POLITECNICO MILANO 1863

PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2020_PRO_DEIB_1 OF 26/03/2020 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 14/04/2020, n. 30 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 09/G1 - SYSTEMS AND CONTROL ENGINEERING - SDS ING-INF/04 - SYSTEMS AND CONTROL ENGINEERING, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF ELECTRONICS, INFORMATION AND BIOENGINEERING (PROCEDURE CODE 2020_PRO_DEIB_1).

FINAL REPORT

The Selection Board, appointed with RD Index No. 4431 ref. No. 93311 of 24 June 2020, composed by the following Professors:

Prof. GUARISO Giorgio - Politecnico di Milano;
Prof. GAO Huaizhu Oliver - Cornell University;
Prof. PUIG CAYUELA Vicenç - Universitat Politecnica de Catalunya,

met on July 17, 2020 at 4:00 pm CEST, 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:

OLIVER H. GAO, PROFESSOR at Cornell University, Chairman;
GIORGIO GUARISO, PROFESSOR at 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 August 7, 2020 at 5:30 p.m. CEST, the Selection Board met, for the second teleconference meeting, to inspect the list of applicants, who were:

1) ALESSANDRI Angelo
2) CASTELLETTI Andrea 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. Oliver H. Gao (Chairman)

Prof. Vicenç Puig Cayuela (Member)

Prof. Giorgio Guariso (Secretary)

POLITECNICO MILANO 1863

PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2020_PRO_DEIB_1 OF 26/03/2020 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 14/04/2020, n. 30 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 09/G1 - SYSTEMS AND CONTROL ENGINEERING - SDS ING-INF/04 - SYSTEMS AND CONTROL ENGINEERING, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF ELECTRONICS, INFORMATION AND BIOENGINEERING (PROCEDURE CODE 2020_PRO_DEIB_1).

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	Total
ALESSANDRI Angelo	54	16	16	86
CASTELLETTI Andrea Francesco	56	18	20	94

CANDIDATE: ALESSANDRI Angelo

CURRICULUM:

The candidate has a very good curriculum that includes some Italian prizes and the organization of many sessions and workshops in international conferences, as well as regular editorial activities for eight international journals, and IEEE-CSS conferences. He spent periods as visiting researcher/professor in France (CRAN), USA (NPS), and Portugal (ISR-IST). He also served as member of technical committees within IFAC and IEEE-CSS.

SUBMITTED PUBLICATIONS:

No. of publications	Title of Publication on international journals	Judgment
1	A. Alessandri, P. Bagnerini, M. Gaggera, A. Rossi, State and observer-based feedback control of normal flow equations, Automatica, vol. 117, 108980, 2020	Cit. 1 IF 5.541 very good
2	A. Alessandri, F. Boem, State observers for systems subject to bounded disturbances using quadratic boundedness, IEEE Trans. on Automatic Control, in corso di pubblicazione DOI: 10.1109/TAC.2020.2966720, 2020.	Cit. 1 IF 5.093 very good
3	A. Alessandri, P. Bagnerini, M. Gaggero, Optimal control of propagating fronts by using level set methods and neural approximations, IEEE Trans. on Neural Networks and Learning Systems, vol. 30, pp. 902-912, 2019.	Cit. 6 IF 5.01 very good
4	A. Alessandri, L. Zaccarian, Stubborn state observers for linear time-invariant systems, Automatica, voi. 88, pp. 1-9, 2018.	Cit. 26 IF 5.541 very good
5	A. Alessandri, M. Gaggero, Fast moving horizon state estimation for discrete-time systems using single and multi-iteration descent methods, IEEE Trans. on Automatic Control, vol. 62, pp. 4499-4511, 2017.	Cit. 21 IF 5.093 very good
6	A. Alessandri, M. Awawdeh, Moving-horizon estimation with guaranteed robustness for discrete-time linear systems and measurements subject to outliers, Automatica, vol. 67, pp. 85-93, 2016	Cit. 37 IF 5.541 very good
7	A. Alessandri, A. Rossi, Increasing-gain observers for nonlinear systems: stability and design, Automatica, voi. 57, pp. 180-188, 2015.	Cit. 49 IF 5.541 very good
8	A. Alessandri, M. Baglietto, G. Battistelli, Min-max moving-horizon estimation for uncertain discrete-time linear systems, SIAM Journal on Control and Optimization, voi. 50, pp. 1439-1465, 2012	Cit. 24 IF 1.98 good

9	A. Alessandri, M. Gaggero, R. Zoppoli, Feedback optimal control of distributed parameter systems by using finite-dimensional approximation schemes, IEEE Trans. on Neural Networks and Learning Systems, vol. 23, pp. 984-996, 2012.	Cit. 39 IF 5.01 very good
10	A. Alessandri, M. Gaggero, F. Tonelli, Min-max and predictive control for the management of distribution in supply chains, IEEE Trans. on Control Systems Technology, vol. 19, pp. 1075-1089, 2011.	Cit. 57 IF 4.883 excellent
11	A. Alessandri, M. Baglietto, G. Battistelli, M. Gaggero, Moving-horizon state estimation for nonlinear systems using neural networks, IEEE Trans. on Neural Networks, vol. 22, pp. 768-780, 2011.	Cit. 47 IF 4.25 very good
12	A. Alessandri, M. Baglietto, G. Battistelli, A maximum-likelihood Kalman filter for switching discrete-time linear systems, Automatica, vol. 46, pp. 1870-1876, 2010.	Cit. 38 IF 5.541 very good
13	A. Alessandri, M. Baglietto, G. Battistelli, Moving-horizon state estimation for nonlinear discrete-time systems: new stability results and approximation schemes, Automatica, vol. 44, pp. 1753-1765, 2008.	Cit. 205 IF 5.541 excellent
14	A. Alessandri, M. Baglietto, G. Battistelli, Design of state estimators for uncertain linear systems using quadratic boundedness, Automatica, vol. 42, pp. 497-502, 2006.	Cit. 108 IF 5.541 excellent
15	A. Alessandri, M. Baglietto, G. Battistelli, Receding-horizon estimation for switching discrete-time linear systems, IEEE Trans. on Automatic Control, vol. 50, pp. 1736-1748, 2005 .	Cit. 100 IF 5.093 excellent

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 quality of the scientific production, assessed on the basis of the number of citations and the impact factor of the scientific journals (as estimated from one of the current sources) is high and shows a considerable impact of the candidate in the world scientific literature. The overall scientific activity includes 62 papers published on international journals, 1 in an Italian journal, 9 chapters in international books, 135 papers presented at international conferences, for about 3500 citations (Google Scholar).

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

Alessandri has a long record of teaching activities at undergraduate, graduate and PhD level at the University of Genova, Italy, where he started the development of experimental exercises in 1992 and regular courses in 2002. He also supervised eight PhD candidates at the same university. He has been part of the PhD and HDR evaluation committees in France, Holland, and UK.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate obtained funded projects for roughly 900 k€ starting in 1998, mainly from Italian institutions, in 2003 within EU FP6, and, in 2015, from US AFORS.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Based on publications and participation to international conferences, the degree of knowledge of English is judged good.

CANDIDATE: CASTELLETTI Andrea Francesco

CURRICULUM:

The candidate has an excellent curriculum that includes several prizes and the organization of many sessions and workshops in international conferences. He spent periods as visiting researcher/professor at important institutions in Japan (Tottori Un.), USA (Cornell Un.), Australia (Un. Western Australia), UK (Lancaster Un.), and Switzerland (SUPSI). He is or has been associate editor for six international journals, and has chaired technical committees of EGU and IFAC.

SUBMITTED PUBLICATIONS:

No. of publications	Title of Publication on international journals	Judgment
1	M. Giuliani, M. Zaniolo, A. Castelletti, G. Davoli, and P. Block, Detecting the state of the climate system via artificial intelligence to improve seasonal forecasts and inform reservoir operations, Water Resources Research, 55, 2019.	Cit. 1, IF 4.14 good
2	R.J. Schmitt, S. Bizzi, A. Castelletti, J.J. Opperman, G.M. Kondolf, Planning dam portfolios for low sediment trapping shows limits for sustainable hydropower in the Mekong, Science Advances, 5(10) eaaw2175, 2019.	Cit. 6 IF 12.53 excellent

3	R.J. Schmitt, S. Bizzi, A. Castelletti, G.M. Kondolf , Improved trade-offs of hydropower and sand connectivity by strategic dam planning in the Mekong, Nature Sustainability, 1, 96104, 2018.	Cit. 33 IF 12.080 excellent
4	S. Denaro, A. Castelletti, M. Giuliani, G.W. Characklis, Fostering cooperation in power asymmetrical water systems by the use of direct release rules and index-based insurance schemes, Advances in Water Resources, 115, 301-314, 2018.	Cit. 6 IF 4.016 good
5	M. Giuliani, J. D. Quinn, J. D. Herman, A. Castelletti, P.M. Reed, Scalable multi-objective control for large scale water resources systems under uncertainty, IEEE Transactions on Control Systems Technology, 26(4), 1492-1499, 2018.	Cit. 29 IF 4.883 very good
6	J.D. Quinn, P.M. Reed, M. Giuliani, A. Castelletti, Rival framings: A framework for discovering how problem formulation uncertainties shape risk management trade-offs in water resources systems, Water Resources Research, 53(8), 7208-7233, 2017.	Cit. 42 IF 4.14 very good
7	D. Piga, A. Cominola, M. Giuliani, A. Castelletti, A.E. Rizzoli, Sparse optimization for automated energy end use disaggregation. IEEE Transactions on Control Systems Technology, 24(3), 1044-1051, 2016.	Cit. 47 IF 4.883 very good
8	M. Giuliani, A. Castelletti, Is robustness really robust? How different definitions of robustness impact decision-making under climate change, Climatic Change, 135(3), 409-424, 2016.	Cit. 61 IF 4.134 excellent
9	S. Galelli and A. Castelletti, Tree-based Iterative Input variable Selection for hydrological modelling, Water Resources Research, 49(7), 42954310, 2013.	Cit. 95 IF 4.14 excellent
10	A. Castelletti, F. Pianosi, and M. Restelli, A multiobjective reinforcement learning approach to water resources systems operation: Pareto frontier approximation in a single run. Water Resources Research, 49(6), 34763486, 2013.	Cit. 61 IF 4.14 excellent
11	A. Castelletti, S. Galelli, M. Restelli, R. Soncini Sessa, Data-driven dynamic emulation modelling for the optimal management of environmental systems. Environmental Modelling and Software, 34, 30-43, 2012.	Cit. 74 IF 4.807 excellent
12	A. Castelletti, S. Galelli, M. Restelli, R. Soncini Sessa, Tree-based reinforcement learning for optimal water reservoir operation. Water Resources Research, 46, W09507, 2010.	Cit. 142 IF 4.14 excellent
13	A. Castelletti, F. Pianosi, R. Soncini Sessa, Water reservoir control under economic, social and environmental constraints. Automatica, 44(6), 15951607, 2008.	Cit. 185 IF 5.541 excellent
14	A. Castelletti, R. Soncini Sessa, Bayesian network and participatory modelling, Environmental Modelling and Software, 22(8), 1075-1088, 2007.	Cit. 318 IF 4.807 excellent
15	A. Castelletti, R. Soncini Sessa, A procedural approach to strengthening integration and participation in water resource planning, Environmental Modelling and Software, 21(10), 1455-1470, 2006.	Cit. 124 IF 4.807 excellent

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 quality of the scientific production, assessed on the basis of the number of citations and the impact factor of the scientific journals (as estimated from one of the current sources) is very high and shows a relevant impact of the candidate in the world scientific literature. The overall scientific activity includes 92 papers published on international journals, 2 co-authored international books, 11 chapters in international books, 71 papers and 164 abstract/posters presented at international conferences, for more than 5000 citations (Google Scholar).

TEACHING ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR B9ODIES:

The candidate carried out an extensive teaching activity in the area of control of environmental systems. In particular, he taught university courses at Politecnico di Milano, Italy, since 2004, and at ETH, Switzerland, since 2012. He also taught advanced/PhD courses in Chile, Switzerland, Poland, Ecuador, and Vietnam. He has supervised 17 PhD candidates and has been member of PhD committees in Canada, Finland, and Australia. He also served as supervisor of more than 80 MSc theses.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

Castelletti has initiated and managed a high number of nationally and internationally (11 EU) funded research projects for a total amount that exceeds 3.8M € since 2014.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Based on publications and participation to international conferences, the degree of knowledge of English is judged good.

THE SELECTION BOARD

Prof. Oliver H. Gao (Chairman)

Prof. Vicenç Puig Cayuela (Member)

Prof. Giorgio Guariso (Secretary)

POLITECNICO MILANO 1863

PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2020_PRO_DEIB_1 OF 26/03/2020 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 14/04/2020, n. 30 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 09/G1 - SYSTEMS AND CONTROL ENGINEERING - SDS ING-INF/04 - SYSTEMS AND CONTROL ENGINEERING, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF ELECTRONICS, INFORMATION AND BIOENGINEERING (PROCEDURE CODE 2020_PRO_DEIB_1).

ATTACHMENT No. 2 to the FINAL REPORT

MERIT RANKING

SURNAME AND NAME	Overall score
CASTELLETTI Andrea Francesco	94
ALESSANDRI Angelo	86

Milan, August 7, 2020

THE SELECTION BOARD

Prof. Oliver H. Gao (Chairman)

Prof. Vicenç Puig Cayuela (Member)

Prof. Giorgio Guariso (Secretary)

Firmato digitalmente ai sensi del CAD – D. Lgs 82/2005 e s.m.i.