

PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2023_PRO_DABC_5 OF 06/10/2023 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 27/10/2023, n. 82 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 08/B3 – STRUCTURAL ENGINEERING - SDS ICAR/09 – STRUCTURAL ENGINEERING, 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_5).

FINAL REPORT

The Selection Board, appointed with RD Index No. 14473 ref. No. 279938 of 28 November 2023, composed by the following Professors:

Prof. PISANI Marco Andrea - Politecnico di Milano;
Prof. BALLARINI Roberto - University of Houston;
Prof.ssa PANTAZOPOULOU Stavroula - York University, Canada,

met on 17/01/2024 at 16.00 (CET), 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:

Professor BALLARINI Roberto, University of Houston, Chairman;
Professor PISANI Marco Andrea, 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 28/02/2024 at 16.00 (CET), the Selection Board met for the second teleconference meeting.
Each board member was connected from his/her workstation, as specified below:

- Prof. PISANI Marco Andrea	at Politecnico di Milano
- Prof. BALLARINI Roberto	at University of Houston
- Prof.ssa PANTAZOPOULOU Stavroula	at York University

The Selection Board inspected the list of applicants, who were:

- 1) Cattaneo Sara
- 2) D'Antino Tommaso
- 3) Faber Michael Havbro
- 4) Focacci Francesco
- 5) Fragiacomio Massimo
- 6) Limongelli Maria Giuseppina

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. *Roberto Ballarini* (Chairman)

BALLARINI Roberto

Prof. *S. Pantazopoulou* (Member)

PANTAZOPOULOU Stavroula

Prof. *Marco A. Pisanì* (Secretary)

PISANI Marco Andrea



PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2023_PRO_DABC_5 OF 06/10/2023 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 27/10/2023, n. 82 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 08/B3 – STRUCTURAL ENGINEERING - SDS ICAR/09 – STRUCTURAL ENGINEERING, 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_5).

ATTACHMENT No. 1 to the FINAL REPORT

CRITERIA	Quality of the scientific papers presented	Judgment of the entire scientific production	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
Cattaneo Sara	49.8	4	24	7.5	6.8	92.1
D'Antino Tommaso	50.0	5.4	20	7	7.5	89.9
Faber Michael Havbro	34.1	5.3	20	7.5	4	70.9
Focacci Francesco	49.1	2.6	20	7.5	8	87.2
Fragiacomo Massimo	44.1	5	24	7.5	7.5	88.1
Limongelli Maria Giuseppina	47.3	3.6	24	8	4	86.9

CANDIDATE: Cattaneo Sara

CURRICULUM:

The candidate received an M.S. degree in Structural Engineering in 1996, and a Ph.D degree in structural engineering in 2000. He is currently Associate Professor at the Department of Architecture, Built environment and Construction Engineering of Politecnico di Milano. She is the scientific director of the I-MAS laboratory– Innovative materials and systems – of the Department of Architecture, Built environment and Construction Engineering of Politecnico di Milano. Moreover, she is technical head of the section “CE Marking- Structural anchors” of the Materials Testing Laboratory (LPM) of Politecnico di Milano. The candidate is member of the Board of the Ph.D in “Architecture, Construction engineering and Built environment” at Politecnico di Milano. The candidate is also: Expert in the Working Group EOTA appointed by the Italian Council of public works – STC since 2014, expert of Group Fixing EOTA (European Organization Technical Approval) appointed by ITC-CNR (Italian Institute of Technology - National Council of Research) since 2017, expert of group STEMI (technological structure for the ecological transition of mobility and infrastructures) appointed by Italian Ministry of Transport and Infrastructure and Technical Consultant for the Laboratorio Prove Materiali (LPM) of Politecnico di Milano since 2012, reviewer of National Research Projects (MIUR-Italy, FWF- Austrian

Science Fund,Georgian National Foundation) since 2007 and review editor in Computational Methods in Structural Engineering, Journal Frontiers in Built Environment since 2018.

Also based on the scientific, didactic, funded research and technology transfer activities commented in what follows, the Selection Board expresses a fully positive evaluation on the candidate curriculum.

SUBMITTED PUBLICATIONS:

No. of pub.	Type/Title of Publication	Judgment
1	Paper on a journal/Acoustic emission at failure in quasi-brittle materials	3.5
2	Paper on a journal/Assessment of the tensile behavior of twisted steel connectors for masonry retrofitting	3.3
3	Paper on a journal/Assessing method of shear strength between old to new concrete interface under cycling loading	3.1
4	Paper on a journal/Size and shape effect in the pull-out of FRP reinforcement from concrete	2.9
5	Paper on a journal/Post-failure behavior of 2-ply laminated glass plates with different interlayers	3.2
6	Paper on a journal/Constitutive relationships of different interlayer materials for laminated glass	3.4
7	Paper on a journal/Progressive damage and fracture of laminated glass beams	3.8
8	Paper on a journal/Tensile behavior of different anchor channel connections	3.1
9	Paper on a journal/Wedge-Type Expansion Anchors in High-Performance Concrete	3.8
10	Paper on a journal/Response of steel fiber reinforced high strength concrete beams: Experiments and code predictions	3.6
11	Paper on a journal/Damage in glass-concrete composite panels	3.4
12	Paper on a journal/Flexural behaviour of reinforced, prestressed and composite self-consolidating concrete beams	3.4
13	Paper on a journal/Assessment of Thermal Damage in Hybrid Fiber-Reinforced Concrete	3
14	Paper on a journal/Bond between Steel and Self-Consolidating Concrete: Experiments and Modeling	3.3
15	Paper on a journal/A simple model to explain the effect of different boundary conditions in direct tensile tests	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 candidate's global scientific production is fully congruent with the scientific disciplinary sector for which this selection procedure was announced and is carried out with excellent temporal continuity and good intensity.

The research topics addressed are essentially five and concern materials and applications that are very different from one another, namely:

- mechanical properties of cementitious and quasi-brittle materials
- behavior of reinforced and prestressed concrete structures
- numerical and experimental studies on the behavior of pre and post-installed anchors
- behaviour of structural glass elements
- structural rehabilitation of concrete and masonry, with special regard to interface behaviour and twisted steel connector application.

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

The candidate currently carries out an intense teaching activity on central topics in the field of structural engineering within master's degree courses, and has held several courses on structural design and strengthening of historical buildings since 2001. She is also active in doctoral activities and post-graduate specialization (the so-called Masters) with lectures and courses. The candidate has been supervisor of a large number of theses at all three levels (Bachelor, Master of Science, PhD). The judgment of this activity is excellent.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

From 2004 to today the candidate has been responsible of a lot of industry funded research projects. The judgment of this activity is very good.

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

No spin-offs nor patents are reported. Technology transfer has been however promoted through the participation (and in some cases leadership) to many continuing education courses (starting from 2004) and through numerous projects with private companies for the development of their patents.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Based on the English language used in the candidate's publication, it can be inferred that the candidate has a very good knowledge of this language.

CANDIDATE: D'Antino Tommaso

CURRICULUM:

The candidate received an M.S. degree (cum laude) in Civil Engineering in 2007, and a Ph.D degree in Civil Engineering in 2010. He is currently Associate Professor at the Department of Architecture, Built environment and Construction Engineering of Politecnico di Milano. The candidate is member of the Board of the Ph.D in "Architecture, Construction engineering and Built environment" at Politecnico di Milano. He is Associate Editor of the Journal of Composites for Construction, ASCE since 2022, Member of the Editorial Advisory Board of Structural Concrete, Journal of the fib since 2018, Review Editor for Structural Materials, Journal Frontiers in Materials since 2020 and Review Editor for Earthquake Engineering, Journal Frontiers in Built Environment since 2020. The candidate has been and, in many cases, still is a member of various Research Committees headed by international organizations, including the ACI (American Concrete Institute), the IABSE (International Association of Bridge and Structural Engineering), the fib (International Federation of Structural Concrete) and national, including CNR (Italian National Research Council). He is also Technical Consultant for the Laboratorio Prove Materiali (LPM) of the Politecnico di Milano to perform standard and innovative tests on steel, concrete, and composite specimens, and structures since 2015 and member of the ASTM International (American Society for Testing and Materials) - Committee C09 on concrete and concrete aggregates since 2019.

Also based on the scientific, didactic, funded research and technology transfer activities commented in what follows, the Selection Board expresses a very positive evaluation on the candidate curriculum.

SUBMITTED PUBLICATIONS:

No. of pub.	Type/Title of Publication	Judgment
1	Paper on a journal/Matrix-fiber bond behavior in PBO FRCC composites: a fracture mechanics approach	3.9

2	Paper on a journal/Tensile and compressive behavior of thermoset and thermoplastic GFRP bars	3
3	Paper on a journal/Fatigue tensile testing of glass fiber-reinforced polymer reinforcing bars	3.1
4	Paper on a journal/Effect of bonded length on the load response and failure mode of pull-out tests of GFRP bars embedded in concrete	3.2
5	Paper on a journal/Tensile Testing of FRCM Coupons for Material Characterization: Discussion of Critical Aspects	3
6	Paper on a journal/Modeling the behavior of externally bonded reinforcement using a rigid-trilinear cohesive material law	3.8
7	Paper on a journal/A new predictive model for FRCM-confined columns: A reflection on the composite behavior at peak stress	3.2
8	Paper on a journal/Advances in knowledge of the fracture properties of cohesive materials: fired- clay and tuff bricks	3.5
9	Paper on a journal/Shear strength model for RC beams with U-wrapped FRCM composites	3.1
10	Paper on a journal/Diagonal shear behavior of historic walls strengthened with composite reinforced mortar (CRM)	3.4
11	Paper on a journal/Intermediate crack induced debonding in steel beams reinforced with CFRP plates under fatigue loading	3.5
12	Paper on a journal/Three-dimensional numerical modeling of single-lap direct shear tests of FRCM-concrete joints using a cohesive damaged contact approach	3.1
13	Paper on a journal/Behavior of RC beams strengthened in shear with FRP and FRCM composites	3.7
14	Accuracy of design-oriented formulations for the evaluation of flexural and shear capacities of FRP strengthened	3.5
15	Fatigue and post-fatigue behavior of PBO FRCM-concrete joint	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 candidate's global scientific production is fully congruent with the scientific disciplinary sector for which the selection procedure was announced and is carried out with excellent temporal continuity and great intensity.

The research topics investigated essentially concern the use of innovative materials, especially in structural retrofitting of concrete and masonry structures, and can be summarized as follows:

- experimental investigations and numerical modelling of bond behavior between organic (FRP) and inorganic-matrix (FRCM/TRM) composites and concrete and masonry substrates, taking into account also fatigue and durability
- experimental, analytical, and numerical investigations and design formulas of RC beams strengthened in shear with organic- (FRP) and inorganic-matrix composites (FRCM/TRM)
- experimental, analytical, numerical investigation and design formulas of the mechanical behavior of masonry members strengthened with FRCM and composite reinforced mortar (CRM) systems
- mechanical, durability, and long-term (creep) behavior of glass FRP reinforcing bars

The candidate was awarded three times in conferences and workshops, plus an award as "outstanding reviewer" by ASCE in 2018.

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

Since 2016 the candidate has been active in teaching the Bachelor and Master's degrees. He does not report the number of theses (Bachelor, Master of Science degree) he has been supervisor. He is also active

in doctoral activities where he has been co-supervisor of two PhD students for 2017 to 2021 and now is supervisor of another two PhD students.

In 2022 he was Visiting Associate Professor at Case Western Reserve University in Cleveland, USA (where he had previously also been Visiting Researcher), while in 2014 he held two courses at the Ecole Nationale Supérieure des Travaux Publics in Yaoundé, Cameroon.

The judgment of this activity is good.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

From 2016 to today the candidate has been responsible of many industry funded research projects. The judgment of this activity is good.

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 in 2021 participated to the development and marketing of 2 patents (1. Elemento di rivestimento per l'impiego in edilizia e metodo per la sua realizzazione; 2. Metodo per realizzare la formatura e la finitura di un elemento di rivestimento accessorio per l'impiego in architettura e design). Activity developed within the project TEXTUDO - Hybrid and customizable surface for architecture and design made with cement paste and 3D fabric with preserved textile texture/pattern (BANDO POC - Programma ENTER 2021).

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Based on the English language used in the candidate's publication, it can be inferred that the candidate has a very good knowledge of this language.

CANDIDATE: Faber Michael Havbro

CURRICULUM:

The candidate received an M.S. degree in Structural Engineering – Offshore Specialization in 1985, and a Ph.D degree in Structural Engineering in 1989. He is currently Professor at Aalborg University, Denmark, where he is a member of the Risk, Resilience, Safety, and Sustainability of Systems Research Group, and Honorary Professor, Harbin Institute of Technology, HIT, Harbin, China. The candidate is the head of the Danish Centre for Risk and Safety Management at Aalborg University. In the past the candidate has held various roles in the university environment, including that of head of Civil Engineering Department, DTU-BYG (University) (DTU Civil Engineering, 2800 Kgs. Lyngby, Denmark).

Also based on the scientific, didactic, funded research and technology transfer activities commented in what follows, the Selection Board expresses an absolutely positive evaluation on the candidate curriculum.

SUBMITTED PUBLICATIONS:

No. of pub.	Type/Title of Publication	Judgment
1	Paper on a journal/On the assessment of robustness	2.5
2	Paper on a journal/Computing the value of information from periodic testing in holistic decision making under uncertainty	2.2
3	Paper on a journal/Consistent and coherent treatment of uncertainties and dependencies in fatigue crack growth calculations using multi-level Bayesian models	2
4	Paper on a journal/Bayesian framework for managing preferences in decision - making	2.2
5	Paper on a journal/Optimal and acceptable reliabilities for structural design	2.2
6	Paper on a journal/Sensitivities in structural maintenance planning	2

7	Paper on a journal/A computational framework for risk assessment of RC structures using indicators	2.2
8	Paper on a journal/Risk Management of Large RC Structures within Spatial Information System	2.2
9	Paper on a journal/Computational aspects of risk-based inspection planning	2.3
10	Paper on a journal/Probabilistic modelling of timber structures	2.2
11	Paper on a journal/Proof load testing for bridge assessment and upgrading	2.3
12	Paper on a journal/Aspects of parallel wire cable reliability	3
13	Paper on a journal/Socio -economically sustainable civil engineering infrastructures by optimization	2.2
14	Paper on a journal/Risk based inspection planning for structural systems	2.3
15	Paper on a journal/Risk assessment for civil engineering facilities: Critical overview and discussion	2.3

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 candidate's global scientific production is carried out with excellent temporal continuity and notable intensity and had three awards by international journals.

The candidate research is directed on engineering decision support with focus on:

- applied Bayesian decision analysis
- risk assessment
- probabilistic modeling of systems, vulnerability, robustness and resilience
- aspects of sustainable decision making
- value of information analysis
- life and health safety management
- natural hazards risk management
- consequence modelling
- Bayesian uncertainty modeling and Bayesian Probabilistic Nets
- Big Data technology and advanced techniques for probabilistic analysis and system identification
- probabilistic deterioration modeling
- risk informed assets integrity management

therefore, many papers cannot be considered closely related to the disciplinary scientific sector of the present public selection.

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

The candidate does not describe in detail the teaching activity carried out in his CV. In any case, starting from 2004 he has been Assistant (Tenure Track) Professor, then Associate Professor (Tenured) – Chair: Risk and Safety and then Professor – Chair Risk and Safety at ETH-Zurich. In 2011 he became Professor - Risk and Safety and Head of Civil Engineering Department at DTU-BYG (University), and finally Professor – Risk and Safety, and then of Risk Informed Decision Making at Aalborg University. The judgment of this activity is good.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

Although the economic value of each project is not quantified, the candidate was/is responsible for several COST (European Cooperation in Science and Technology) projects and many industry funded projects. The judgment is very good.

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

No spin-offs nor patents are reported. Technology transfer has been however promoted through the numerous projects with private companies.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Based on the English language used in the candidate's publication, it can be inferred that the candidate has a very good knowledge of this language.

CANDIDATE: Focacci Francesco

CURRICULUM:

The candidate received an M.S. degree (100/100) in Civil Engineering in 1995, and a Ph.D degree in Composite Materials for Civil Engineering in 1999. He is currently Associate Professor at the eCampus University (on-line university), Novedrate, CO, Italy. The candidate is member of the Board of the Ph.D in "Sciences applied to wellness and sustainability" at eCampus University . The candidate is also member of the ASTM International - Committee C09 on concrete and concrete aggregates since 2019 and member of the working group for the revision of the guideline: Guide for the Design and Construction of Externally Bonded FRP Systems for Strengthening Existing Structures - CNR-DT 200 R1/2013. In the near past he has been member of four Rilem and CNR (Italian National Research Council) committees.

Also based on the scientific, didactic, funded research and technology transfer activities commented in what follows, the Selection Board expresses a positive evaluation on the candidate curriculum.

SUBMITTED PUBLICATIONS:

No. of pub.	Type/Title of Publication	Judgment
1	Paper on a journal/Local bond-slip relationship for FRP reinforcement in concrete	3.8
2	Paper on a journal/Tensile Testing of FRCM Coupons for Material Characterization: Discussion of Critical Aspects	3
3	Paper on a journal/Effect of bonded length on the load response and failure mode of pull-out tests of GFRP bars embedded in concrete	3.2
4	Paper on a journal/Determination of the interfacial cohesive material law for SRG composites bonded to a masonry substrate	3.2
5	Paper on a journal/Relationship between the effective strain of PBO FRCM-strengthened RC beams and the debonding strain of direct shear tests	3.4
6	Paper on a journal/Approximate Evaluation of Maximum Force Transferable at FRP-Masonry Interface	3
7	Paper on a journal/An indirect method to calibrate the interfacial cohesive material law for FRCM-concrete joints	3.3
8	Paper on a journal/Intrados strengthening of brick masonry arches with different FRCM composites: Experimental and analytical investigations	3.2
9	Paper on a journal/FRP-masonry interfacial debonding: An energy balance approach to determine the influence of the mortar joints	3.3
10	Paper on a journal/Periodic variation of the transferable load at the FRP-masonry interface	3.3
11	Paper on a journal/Experimental investigation on flexural behavior of timber beams repaired with CFRP plates	3.2
12	Paper on a journal/Strengthening of masonry-unreinforced concrete railway bridges with PBO-FRCM materials	3
13	Paper on a journal/Masonry arches strengthened with composite unbonded tendons	3.6

14	Paper on a journal/Bond-slip relations for PBO-FRCM materials externally bonded to concrete	3.2
15	Paper on a journal/Flexural Strengthening of RC Beams with Cement-Based Composites	3.4

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 candidate's global scientific production is fully congruent with the scientific disciplinary sector for which the selection procedure was announced and is carried out with temporal continuity and moderate intensity. His research essentially concerns:

- reinforced concrete members with FRP rebars: structural response, design criteria
- experimental response, collapse mechanisms and design criteria for masonry and concrete members strengthened with FRP or Fiber reinforced cementitious matrix (FRCM) composites
- structural (static and seismic) behavior of masonry structures: collapse mechanisms, structural analysis, experimental response.

The candidate received two acknowledgments of high quality paper (Editor's Choice) by Journal of Composites for Construction (ASCE).

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

Starting from 2002 the candidate taught Structural assessment of historical buildings at IUAV (Venice), Technological construction design at University of Florence and then Theory of structures, Structural Mechanics, Structural Rehabilitation and Structural Safety Assessment of Constructions at eCampus University. Currently he carries out an intense teaching activity at the Bachelor and Master of Science. The judgment is very good.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate is the coordinator of two European Union research projects and principal investigator in a national project, as well as holding subordinate positions in some other projects. The judgment is very good.

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 is Shareholder (2.5% of equity) since 2018 of Antheus S.r.l., spin-off of the Università del Salento (10% of equity) and Università eCampus (10% of equity), focusing on applying research results by developing products and services. Activities of Antheus S.r.l. include: research, scientific consultancy, monitoring, education, and design. Technology transfer has been promoted through the participation to many continuing education courses (starting from 2002).

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Based on the English language used in the candidate's publication, it can be inferred that the candidate has a very good knowledge of this language.

CANDIDATE: Fragiaco Massimo

CURRICULUM:

The candidate received an M.S. degree in Civil Engineering (110/110) in 1992, and a Ph.D degree in structural engineering in 2001. He is currently Professor of Structural Engineering at the University of L'Aquila.

He is the head of CEFIS (Research and Teaching Centre for Earthquake Engineering) at the University of L'Aquila. The candidate is the Chairman of the Working Group WG3: "Timber Structures" within CEN/TC 250/SC 8 "Eurocode 8: Design of structures for earthquake resistance" since 2015, Italian delegate within

CEN/TC 250/SC 5 “Eurocode 5: Design of Timber Structures” and the corresponding Italian mirror committee U7305 “Timber Structures” since 2010 and Member of the Working Commission W18-Timber Structures, CIB, International Council for Research and Innovation since 2006. In the near past he has been member of various international committees.

Also based on the scientific, didactic, funded research and technology transfer activities commented in what follows, the Selection Board expresses a very positive evaluation on the candidate curriculum.

SUBMITTED PUBLICATIONS:

No. of pub.	Type/Title of Publication	Judgment
1	Paper on a journal/Finite element model for collapse and long-term analysis of steel-concrete composite beams	3
2	Paper on a journal/Fragility estimate of railway bridges due to concrete fatigue	3.4
3	Paper on a journal/Timber-to-timber and steel-to-timber screw connections: derivation of the slip modulus via beam on elastic foundation model	3.2
4	Paper on a journal/Extension of the generalized Bouc-Wen hysteresis modelling of wood joints and structural systems	3.4
5	Paper on a journal/Numerical analysis of timber-to-timber joints and composite beams with inclined self-tapping screws	2.5
6	Paper on a journal/Modelling the mechanical behaviour of typical wall-to-floor connection systems for Cross-Laminated Timber structures	2.5
7	Paper on a journal/Non-linear simulation of shaking-table tests on 3- and 7-storey X-lam timber buildings	2.5
8	Paper on a journal/Cyclic behavior of cross-laminated timber (CLT) wall systems: Experimental tests and analytical prediction models	3.2
9	Paper on a journal/A component approach for the hysteretic behaviour of connections in cross-laminated wooden structures	2.7
10	Paper on a journal/Experimental behaviour of a full-scale timber-concrete composite floor with mechanical connectors	3.4
11	Paper on a journal/General notes on ductility in timber structures	3
12	Paper on a journal/Elastic and ductile design of multi-storey crosslam massive wooden buildings under seismic actions	2.3
13	Paper on a journal/Non-linear seismic analysis and vulnerability evaluation of a masonry building by means of the Sap2000 v.10 code	2.3
14	Paper on a journal/Long-term behavior of timber-concrete composite beams. II: Numerical analysis and simplified evaluation.	3.2
15	Paper on a journal/Long-term behavior of timber-concrete composite beams. I: Finite element modeling and validation	3.5

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 candidate's global scientific production is fully congruent with the scientific disciplinary sector for which the selection procedure was announced and is carried out with excellent temporal continuity and great intensity.

The candidate addresses topics of interest on wooden constructions with particular reference to "cross-laminated timber structures", CL T, and the related links/connections when used as a wall or as a floor, comprising their seismic and fire analysis, and their interaction with structural elements of other kind like concrete.

His papers were awarded in an international conference, a national one (New Zealand Society for Earthquake Engineering Conference), and by the Institution of Civil Engineers – UK, plus some prizes given by the universities where he has been working.

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

The candidate currently teaches Timber Engineering and Reinforced Concrete Design at University of L'Aquila. Previously he taught Structural Design at the University of Sassari, and even before that (from 2005 to 2007) Design Studio 1 and Timber Engineering at the University of Canterbury (New Zealand). He is also active in doctoral activities with lectures and courses and has been supervisor of a large number of theses, especially at doctoral level. The judgment of this activity is excellent.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate has been coordinator or principal investigator of many national research projects (both in Italy and in New Zealand), as well as holding subordinate positions in some other projects. The judgment is very good."

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 is co-owner (together with other 17 people) of three patents.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Based on the English language used in the candidate's publication, it can be inferred that the candidate has a very good knowledge of this language.

CANDIDATE: Limongelli Maria Giuseppina

CURRICULUM:

The candidate received an M.S. degree in Civil Engineering (cum laude) in 1991, and a Ph.D degree in Seismic Engineering in 1996. He is currently Associate Professor at Politecnico di Milano, Department of Architecture, Built environment and Construction Engineering. She is Member of the Scientific Committee of the Ph.D in 'Engineering for innovation and sustainable development' at Università degli Studi della Basilicata and has been Coordinator and Delegate for Politecnico di Milano for the Memorandum of Understanding on Research and Academic activities with IFSTTAR, France from 2017 to 2021. The candidate is president of EVACES (Experimental Vibration Analysis of Civil Engineering Structures Association) since 2023, vice president and executive board member of IABSE (International Association of Bridge and Structural Engineering) since 2023, vice president and executive board member of ISHMII (International Structural Health Monitoring of Intelligent Infrastructures) since 2022, co-convenor of TG3.3 on Existing Concrete Structures: Life Management, Testing, and Structural Health Monitoring at fib (International Federation of Structural Concrete) since 2020 and Board member, Reporter of WG3, at JCSS (Joint Committee of Structural Safety) since 2021.

Also based on the scientific, didactic, funded research and technology transfer activities commented in what follows, the Selection Board expresses a positive evaluation on the candidate curriculum.

SUBMITTED PUBLICATIONS:

No. of pub.	Type/Title of Publication	Judgment
1	Paper on a journal/Frequency response function interpolation for damage detection under changing environment	3.7
2	Paper on a journal/Evaluation of the seismic response of masonry buildings based on energy functions	3.5

3	Paper on a journal/Vibration-based damage indicators: a comparison based on information entropy	3.2
4	Paper on a journal/Multi-zone parametric inverse analysis of super high arch dams using deep learning networks based on measured displacements	3.2
5	Paper on a journal/Vision-based modal analysis of built environment structures with multiple drones	3.1
6	Paper under review/The value of monitoring a structural health monitoring system	2.7
7	Paper on a journal/Damage detection on a historic iron bridge using satellite DInSAR data	3.4
8	Paper on a journal/Shared micromobility-driven modal identification of urban bridges	3
9	Paper on a journal/The value of seismic structural health monitoring for post-earthquake building evacuation	2.6
10	Paper on a journal/Quantifying the value of information from inspecting and monitoring engineering systems subject to gradual and shock deterioration	3
11	Paper on a journal/The Interpolation Evolution Method for damage localization in structures under seismic excitation	3.2
12	Paper on a journal/Damage detection in a post-tensioned concrete beam? Experimental investigation	2.8
13	Paper on a journal/Seismic health monitoring of an instrumented multistory building using the interpolation method	3.2
14	Paper on a journal/Damage localization in bridges via the FRF interpolation method	3.2
15	Paper on a journal/Optimal location of sensors for reconstruction of seismic responses through spline function interpolation	3.5

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 candidate's global scientific production is congruent with the scientific disciplinary sector for which the selection procedure was announced and is carried out with temporal continuity and good intensity.

The main three topics, on which the candidate focuses are vibration-based monitoring and damage detection, value of information from structural health monitoring, and remote monitoring. Other research topics dealt with in the past are seismic performance of masonry structures, performance assessment of bridges, and base isolation of buildings.

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

The candidate has taught Earthquake Engineering, Structural Design, Risk-based Management in various Masters of Science at the Polytechnic of Milan, but has also taught Structural Mechanics and Structural Design at the Bachelor. Since 2017 she has been teaching Structural Health Monitoring, Diagnostics and Damage Identification to doctoral students and was supervisor of a large number of theses. The judgment on this activity is excellent.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate is coordinator of a rich European Union research project (HORIZON EUROPE) and principal researcher in two other projects (one European and one national), as well as holding subordinate positions in some other projects. The judgment on this topic is excellent.

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

No spin-offs nor patents are reported. Technology transfer has been however promoted through some support to normative development and to professional training.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Based on the English language used in the candidate's publication, it can be inferred that the candidate has a very good knowledge of this language.

THE SELECTION BOARD

Prof. *Roberto Ballarini*.....(Chairman)

BALLARINI Roberto

Prof. *S. Pantazopoulou*.....(Member)

PANTAZOPOULOU Stavroula

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PISANI Marco Andrea



PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2023_PRO_DABC_5 OF 06/10/2023 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 27/10/2023, n. 82 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 08/B3 – STRUCTURAL ENGINEERING - SDS ICAR/09 – STRUCTURAL ENGINEERING, 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_5).

ATTACHMENT No. 2 to the FINAL REPORT

MERIT RANKING

SURNAME AND NAME	Overall score
Cattaneo Sara	92.1
D'Antino Tommaso	89.9
Fragiacomo Massimo	88.1
Focacci Francesco	87.2
Limongelli Maria Giuseppina	86.9

Milan, 28/02/2024

THE SELECTION BOARD

Prof. *Roberto Ballarini* (Chairman)

BALLARINI Roberto

Prof. *S.A. Pantazopoulou* (Member)

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