POLITECNICO MILANO 1863

EVALUATION PROCEDURE FOR THE APPOINTMENT OF 1 FULL PROFESSOR PURSUANT TO ARTICLE 24, PARAGRAPH 6 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF ENERGY FOR THE ACADEMIC RECRUITMENT FIELD 09/C1 - FLUID MACHINERY, ENERGY SYSTEMS AND POWER GENERATION, ACADEMIC DISCIPLINE ING-IND/09 - ENERGY SYSTEMS AND POWER GENERATION, PROCEDURE CODE 2023_VAL_I_DENG_3.

1st MINUTES

The Selection Board, appointed with RD Index No. 957 ref. No. 16601 of 25 gennaio 2024, composed by the following professors:

Prof. CHIESA Paolo - Full Professor - Politecnico di Milano,
Prof. CORMOŞ Călin-Cristian - Professor - Universitatea Babeş-Bolyai,
Prof. SANCHEZ MARTINEZ David Tomas - Catedrático de Universidad - Universidad de Sevilla.

on 5 March 2024 at 16.30, meets in telematic mode.

The members of the Selection Board take note that no objection to the board members in relation to this selection procedure had reached the University and therefore the Selection Board was fully entitled to operate in accordance with the rules of the competition.
At the start of the session the members of the Selection Board named the Chairman and the Secretary:
Prof. SANCHEZ MARTINEZ David Tomas - Catedrático de Universidad - Universidad de Sevilla, CHAIRMAN;
CHIESA Paolo - Full Professor - Politecnico di Milano, SECRETARY.

The Selection Board inspects the list of applicants, who are:
1) SILVA, Paolo

Each member of the Selection Board declares 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 states that there were no reasons for abstention pursuant to arts. 51 and 52 of the Civil Procedure Code.

The members of the Selection Board also declare, 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 notes that the competition procedure must be concluded within **25 April 2024** (3 months from the date of publication of the decree appointing the Selection Board).

The Selection Board also takes note of the scientific and educational profile indicated by the Department:
The teaching commitment will concern classes of the Energy Systems sector (ING-IND/09), to be carried out at the interested Study courses / School. About the scientific commitment, the winning candidate will deal with the study of energy systems based on renewable sources, with particular attention to plant configurations and technologies for the exploitation of geothermal, wind and concentrated solar energy. The candidate will also study the technological and performance aspects of innovative thermodynamic cycles that use CO2 as a working fluid, for example coupled to concentrated solar systems, or for heat recovery from industrial thermal waste.

The Selection Board, referring to the scientific and educational profile indicated above, will make use of the following criteria:

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a) quality of scientific and/or project production, assessed on the basis of criteria and parameters recognized by the international scientific community of reference;
b) didactic activities carried out in Italian or foreign Universities or bodies;
c) scientific responsibility for funded research projects;
d) results obtained in technology transfer in terms of participation in the creation of new enterprises (spin off), development, use and marketing of patents.

After adequate evaluation, based on the scientific and educational profile indicated by the Department, the Selection Board collectively proceeds to express a judgment for each of the established criteria for each candidate, as well as an overall collective judgment.

CANDIDATE: SILVA Paolo

<table>
<tr><th>CRITERIA</th><th>JUDGMENT</th></tr>
<tr><td>a) quality of scientific and/or project production, assessed on the basis of criteria and parameters recognized by the international scientific community of reference</td><td>
Since 2014, Paolo Silva is associate professor of "Energy systems and power generation" at the School of Industrial and Information Engineering of Politecnico di Milano. He obtained the national scientific qualification for the position of full professor on 26/07/2018.

Research activities of Paolo Silva have focused on fields connected to the scientific disciplinary sector ING-IND/09 (Energy Systems and power generation):
• Supercritical CO_2 cycles
• Concentrating Solar Power Plants (CSP)
• Geothermal energy
• Wind energy
• Combined heat and power generation (Industrial and Micro-Cogeneration)

The scientific production of the candidate is consistent with the topics relevant to sector ING-IND/09. Based on his curriculum, it consists of 73 items distributed as follows:
• 32 papers published in international peer-reviewed journals,
• 40 papers published in international peer-reviewed conference proceedings,
• 9 papers presented to international conferences without peer-review,
• 2 monographies and 9 book chapters,
• 6 paper published in national journals,
• 2 other publications

Author's indexes deduced from the Scopus bibliographic database accessed on 23-02-2024 are summarized in the table below
<table>
<tr><td>Number of documents</td><td>64</td></tr>
<tr><td>Number of citations
by documents
h-index</td><td>1975
1749
27</td></tr>
<tr><td>Without self-citations of the author
h-index</td><td>1886
26</td></tr>
<tr><td>Without self-citations of all the authors
h-index</td><td>1683
25</td></tr>
</table>

The 20 papers submitted for this call span the entire career of the candidate. They exhibit excellent editorial positioning, achieving good or excellent standards with elevated scientific impact and a high number of citations. However, evaluating the effective contribution of the candidate for some of these papers is quite challenging due to the large number of co-authors and the candidate's limited relevance in terms of author position (neither first, last nor corresponding author). Overall, these papers demonstrate a good degree of originality and illustrate the author's strong skills in analysis and modeling of energy conversion systems. In general, the candidate's scientific production is of adequate consistency for the position being applied for.
</td></tr>
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	As shown in the CV, the candidate has extensive experience as a chairman and organizer of sessions in three prestigious international conferences in the sector. He was also organizer and lecturer of two "Tutorial sessions" focusing on cogeneration plant optimization at the ASME-IGTI Turbo Expo Conference and served as a member of the scientific committee of the sCO2 Europe International Conference.
b) didactic activities carried out in Italian or foreign Universities or bodies;	From the academic year 2002-03, Paolo Silva has been teaching as a responsible lecturer at Politecnico di Milano, offering a variety of courses at both the B.Sc and M.Sc levels in energy, mechanical, and management engineering, all within the realm of Energy Systems. Additionally, he has conducted lessons at the Ph.D. level at Politecnico di Milano. The candidate has an extensive record of teaching activities in Master Courses for graduate students. He served as a lecturer in several specializing master programs at Politecnico di Milano, University of Pordenone, LUISS University in Rome, and Scuola Superiore Sant'Anna (Pisa). Furthermore, he delivered lectures in courses and workshops for various companies and organizations. He has supervised 4 Ph.D. students (and co-supervised 2 more), as well as over 200 master's theses at Politecnico di Milano. At Politecnico di Milano, he has been instrumental in supporting teaching activities, where he: - Serves as the director of a specializing master's course on renewable energy. - Previously held roles such as deputy coordinator and representative of the commission for the "Green Power Systems" track of the course in energy engineering. - Serves as member of the commission for international mobility of the course in energy engineering. - Currently acts as the coordinator of teaching activities in the area of energy systems. - Sits on the scientific board of the corporate master's course ENI-Politecnico in "Energy Innovation". - Serves as the Joint Program Coordinator for a Joint Ph.D. (Dual diploma) with TU-Delft. Overall, the candidate has gained outstanding experience in teaching activities and didactic management, demonstrating significant capabilities that fully meet the requirements of this evaluation.
c) scientific responsibility for funded research projects;	The candidate has been extensively involved in research activities as a member of research teams funded through peer-reviewed calls or contracts with industrial companies. Regarding participation in collaborative international research projects funded by competitive calls, Paolo Silva served as a Work Package leader in an FP6 project, acted as the principal investigator of the local research team for an H2020 and a HE project funded to Politecnico di Milano. Additionally, he played a co-Principal Investigator role in two other H2020 projects. Furthermore, he held a leading role in seven research projects funded by national competitive calls. The candidate's curriculum vitae, as presented in this announcement, showcases 48 collaborations in research contracts with companies and institutions. For 30 of these collaborations, he assumed the role of Principal Investigator or co-Principal Investigator. The overall assessment of the candidate's activity in funded programs underscores his capability to effectively promote and manage research projects, aligning well with the expectations for the role of a full professor.
d) results obtained in	The applicant is co-inventor of an international patent application about a "Device and

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technology transfer in terms of participation in the creation of new enterprises (spin off), development, use and marketing of patents	method for recovery thermal energy from steelmaking slag" that so far has not resulted in industrial applications.

OVERALL COLLECTIVE JUDGEMENT

The candidate, Paolo Silva, has been actively engaged in the scientific community of the ING-IND/09 sector since 2003 and has held the position of Associate Professor in the same sector since 2014.

His scientific output has demonstrated consistent development characterized by continuity, depth of analysis, and methodological rigor. The publications, all aligned with the sector's themes under evaluation, are scientifically interesting and original. The 20 publications submitted for evaluation are uniformly of high standard, internationally recognized, and occupy excellent editorial positions, establishing themselves as key references within the ING-IND/09 sector. The overall production exceeds satisfactory levels according to criteria and parameters acknowledged by the international scientific community.

His teaching prowess is excellent, spanning a substantial period from 2002 to the present day, covering topics of specific relevance to the energy sector. This teaching engagement extends beyond institutional courses at Politecnico di Milano to encompass numerous specialization courses offered by national universities, research institutions, and companies. Notably, he serves as the director of a specialization master course on renewable energy. Additionally, he has made extensive contributions to the organization of teaching activities.

Paolo Silva's significant scientific responsibilities in funded research projects are noteworthy, particularly in roles such as Scientific Manager/Principal Investigator, secured through successful participation in competitive calls. His involvement spans numerous research projects and contracts with industrial companies and organizations in the energy sector.

In summary, the Commission unanimously assesses the candidate's curriculum vitae as highly satisfactory overall.

The Selection Board, taking into account the judgments given, selects, according to the majority of its members, the following candidate, considered most qualified to carry out the didactic-scientific functions for which the procedure has been activated: PAOLO SILVA

The meeting ended at 17.15.

Read, approved and signed.

THE SELECTION BOARD

Prof. SANCHEZ MARTINEZ David Tomas *(Chairman)* _____

Prof. CORMOŞ Călin-Cristian *(Member)* _____

Prof. CHIESA Paolo *(Secretary)* _____