses	1.10
2	Article/ Buckling Strength of GFRP Under-Water Vehicles	1.15
3	Article/ A homogenization procedure for the numerical analysis of woven fabric composites	1.35
4	Article/ Shakedown analysis of unidirectional fiber reinforced metal matrix composites	1.10
5	Article/ Mechanical modelling of monofilament technical textiles	1.20
6	Article/ Fatigue behaviour of concrete bridge deck slabs reinforced with GFRP bars	1.30
7	Article/ Fatigue behaviour of non-crimp 3D orthogonal weave and multi-layer plain weave E-glass reinforced composites	1.40
8	Article/ Fatigue and post-fatigue tensile behaviour of non-crimp stitched and unstitched carbon/epoxy composites	1.40
9	Article/ Deformability of a non-crimp 3D orthogonal weave E-glass composite reinforcement	1.25
10	Article/ High temperature effects on concrete members reinforced with GFRP rebars	1.10
11	Article/ Quasi-static and fatigue tensile behavior of a 3D rotary braided carbon/epoxy composite	1.40
12	Article/ Ageing of pultruded glass fibre reinforced polymer composites exposed to combined environmental agents	1.20
13	Article/ Micro-CT analysis of the internal deformed geometry of a non-crimp 3D orthogonal weave E-glass composite reinforcement	1.20
14	Article/ Cluster analysis of acoustic emission signals for 2D and 3D woven glass/epoxy composites	1.30
15	Article/ Numerical modelling of forming of a non-crimp 3D orthogonal weave E-glass composite reinforcement	1.30
16	Article/ Long-term bending performance and service life prediction of pultruded glass fibre reinforced polymer composites	1.25
17	Article/ Fatigue and Izod impact performance of carbon plain weave textile reinforced epoxy modified with cellulose microfibrils and rubber nanoparticles	1.40
18	Article/ Cement mortar reinforced with reclaimed carbon fibres, CFRP waste or prepreg carbon waste	1.20
19	Article/ Acoustic emission and damage mode correlation in textile reinforced PPS composites	1.35
20	Article/ Concrete cover effect on the bond of GFRP bar and concrete under static loading	1.10
21	Article/ A damage model for high-cycle fatigue behavior of bond between FRP bar and concrete	1.40
22	Article/ Quasi-static and fatigue performance of carbon fibre reinforced highly polymerized thermoplastic epoxy	1.40
23	Article/ High performance cementitious composite from alkali-activated ladle slag reinforced with polypropylene fibers	1.25

24	Article/ Fatigue damage characterization and percolation in plain-weave carbon fiber-epoxy composites	1.40
	TOTAL	30.5

#### Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The 24 submitted publications, mainly in Q1 quartile, were ranked in the table above, assigning a maximum score of 1.5 to each one. The Selection Board evaluates as extremely positive the scientific publications presented by the candidate.

The candidate is author/co-author of 219 publications, 87 of which in scientific journals with a significant relevance. The candidate has from the Scopus database a total number of citations equal to 2073 and an h-index equal to 28. The overall scientific production is extremely good and continuous in time. The scientific activity of the candidate focuses on structural mechanics of advanced composites with a 3D architecture, deformability and formability of dry reinforcement, quasi static and fatigue performance of textile reinforced composites, nano- and -micro particles modifications of the composite matrix, fatigue and thermomechanical behaviour of concrete structural components reinforced with composite materials, multi-scale modelling of advanced composite materials, micromechanical models to predict the 3D homogenized mechanical properties, analytical and numerical models at the meso-scale for dry textiles, macro scale modelling to investigate the deformability and formability of textile reinforcement, modelling of composite structures and composite reinforced concrete, multi-techniques experimental studies of textile reinforced composites and innovative cementitious materials, 3D digital image correlation, acoustic emission, SEM and X-ray tomography, characterization of the damage mode of textile composites, deformability and formability of 3D textile reinforcements, alkali-activated materials.

The overall scientific production is assessed 3.5/4.

DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

Starting from the academic year 2003-2004 the candidate has been teacher in 44 courses. He was the teacher in Master courses at Doshisha University (JPN) in 2015, 2017 and 2023. He gave lessons in 2015, 2016 and 2017 at the Ghent University (BEL) and 2015 at EMPA (CHE) in the framework of Marie Curie European Network ENDURE and COST action TU1207; in the period 2017-2023 at the University of Oulu (FIN), in 2015 at the Technische Universit Kaiserslautern (DEU) and in 2014 and 2018 at KU Leuven (BEL) in the framework of Staff Mobility for Teaching ERASMUS+. He is Member of the Board of the PhD program "A.B.C.", Politecnico di Milano since 2017. He was the teacher in 3 PhD courses and supervised 8 PhD thesis in the PhD program "A.B.C." at Politecnico di Milano.

Globally, the teaching activity of the candidate is very satisfactory. It is assessed 38/40.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate was scientific responsible of the Marie Curie Actions "ENDURE - European Network for Durable Reinforcement and Rehabilitation Solutions" funded by EU (2013-2017); of a grant from Fondazione Cariplo and Lombardy Region (2019-2021) on "Smart Valves based on Active Soft Materials"; of a grant from Lombardy Region (2012-2014) "BLUPIPE – Development of a composite material pipe" and of a Young Researcher grant of Politecnico di Milano (2001-2002). Finally, he was PI of 8 research projects funded by private companies. In particular, "Numerical modeling of concrete columns with carbon fiber laminate formwork", funded by CARMON@CARBON (2019); "Mechanical characterization of seam sealed assemblies", funded by W. L. GORE & Associates GmbH, (2014); "Fatigue behaviour of multiaxial carbon fiber reinforced composite materials made by RTM", funded by LAMIFLEX (2013); "Fatigue behaviour of carbon composite components made by RTM", funded by LAMIFLEX (2013); "Biaxial tensile behaviour of ribbons and technical textiles", funded by THALES ALENIA SPACE (2011); "Fatigue behaviour of composite materials after plasma processing", funded by ARIOLI (2010); "Static and fatigue tensile properties of 3D woven and 3D braided carbon fibre textile composites", funded by 3TEX Inc. (2009) and "Innovative devices for load cells testing", funded by DINI ARGE0 (2006).

Globally, the responsibility in research projects is very satisfactory. It is assessed 12/15.

RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS:

The candidate reports one patent and no participation in the creation of spin offs. The results from the technology transfer are assessed 1/5.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Since the publications of the candidate are in English, it is concluded that he has an excellent knowledge of this language.

CANDIDATE: CORBI Ottavia

CURRICULUM:

The candidate received the M.S. degree in Architecture in 1996 and the doctoral degree in Structural Engineering in 2000 from the University of Naples Federico II. She is associate professor at the University of Naples Federico II from 2004 and permanent honorary professor at Nanjing Forest University (CHN) from 2018. She is founder and Editor in chief of the open-access International Journal of Sustainable Structures, founder and chair of ACEM (advances in typical issue of structural engineering) and SBSM (biocomposite materials and structures) series of international scientific conferences and chair of 3 others international conferences. She is also associate editor of 4 international scientific journals and member of the editorial board of 14 international scientific journals. The candidate was Member of the Board of the Department of Structures for Architecture and Engineering, University of Naples Federico II, (2008-2014) and was/is member of the Educational Coordination Commission of 2 CDL at the same University (2014-2019 and 2019-2023).

With reference also to the scientific production, didactic activity, funded research, and results from technology transfer evaluated below, this Selection Board formulates a very good evaluation on the candidate's curriculum.

SUBMITTED PUBLICATIONS:

No. of publications	Type/Title of Publication	Judgment
1	Article/ Optimal Distribution of Linear Control Intensity over the Frequency Range	0.90
2	Article/ Shape Memory Alloys and Their Application in Structural Oscillations Attenuation	1.00
3	Article/ Dynamic Response and Control of Hysteretic Structures	1.00
4	Article/ Relationships of L.A. Theorems for NRT Structures by Means of Duality	1.10
5	Article/ On Variational Approaches in NRT Continua	1.20
6	Article/ Stress Analysis of Masonry Vaults and Static Efficacy of FRP Repairs	1.20
7	Article/ On the Equilibrium and Admissibility Coupling in NRT Vaults of General Shape	1.10
8	Article/ An Approach to Masonry Structural Analysis by the No-Tension Assumption—Part I: Material Modeling, Theoretical Setup, and Closed Form Solutions	1.10
9	Article/ An Approach to Masonry Structural Analysis by the No-Tension Assumption—Part II: Load Singularities, Numerical Implementation and Applications	1.10
10	Article/ An approach to the positioning of FRP provisions in vaulted masonry structures	1.10
11	Article/ Contribution of the fill to the static behaviour of arched masonry structures: Theoretical formulation	1.10
12	Article/ Closed-form solutions for FRP strengthening of masonry vaults	1.10
13	Article/ Bounds on the Elastic Brittle solution in bodies reinforced with FRP/FRCM composite provisions	1.00
14	Article/ Stability of evolutionary brittle-tension 2D solids with heterogeneous resistance	1.00
15	Article/ Macro-mechanical modelling of pseudo-elasticity in shape memory alloys for structural applications	1.00
16	Article/ Analysis of bi-dimensional solids with internal unilateral constraint coupled to structural elements with different degree of connection	1.00
17	Article/ Combinational optimization for shaping discrete tensile boost elements in continuum structures	1.00
18	Article/ Development and implementation of a control system for the dynamic mitigation of 3-D masonry structures with feedback on the drifts in the horizontal plane	1.00



19	Article/ Slenderness Ratio Effect on Eccentric Compression Properties of Parallel Bamboo Strand Lumber Columns	1.00
20	Article/ Mechanical Properties of Laminated Bamboo Under Off-axis Compression	1.00
21	Article/ Mechanical properties of large-scale parallel bamboo strand lumber under local compression	1.00
22	Article/ Evaluation of axial capacity of engineered bamboo columns	1.00
23	Article/ Convolutional PD controller for hybrid improvement of dynamic structural systems	0.90
24	Article/ Optimum design of dynamic modal control algorithm using non-linear structural mathematical modelling	0.90
	TOTAL	24.8

**Overall collective judgement**

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The 24 submitted publications, mainly in Q1 and Q2 quartile, were ranked in the table above, assigning a maximum score of 1.5 to each one. The Selection Board assesses a very positive evaluation of the scientific publications presented by the candidate.

The candidate is author/co-author of 239 publications, 90 of which are in scientific journals with a satisfactory relevance. The candidate has from the Scopus database a total number of citations equal to 1626 and an h-index equal to 27. The overall scientific production is very good and continuous in time. The scientific activity of the candidate focuses on structural control, dynamic response and control of hysteretic structures, shape memory alloy for structural control and relevant macro-mechanical models, limit analysis theorems for no-tension materials, no-tension vaults of general shape, composite materials reinforced masonry structures, elasto-brittle continua with heterogeneous resistance reinforced with composite materials, control systems for 3D masonry structures, optimization of the composite reinforcement arrangements in masonry structures, axial capacity of engineered (PBSL and laminated) bamboo columns, mechanical properties of PBSL bamboo column under local compression, optimum design of dynamic modal control algorithms. The overall scientific production is assessed 3/4.

DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

Starting from the academic year 2001-2002 the candidate has been teacher in 65 courses. She was member of the PhD Board in "Evaluation Methods for Integrated Conservation, Recovery, Maintenance and Management of the Architectural, Urban and Environmental Heritage", University of Naples "Federico II" from 2012-2015 and member of the PhD Board in "Structural Engineering, Geotechnics, and Seismic Risk" from 2015-2023. She was co-supervisor of one PhD thesis at the Second University of Naples and supervisor of one PhD thesis at the University of Naples "Federico II". She gave seminars in PhD courses at University of Basilicata, Polytechnic of Bari and at the Nanjing Forestry University. Globally, the teaching activity of the candidate is very satisfactory. It is assessed 36/40.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate was scientific responsible of a two year project "Numerical-experimental investigation of the dynamic mitigation effects induced by liquid dampers" (since 2006) and 7 RELUIS projects "Seismic Isolation and Dissipation" from 2014-2023. Globally, the responsibility in research projects is satisfactory. It is assessed 9/15.

RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS:

The candidate reports 2 patents and no participation in the creation of spin offs. The results from the technology transfer are assessed 2/5.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Since the publications of the candidate are in English, it is concluded that she has an excellent knowledge of this language.

CANDIDATE: FEDELE Roberto

CURRICULUM:

The candidate received the master degree in 1999 and the doctoral degree in 2003 from Politecnico di Milano. He is associate professor at Politecnico di Milano from 2014. He was guest researcher at the Ecole Central de Nantes (FRA) in 2017-2018, invited researcher at the Swiss Federal Laboratories for Materials Science and Technology (EMPA) (CHE) in 2017, invited researcher at the Center for High-Temperature Studies at Foundry Research Institute in Krakow (POL) in 2016 and visiting researcher and visiting professor at Cachan LMT (FRA) in 2007-2008-2010-2011. The candidate is member of the Editorial Board of 2 international journals, review editor of one international journal and co-organizer of 9 mini-symposia in national and international conferences. The candidate was member of the Scientific Commission of the department DICA of the Politecnico di Milano in 2013-2014.

With reference also to the scientific production, didactic activity, funded research, and results from technology transfer evaluated below, this Selection Board formulates a very good evaluation of the candidate's curriculum.

SUBMITTED PUBLICATIONS:

No. of publications	Type/Title of Publication	Judgment
1	Article/ Piola's approach to the equilibrium problem for bodies with second gradient energies. Part I: First gradient theory and differential geometry	1.20
2	Article/ Approach à la Piola for the equilibrium problem of bodies with second gradient energies. Part II: Variational derivation of second gradient equations and their transport	1.20
3	Article/ Third gradient continua: nonstandard equilibrium equations and selection of work conjugate variables	1.00
4	Article/ Deformation induced coupling of the generalized external actions in third-gradient materials	1.00
5	Article/ Analysis, Design and Realization of a Furnace for In Situ Wettability Experiments at High Temperatures under X-ray Microtomography	0.80
6	Article/ Computational prediction of strain-dependent diffusion of transcription factors through the cell nucleus	1.20
7	Article/ Fast and reliable non-linear heterogeneous FE approach for the analysis of FRP-reinforced masonry arches	1.20
8	Article/ Simultaneous Assessment of mechanical properties and boundary conditions based on Digital Image Correlation	1.00
9	Article/ Delamination tests on CFRP-reinforced masonry pillars: optical monitoring and mechanical modelling	1.10
10	Article/ Assessment of curved FRP-reinforced masonry prisms: experiments and modelling	1.30
11	Article/ Characterization of innovative CFC/Cu joints by full-field measurements and finite elements	0.90
12	Article/ Global 2D Digital Image Correlation for motion estimation in a finite element framework: a variational formulation and a regularized, pyramidal, multi-grid implementation	1.10
13	Article/ A regularized, pyramidal multi-grid approach to global 3D-Volume Digital Image Correlation based on X-ray micro-tomography	0.90
14	Article/ Experimental and Theoretical Issues in FRP-Concrete Bonding	1.10
15	Article/ Three dimensional effects induced by FRP-from masonry delamination	1.20
16	Article/ Characterization of a cohesive-zone model describing damage and de-cohesion at bonded interfaces. Sensitivity analysis and pseudo-experimental parameter identification	1.20
17	Article/ Identification of adhesive properties in GLARE laminates by Digital Image Correlation	1.00
18	Article/ A chemo-thermo-damage model for concrete affected by alkali-aggregate reaction	1.30
19	Article/ Flat-jack tests and inverse analysis for the identification of stress states and elastic properties in concrete dams	0.90
20	Article/ Stochastic calibration of local constitutive models through measurements at the macroscale in heterogeneous media	1.00

21	Article/ Health assessment of concrete dams by overall inverse analyses and neural networks	0.90
22	Article/ Constitutive model calibration for railway wheel steel through tension-torsion tests	1.00
23	Article/ Identification of elastic stiffness and local stresses in concrete dams by in situ tests and neural networks	0.90
24	Article/ Parameter identification by Kalman filter of a cohesive crack model	1.10
	TOTAL	25.5

**Overall collective judgement**

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The 24 submitted publications, mainly in Q1 and Q2 quartile, were ranked in the table above, assigning a maximum score of 1.5 to each one. The Selection Board evaluates as very positive the scientific publications presented by the candidate.

The candidate is author/co-author of 132 publications, 33 of which are in scientific journals with a satisfactory relevance. The candidate has from the Scopus database a total number of citations equal to 1082 and an h-index equal to 20. The overall scientific production is very good. The scientific activity of the candidate focuses on higher-order gradient continua, continuous mechanics, X-ray microtomography, biomechanical models, analysis of FRP reinforced masonry arches, digital images correlation for the assessment of mechanical properties, mechanical modelling of debonding tests on CFRP reinforced masonry elements, material characterization by full-field measurements and FE, numerical strategies for digital image correlation in mechanics of material, cohesive zone model for interface damage and reinforcement debonding, chemo-physical models for damage of concrete elements, inverse analysis for the health assessment of concrete dams, constitutive models for railway wheels, use of neural network for the identification of material parameters.

The overall scientific production is assessed 3/4.

DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

As representative of the whole teaching activity, the candidate illustrates in detail the period 2016-2022 for a total of 20 courses. He was Member of the Board of the PhD program in Civil, Geotechnical Engineering from 2016-2021. He was the teacher in 4 doctoral courses at Politecnico di Milano in the Doctoral School in Structural, Geotechnical and Seismic Engineering and in one course at University of Trento in the Doctoral School of Civil Engineering. He was the co-supervisor of one PhD thesis. He gave lessons in 5 PhD courses at Politecnico di Milano. Globally, the teaching activity of the candidate is very satisfactory. It is assessed 36/40.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate was scientific responsible of two projects funded by INSP for a 3-year PhD position in 2021-2022 and 2022-2023; PI of 18 months project "BridgedJoint" (from 2016-2018) funded by Regione Lombardia and Cariplo Foundation and reserved to ERC finalists achieving a high score ("B") after panel interview; PI of the project "Project CINEMAT, based on X-ray microTomography: from images to material properties funded by Politecnico di Milano (from 2011-2012); PI of 18 months project "Innovative joints between metals and ceramics for high and ultra-high temperature applications (UHT)" (from 2011-2013) funded by Cariplo Foundation; Local Coordinator of a Research Unit in PRIN '07 granted by MIUR (2008-2010); PI of a project granted by Fondazione Banca del Monte di Lombardia (2011); Coordinator of a research group within a MISE-ICE-CRUI project. He was also the Scientific Responsible of three short contracts with private companies in 2013, 2016 and 2023.

Globally, the responsibility in research projects is very satisfactory. It is assessed 12/15.

RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS:

The candidate does not report the participation in the creation of spin offs or the development, use and marketing of patents. Anyway, the technological transfer is proved by the numerous funded projects. It is assessed 0.5/5.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Since the publications of the candidate are in English, it is concluded that he has an excellent knowledge of this language.

CANDIDATE: PLACIDI Luca

CURRICULUM:

The candidate graduated in physics at the University of Naples Federico II in 2001 and in Mechanical Engineering from Virginia Tech (USA) in 2002. He received a PhD degree in Mechanik from Technische Universität Darmstadt (DEU) in 2004 and a second PhD degree in Theoretical and Applied Mechanics from University La Sapienza in 2006. He is associate professor at the International Telematic University UNINETTUNO from 2019. He spent several research periods abroad: in 2005 at the Low Temperature Institute University (Hokkaido) of Sapporo (JPN); in 2007 at the Poly Technical University of New York (USA); in 2007 and 2015 at the Institut de Mathématiques de Toulon et du Var (FRA); in 2015 at the Université Paris-Est Créteil Val de Marne (FRA); in 2016 at the Laboratoire de Géologie (Ecole Normale Supérieure) (FRA). The candidate is member of the Editorial Board of Nanomechanics Science and Technology: An International Journal, Vestnik of Tomsk State University of Architecture and Building, BMC Mechanical Engineering, Continuum Mechanics and thermodynamics and The Russian Automobile and Highway Industry Journal. He is a member of the Scientific Committee of the EUROMECH-Colloquium 579 and member of the “Mathematics and Mechanics of Complex Systems” (M&MOCS). He organized a mini symposium in an international conference.

With reference also to the scientific production, didactic activity, funded research, and results from technology transfer evaluated below, this Selection Board formulates a very good evaluation of the candidate’s curriculum.

SUBMITTED PUBLICATIONS:

No. of publications	Type/Title of Publication	Judgment
1	Article/ A mixture theory framework for modeling mechanical actuation of ionic polymer metal composites	1.15
2	Article/ Continuum-mechanical, Anisotropic Flow model, based on an anisotropic Flow Enhancement factor	1.05
3	Article/ Microcantilever dynamics in tapping mode atomic force microscopy via higher eigenmodes analysis	1.05
4	Article/ Reflection and transmission of plane waves at surfaces carrying material properties and embedded in second gradient materials	1.20
5	Article/ At the origins and in the vanguard of peridynamics, non-local and higher gradient continuum mechanics. An underestimated and still topical contribution of Gabrio Piola	1.30
6	Article/ Gedanken experiments for the determination of two-dimensional linear second gradient elasticity coefficients	1.15
7	Article/ A variational approach for a nonlinear one-dimensional damage-elasto-plastic second-gradient continuum model	1.20
8	Article/ A second gradient formulation for a 2D fabric sheet with inextensible fibres	1.25
9	Article/ Identification of two-dimensional pantographic structure via a linear D4 orthotropic second gradient elastic model	1.15
10	Article/ Discrete and continuous aspects of some metamaterial elastic structures with band gaps	1.05
11	Article/ Energy approach to brittle fracture in strain gradient modelling	1.30
12	Article/ A strain gradient variational approach to damage. A comparison with damage gradient models and numerical results	1.25
13	Article/ Two-dimensional strain gradient damage modeling: a variational approach	1.25
14	Article/ Pantographic beam: A complete second gradient 1D-continuum in plane	1.10
15	Article/ A novel structural resilience index: definition and applications to frame structures	1.10
16	Article/ Granular micromechanics-based identification of isotropic strain gradient parameters for elastic geometrically nonlinear deformations	1.00
17	Article/ A damaged non-homogeneous Timoshenko beam model for a dam subjected to aging effects	1.15

18	Article/ Identification of a geometrically nonlinear micromorphic continuum via granular micromechanics	1.10
19	Article/ Micromechanics-based elasto-plastic–damage energy formulation for strain gradient solids with granular microstructure	1.10
20	Article/ Hemivariational continuum approach for granular solids with damage-induced anisotropy evolution	1.15
21	Article/ A block-based variational elasto-damage model for masonry analysis inspired from granular micromechanics: Preliminary study	1.00
22	Article/ Micro-mechano-morphology-informed continuum damage modeling with intrinsic 2nd gradient (pantographic) grain-grain interactions	1.25
23	Article/ On a hemi-variational formulation for a 2D elasto-plastic-damage strain gradient solid with granular microstructure	0.90
24	Article/ Solution of a paradox related to axial pull out of a bar from a concrete cylindrical elastic domain in standard first gradient 3D Isotropic elasticity	1.10
	TOTAL	27.3

#### Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The 24 submitted publications, mainly in the Q1 and Q2 quartile, were ranked in the table above, assigning a maximum score of 1.5 to each one. The Selection Board assesses a very positive evaluation of the scientific publications presented by the candidate.

The candidate is author/co-author of 211 publications, 89 of which are in scientific journals with a satisfactory relevance. The candidate has from the Scopus database a total number of citations equal to 4944 and an h-index equal to 41. The overall scientific production is very good and continuous in time. The scientific activity of the candidate focuses on micro-structured continua, granular micromechanics, damage and plasticity, variational approach and numerical simulation, second gradient continua, anisotropic constitutive law, aging, resilience, robust and compartmentalized structures, propagation of bulk waves, theory of mixture, soil mechanics and fluid saturated porous media, and polycrystalline material.

The overall scientific production is assessed 3/4.

DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

Starting from the academic year 2011-2012 the candidate has been teacher in 46 courses. He is Member of the Board of the PhD program in “Mathematics and models”, University of L’Aquila in the period 2017-2022, of the PhD program in “Ingegneria dell’Innovazione Tecnologica” of the International Telematic University UNINETTUNO since 2022 and of the National Doctoral School in “Defense against natural risks and ecological transition of built environment” of the University of Catania since 2022. He supervised 3 PhD theses at the Università degli Studi dell’Aquila. He gave lessons from 2018 to 2020 within the doctoral school in “Mathematics and models” of the University of L’Aquila.

Globally, the teaching activity of the candidate is very satisfactory. It is assessed 36/40.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate was the scientific responsible of a research project “Effetti della caduta massi su costruzioni e infrastrutture civili e industriali” based on a grant of the Valle d’Aosta Region (2014-2018), co-responsible of two projects from CNRS International Associate Laboratory Coss&Vita (2015-2016), responsible of the project POR FESR LAZIO AVVISO BIOEDILIZIA E SMART BUILDING (2018-2019) and responsible of the RESBA project “Modellazioni analitiche del degrado” with Politecnico di Torino (2018-2021).

Globally, the responsibility in research projects is partially satisfactory. It is assessed 6/15.

RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS:

The candidate reports one patent and no participation in the creation of spin offs. The results from the technology transfer are assessed 1/5.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Since the publications of the candidate are in English, it is concluded that he has an excellent knowledge of this language.

**CANDIDATE: TORNABENE Francesco**

**CURRICULUM:**

The candidate received the M.S. degree in Mechanical Engineering in 2003 and the doctoral degree in Mechanic of Structures in 2007 from the University of Bologna. He is associate professor at the University of Salento (LE) from 2022. The candidate is editor-in-chief of Curved and Layered Structures from 2014, Journal of Composite Science from 2017 and Characterization and Application of Nanomaterials from 2022. He is also editor and co-editor of 6 International Journal, Associate Editor of 2 International Journal, Guest Editor of 19 Special Issue and Member of the Editorial Board of 52 International Journal. The candidate is President of the Civil Engineering Steering Committee and Vice-President of Didactic Council of Civil Engineering at the Department of Innovation Engineering, University of Salento. He is also Member of 3 Working Group for the Didactic Council of Industrial Engineering at the same university.

With reference also to the scientific production, didactic activity, funded research, and results from technology transfer evaluated below, this Selection Board formulates a very good evaluation of the candidate's curriculum.

**SUBMITTED PUBLICATIONS:**

No. of publications	Type/Title of Publication	Judgment
1	Article/ Analytical and Numerical Results for Vibration Analysis of Multi-Stepped and Multi-Damaged Circular Arches	1.25
2	Article/ Non-singular Term effect on the Fracture Quantities of a Crack in a Piezoelectric Medium	1.25
3	Article/ Nonconservative Stability Problems via Generalized Differential Quadrature Method	1.00
4	Article/ Free Vibration Analysis of Functionally Graded Conical, Cylindrical Shell and Annular Plate Structures with a Four-parameter Power-Law Distribution	1.30
5	Article/ Free Vibrations of Anisotropic Doubly-Curved Shells and Panels of Revolution with a Free-Form Meridian Resting on Winkler-Pasternak Elastic Foundations	1.15
6	Article/ Radial Basis Function Method Applied to Doubly-Curved Laminated Composite Shells and Panels with a General Higher-Order Equivalent Single Layer Theory	1.15
7	Article/ Free Vibrations of Free-Form Doubly-Curved Shells Made of Functionally Graded Materials Using Higher-Order Equivalent Single Layer Theories	1.25
8	Article/ The Local GDQ Method Applied to General Higher-Order Theories of Doubly-Curved Laminated Composite Shells and Panels: the Free Vibration Analysis	1.20
9	Article/ Strong Formulation Finite Element Method Based on Differential Quadrature: a Survey	1.30
10	Article/ Stress and Strain Recovery for Functionally Graded Free-Form and Doubly-Curved Sandwich Shells Using Higher-Order Equivalent Single Layer Theory	1.35
11	Article/ The Local GDQ Method for the Natural Frequencies of Doubly-Curved Shells with Variable Thickness: A General Formulation	1.25
12	Article/ General Higher Order Layer-Wise Theory for Free Vibrations of Doubly-Curved Laminated Composite Shells and Panels	1.10
13	Article/ Higher-Order Structural Theories for the Static Analysis of Doubly-Curved Laminated Composite Panels Reinforced by Curvilinear Fibers	1.10
14	Article/ On the Mechanics of Laminated Doubly-Curved Shells Subjected to Point and Line Loads	1.35
15	Article/ Effect of Agglomeration on the Natural Frequencies of Functionally Graded Carbon Nanotube-Reinforced Laminated Composite Doubly-Curved Shells	1.15
16	Article/ A Posteriori Stress and Strain Recovery Procedure for the Static Analysis of Laminated Shells Resting on Nonlinear Elastic Foundation	1.20

17	Article/ Stability and Accuracy of Three Fourier Expansion-Based Strong Form Finite Elements for the Free Vibration Analysis of Laminated Composite Plates	1.15
18	Article/ Mechanical Behaviour of Composite Cosserat Solids in Elastic Problems with Holes and Discontinuities	1.10
19	Article/ Strong and Weak Formulations Based on Differential and Integral Quadrature Methods for the Free Vibration Analysis of Composite Plates and Shells: Convergence and Accuracy	1.25
20	Article/ On the Critical Speed Evaluation of Arbitrarily Oriented Rotating Doubly-Curved Shells Made of Functionally Graded Materials	1.15
21	Article/ Strong Formulation Isogeometric Analysis for the Vibration of Thin Membranes of General Shape	1.25
22	Article/ Free Vibration Analysis of Arbitrarily Shaped Functionally Graded Carbon Nanotube-Reinforced Plates	1.20
23	Article/ Higher Order Theories for the Vibration Study of Doubly-Curved Anisotropic Shells with a Variable Thickness and Isogeometric Mapped Geometry	1.20
24	Article/ Generalized Higher Order Layerwise Theory for the Dynamic Study of Anisotropic Doubly-Curved Shells with a Mapped Geometry	1.15
	TOTAL	28.8

#### Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE:

The 24 submitted publications, mainly in the Q1 quartile, were ranked in the table above, assigning a maximum score of 1.5 to each one. The Selection Board evaluates as very positive the scientific publications presented by the candidate.

The candidate is author/co-author of 333 publications, 213 of which are in scientific journals with a significant relevance. The candidate has from the Scopus database a total number of citations equal to 11684 and an h-index equal to 66. The overall scientific production is extremely good and continuous in time. The scientific activity of the candidate focuses on the structural mechanics of composite structures such as plates and shells (singly curved and doubly-curved), arches with variable cross-section and curvature and theory of beams. Computational mechanics methods such as generalized differential and integral quadrature method, finite element, strong formulation finite elements and time integration methods. Innovative materials and smart structures such as functionally graded materials (with power law distribution, Weibull distribution and exponential distribution to define the volume fraction of the constituents), carbon nanotubes and variable angle-tow composites. Fracture mechanics of orthotropic and piezoelectric materials. Non-conservative stability problems.

The overall scientific production is assessed 3.5/4.

DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES:

Starting from the academic year 2012-13 the candidate has been teacher in 22 courses. He was member at the University of Bologna in the period 2017-2020 of the Board of the PhD program in "Civil, Chemical, Environmental and Materials Engineering" and he was member at the University of Salento in the period 2021-2022 of the Board of the PhD programs in "Structure and Nanotechnology Engineering" and in "Engineering for the Sustainability and Safety of Civil and Industrial Constructions". He was the advisor of 2 PhD students at the University of Bologna. He gave seminars in PhD courses at University of Bologna and Politecnico di Torino.

Globally, the teaching activity of the candidate is very satisfactory. It is assessed 36/40.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate was scientific responsible of the project FFABR2017 (2017) granted by ANVUR. Globally, the responsibility in research projects is relatively low. It is assessed 2/15.

RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS:

The candidate reports one patent and no participation in the creation of spin offs. The results from the technology transfer are assessed 1/5.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Since the publications of the candidate are in English, it is concluded that he has an excellent knowledge of this language.

THE SELECTION BOARD

*Prof. TORRES LLINAS Lluís (Chairman)*

*Prof. BALÁZS György László (Member)*

*Prof. COLOMBI PIERLUIGI (Secretary)*

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# POLITECNICO MILANO 1863

PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2429 OF 01/03/2023 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 14/3/2023, n.20 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 08/B2 - STRUCTURAL MECHANICS - SDS ICAR/08 - STRUCTURAL MECHANICS, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF ARCHITECTURE, BUILT ENVIRONMENT AND CONSTRUCTION ENGINEERING (PROCEDURE CODE 2023\_PRO\_DABC\_3).

ATTACHMENT No. 2 to the 2nd MINUTES

## MERIT RANKING

SURNAME AND NAME	Overall score
Carvelli Valter	85.0
Bocciarelli Massimiliano	78.0
Fedele Roberto	77.0
Corbi Ottavia	74.8
Placidi Luca	73.3

Milan, 11/07/2023

THE SELECTION BOARD

*Prof. TORRES LLINAS Lluis (Chairman)*

*Prof. BALÁZS György László (Member)*

*Prof. COLOMBI PIERLUIGI (Secretary)*

*Bal*