



PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2023_PRO_DICA_1 OF 20/06/2023 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 30/06/2023, n. 49 FOR 1 POSITION AS FULL PROFESSOR FOR THE COMPETITION SECTOR 08/A1 - HYDRAULICS, HYDROLOGY, HYDRAULIC AND MARINE CONSTRUCTIONS - SDS ICAR/01 - HYDRAULICS, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING (PROCEDURE CODE 2023_PRO_DICA_1).

FINAL REPORT

The Selection Board, appointed with RD Index No. 9166 ref. No. 185524 of 01 August 2023, composed by the following Professors:

Prof. BALLIO Francesco - Politecnico di Milano;
Prof.ssa POKRAJAC Dubravka - University of Aberdeen;
Prof. SÁNCHEZ-VILA Francisco Javier - Universitat Politècnica de Catalunya,

met on 20th September 2023 at 16:00, 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:

POKRAJAC, Dubravka, Professor at the University of Aberdeen, Chairman;
BALLIO, Francesco, Professor at the 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 7th November 2023 at 10:00, the Selection Board met by a second teleconference meeting to inspect the list of applicants, who were:

1) Radice, Alessio

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. POKRAJAC, Dubravka (Chairman)

Dubravka Pokrajac

Prof. SÁNCHEZ-VILA, Francisco Javier (Member)

Prof. BALLIO, Francesco (Secretary)



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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 |
|-----------------|---|--|--|--|-------|
| Radice, Alessio | 37 | 35 | 12 | 0 | 84 |

CANDIDATE: Radice, Alessio

CURRICULUM:

The candidate obtained a M.Sc. Degree in Civil Engineering from Politecnico di Milano (2000), obtaining a recognition as the best graduate in his class. He obtained a Ph.D. Degree in Hydraulic Engineering from the Politecnico di Milano (2005). Since 2014 he is Associate Professor of Hydraulics at the Politecnico di Milano. He obtained the national scientific qualification to full professorship in 2020.

He has taken several organizational roles Politecnico di Milano (secretary and coordinator of study programmes, member of the scientific and teaching Commissions of the Department of Civil and Environmental Engineering, member of the Faculty Board of the Ph.D. programme in Environmental and Infrastructure Engineering, member of the management Committee of the Fantoli Lab). He is member of technical committees in international research associations.

He has participated to several research projects and has been scientific responsible of various research contracts with public institutions and private companies. He has collaborated with many national and international Institutions.

Also considering the detailed assessments reported below, this Commission expresses a very positive judgement on the candidate's curriculum vitae.

SUBMITTED PUBLICATIONS:

| No. of publications | Type/Title of Publication | Judgment |
|---------------------|---|----------|
| 1 | Radice, A. (2021). An experimental investigation of sediment kinematics and multi-scale propagation for laboratory bed-load dunes. <i>Sedimentology</i> . | 1.58 |
| 2 | Zanchi, B., Radice, A. (2021). Celerity and height of aggradation fronts in gravel-bed laboratory channel. <i>Journal of Hydraulic Engineering</i> . | 1.44 |
| 3 | Ivanov, V., Radice, A., Papini, M., Longoni, L. (2020). Event-scale pebble mobility observed by RFID tracking in a pre-Alpine stream: a field laboratory. <i>Earth Surface Processes and Landforms</i> . | 1.46 |
| 4 | Hosseini Sadabadi, S.A., Radice, A., Ballio, F. (2019). On reasons of the scatter of literature data for bed-load particle hops. <i>Water Resources Research</i> . | 1.55 |
| 5 | Scorzini, A.R., Radice, A., Molinari, D. (2018). A new tool to estimate inundation depths by spatial interpolation (RAPIDE): design, application and impact on quantitative assessment of flood damages. <i>Water</i> . | 1.63 |

| | | |
|----|--|------|
| 6 | Ballio, F., Pokrajac, D., Radice, A., Hosseini Sadabadi, S.A. (2018). Lagrangian and Eulerian Description of Bed Load Transport. Journal of Geophysical Research: Earth Surface. | 1.75 |
| 7 | Radice, A., Lauva, O. (2017). Live-bed pier scour in a covered flow. Journal of Hydraulic Engineering. | 1.48 |
| 8 | Radice, A., Longoni, L., Papini, M., Bramdilla, D., Ivanov, V.I. (2016). Generation of a design flood-event scenario for a mountain river with intense sediment transport. Water. | 1.51 |
| 9 | Radice, A., Davari, V. (2014). Roughening elements as abutment scour countermeasures. Journal of Hydraulic Engineering. | 1.65 |
| 10 | Radice, A., Nikora, V., Campagnol, J., Ballio, F. (2013). Active interactions between turbulence and bed load: Conceptual picture and experimental evidence. Water Resources Research. | 1.61 |
| 11 | Radice, A., Chau, C.K. (2012). Study of sediment motion in scour hole of a circular pier. Journal of Hydraulic Research. | 1.58 |
| 12 | Ballio, F., Radice, A., Dey, S. (2010). Temporal scales for live-bed scour at abutments. Journal of Hydraulic Engineering. | 1.71 |
| 13 | Ballio, F., Teruzzi, A., Radice, A. (2009). Constriction effects in clear-water scour at abutments. Journal of Hydraulic Engineering. | 1.72 |
| 14 | Radice, A. (2009). Use of the Lorenz curve to quantify statistical nonuniformity of sediment transport rate. Journal of Hydraulic Engineering. | 1.81 |
| 15 | Radice, A., Ballio, F., Nikora, V. (2009). On statistical properties of bed load sediment concentration. Water Resources Research. | 1.84 |
| 16 | Radice, A., Porta, G., Franzetti, S. (2009). Analysis of the time-averaged properties of sediment motion in a local scour process. Water Resources Research. | 1.71 |
| 17 | Radice, A., Ballio, F. (2008). Double-average characteristics of sediment motion in one-dimensional bed load. Acta Geophysica. | 1.74 |
| 18 | Radice, A., Malavasi, S., Ballio, F. (2006). Solid transport measurements through image processing. Experiments in Fluids. | 1.72 |
| | TOTAL | 29.5 |

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 submitted scientific publications are given scores in the table above, where a maximum score is 2 for each paper. These scores have been assigned considering criteria and parameters recognized by the international scientific community of reference (in particular, the number of citations, the *impact factor* of a journal and the number of authors). The publications are original studies in the areas of sediment transport mechanics under unidirectional flows, local scour at interfering structures, and flood modelling; the contributions demonstrate methodological rigour, temporal continuity and diversification of research topics. The effort put in laboratory (and, in one case, field) experimentation is appreciated.

Considering the database Scopus the candidate authored 64 papers, 49 of which are in international journals, with 2008 citations and a *H-index* equal to 19. He appears as first and last author in 26% and 23% of the records, respectively. Out of the works, 36% was realized within international collaborations, and 33% of the publications are within 25% of world most cited papers. He has had twice the inclusion of a paper in the "Editor's choice" series of an international journal.

He organized the symposium HydroSenSoft 2019 at Madrid; He has been very active as a scientific reviewer, obtaining once a recognition as an "outstanding reviewer", and is Associate Editor of the journal Hydrology.

The scientific activity is attributed a score of 7.5/9 beyond that of the submitted publications.

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

The teaching activity of the candidate has been excellent. After entering the University in 2004 as an Assistant Professor, he has been in charge for 14 times of courses of river hydraulics, for 13 times of courses of fluid mechanics, for 8 times of courses of hydrogeological risk, and of some other courses. He has always obtained good evaluation from students; he has supervised more than 50 B.Sc. and M.Sc. theses and has a supervising role in 10 Ph.D. projects.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS:

The candidate has been coordinator or unit responsible in two projects, relevant at a national scale, and participant in 8 projects relevant at national and international scale. Since 2018 he has been scientific responsible of research contracts with public institutions and private companies, for a total of about 340 k€.

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 has had no involvement in creation of new enterprises and development of patents.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

Based on the submitted publications and of documented teaching activity, the candidate demonstrates very good knowledge of the English language..

THE SELECTION BOARD

Prof. POKRAJAC, Dubravka (Chairman)

Dubravka Pokrajac

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ATTACHMENT No. 2 to the FINAL REPORT

MERIT RANKING

| SURNAME AND NAME | Overall score |
|------------------|---------------|
| Radice Alessio | 84 |

Milan, 7th November 2023

THE SELECTION BOARD

Prof. POKRAJAC, Dubravka (Chairman)

Dubravka Pokrajac

Prof. SÁNCHEZ-VILA, Francisco Javier (Member)

Prof. BALLIO, Francesco (Secretary)