

SELECTION OF ONE ASSOCIATE PROFESSOR FOR THE ACADEMIC RECRUITMENT FIELD 09/G2 "APPLIED MECHANICS" AT TECIP INSTITUTE - ACADEMIC CLASS OF EXPERIMENTAL AND APPLIED SCIENCES, PURSUANT TO ART. 24, SUBSECTION 5, OF ITALIAN LAW 240/2010, ISSUED BY RECTOR DECREE NO. 294 DATED 22/05/2019.

The Committee for the evaluation of Dr. Massimiliano Solazzi, tenure-track – probationary, Assistant Professor, in the third year of his temporary contract pursuant to Italian Law no. 240/2010, art. 24 paragraph 3 letter B, nominated by the Rector by decree No. 463 dated 10/07/2019 for the promotion to Associate Professor in the Academic Recruitment Field 09/A2 "Applied Mechanics" at the Institute of Communication, Information and Perception Technologies (TECIP) consists of:

- Prof. Massimo Bergamasco - Professor of the Academic Recruitment Field 09/A2 "Applied Mechanics" at the Scuola Superiore Sant'Anna (School), designated expert by the TECIP Institute;
- Prof. Vincent Hayward - Professor at the Université Pierre et Marie Curie;
- Anna Loretoni - Professor of the Academic Recruitment Field 14/A1 Political Philosophy at the Scuola Superiore Sant'Anna, member of the Recruitment Committee of the Scuola;
- Prof. Lorenzo Masia – Professor at the Heidelberg University;
- Prof. Vincenzo Parenti Castelli - Professor of the Academic Recruitment Field 09/A2 "Applied Mechanics" at the University of Bologna;
- Prof. Giulio Rosati - Professor of the Academic Recruitment Field 09/A2 "Applied Mechanics" at the University of Padova.

The Committee was convened on September 11, 2019, at 10 a.m. via teleconference. The meeting was held telematically from the following locations and email addresses:

- Prof. Massimo Bergamasco located at PERCRO Lab, Scuola Sant'Anna (Pisa), connected via email from the address m.bergamasco@santannapisa.it;
- Prof. Vincent Hayward located at the Institut des Systèmes Intelligents et de Robotique, UPMC (Paris), connected via email from the address vincent.hayward@isir.upmc.fr;
- Prof. Anna Loretoni, located in DIRPOLIS Institute, Scuola Sant'Anna, connected via email from the address a.loretoni@santannapisa.it;
- Prof. Lorenzo Masia, located in Institute of Computer Engineering at Heidelberg University (Germany) connected via email from the address lorenzo.masia@ziti.uni-heidelberg.de;
- Prof. Vincenzo Parenti Castelli, located in the Department of Industrial Engineering (Bologna) connected via email from the address vincenzo.parenti@unibo.it;
- Prof. Giulio Rosati, located in the Department of Industrial Engineering (Padova), connected via email from address giulio.rosati@unipd.it.

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The following draft of the minutes was agreed on and approved by the members of the Committee.

Pursuant to art. 5 paragraph 2 of Legislative Decree no. 1172/1948, each member declared that they have no kinship or affinity up to the fourth grade with any of the other members and the candidate, that there are no reasons for abstention in relation to art. 51 of c.p.c. and that he/she is not in any situation, actual or potential, of conflict of interests with the candidate (as per art. 6 bis of the Legislative Decree No 241/1990).

Prof. Massimo Bergamasco was nominated as President and Prof. Vincenzo Parenti Castelli as Secretary.

The Committee then reviewed the Call and especially his article 4 and agreed that the candidate shall be assessed according to the parameters established by the Ministerial Decree 344/2011, in relation to the compliance of the scientific profile with the "general criteria of qualification for teaching and research required for access to professoral positions at the School" established by the School's Commission for Recruitment and set out in article 1 of the Call.

The members of the Committee stated that the Personnel Office of the School has provided them with an electronic copy of the documentation submitted by the candidate containing: application, curriculum, publications with a declaration in lieu of an affidavit certifying compliance with the original, and a list of all the documents accompanying the application and that they have examined it and made their individual assessments, which are reported in Annex 1 of these minutes.

The Committee then collectively examined the publications, curriculum and teaching activities of the candidate, confronted their individual assessments and reviewed the collegiate assessment annexes sub 2 attached to the minutes of which it is an integral part.

Then after a discussion, on the basis of a majority vote (where necessary the President casts the deciding vote), the Committee declared that Dr. Massimiliano Solazzi:
is qualified to be appointed as Associate Professor.

Prof. Anna Loretoni (Member of the Recruitment Committee of the Scuola) testified that the evaluation of the candidate, the presentation of the individual assessments, the ensuing discussion and, in general, the whole procedure occurred in full compliance with the rules established by Scuola Sant'Anna and its recruitment committee.

Given the conclusion of the selection procedure for a position of Associate Professor, at the Institute of Communication, Information and Perception Technologies (TECIP). in the Academic Class of Experimental and Applied Sciences, for the Academic Recruitment Field 09/A2 "Applied Mechanics", pursuant to art. 24,

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subsection 5 of Italian law 240/2010, the President declared the work closed.

These minutes, drawn up and signed by the President and the attached declarations of the Committee's members will be sent to the Personnel Office in order for these proceedings to be verified, with a decree by the Rector.

The session closed at 11.30 a.m..

Read, approved and signed,

The President

Prof. Massimo Bergamasco

Massimo Bergamasco

ANNEX 1

Assessment by Prof. Massimo Bergamasco

1. Teaching

Dr. Solazzi has carried out with continuity teaching both at undergraduate and PhD level both at Scuola Sant'Anna and Faculty of Engineering of University of Pisa in the field of mechanical engineering and robotics.

He has been course leader in numerous courses, covering both fundamental aspects in the area of mechanics, with courses such as "Mechanical transducers" and "Principles of functional machine design with FEM applications", and robotics, with course such as "Mechanics of Robots I" and "Robotics and Human-machine interfaces",

He has been mentoring of 5 PhD students and 8 undergraduate students.

He has participated moreover to several institutional activities, such as the evaluation committee for PhD and for Participation in the committee for admission of Honour Students to Scuola Sant'Anna.

Overall I consider that, due to the broadness of courses and covered contents, the teaching activity of Dr. Solazzi has to be considered excellent.

2. Publications

Dr Massimiliano Solazzi's scientific production is coherent with his scientific research domain, appearing as author and co-author of several scientific publications in relevant journals and conferences in the field of the robotics, haptic interfaces and human-robot interaction.

The presented publications are 12 journal publications and include important contributions in the area of kinematics on the topic of parallel manipulators and underactuated exoskeletons (Meccanica, Mechanisms & Machine Theory), 3 papers published in Transactions on Haptics of which 2 listed among the most popular ones of the journal, 3 papers published in RAL in the area of exoskeletons, and 3 other papers published in IEEE TRNSE; MIT press Presence and Frontiers in the area of wearable haptics and human-robot interaction.

Overall the presented publications reflect the activity of the candidate in the area of haptics, kinematics, machine design and wearable robotics.

He has been the recipient of best paper/finalist award for papers in the area of exoskeletons, haptics and structural dynamics.

As far the impact of his scientific production, Dr. Solazzi has an h-index of 16 according to Scholar and of 14 according to Scopus. It is worth noting that the candidate's scientific production had an exponential growth over the last 3 years period, with a remarkable impact on the reference scientific field, as demonstrated by the Field-Weighted Citation Impact of 2.13.

Considering all the other Associate Professors in the field of ING-IND/13 "Applied Mechanics" scientific community, Dr. Solazzi is ranked among the best top 20% for citation count in the last ten years and - if bibliometric parameters are normalized to the academic age -, he is ranked among the best 10% (m-index). Moreover his bibliometric indicators are already beyond threshold required in Italy for national habilitation to full professorship.

Altogether, I consider the scientific production of the candidate in terms of publications is excellent

3. Scientific Research

Dr. Massimiliano Solazzi coordinates the research group of "Intelligent Machines Design" within the PERCRO laboratory. His research is focused on the design of robotic interfaces for telepresence and rehabilitation, haptics, advanced kinematics and machine design, wearable robotics and inspection robotics for maintenance on condition.

Dr. Massimiliano Solazzi has actively participated to a number of a European projects, among which two EU leading projects in the area of disaster robotics, H2020 RIA Centauro (2015-2018) and wearable haptics, IP ICT WearHap (2013-2017) among many others.

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He has been Principal Investigator as well for Scuola Sant'Anna in several relevant industrial projects, where novel integrated opto-mechatronics solutions have been investigated for applications in the automotive field (Brembo) or novel hybrid actuation methodologies for exoskeletons: He has also contributed to projects in the area of robotics and opto-mechatronics for maintenance on condition (RFI, Trenitalia), and several other projects in the industrial field, with relevant partners such as FCA, ASI, etc.

The activities denote a continuous participation over time to research projects in outstanding international collaborations, with increasing responsibility roles. Results of industrial projects has led to the deposit of 4 international patents.

Overall I consider outstanding the scientific activity of the candidate.

Taken together, I express my full and positive recommendation for Dr. Massimiliano Solazzi for its promotion to Associate Professor.

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ANNEX 2

Assessment by Prof. Vincent Hayward

Teaching.

Dr Solazzi has made and continue to make a large contribution to the teaching at the Scuola Superiore Sant'Anna, namely, he regularly taught a 6-credit Master's level course, "Transducer mechanics", a 3-credit Master's level course within the "Robotics and Human-machine interfaces" track, and a 3-credit course for Honours and doctorate students on the "Principles of functional machine design with FEM applications". In addition, Dr Solazzi participated in evaluation committees and plans for doctoral theses and diploma exams. He also trained four Master's students and two doctoral students.

Publications.

Clearly, Dr. Solazzi scientific production is quantitatively consistent with — and qualitatively superior to—that of his peers at a similar career stage and in similar fields of enquiry.

He authored and coauthored 12 publications in journals, all in excellent venues, with contributions to kinematics, exoskeletons robots, and all are well read and cited. One of them received a prestigious Best Paper Award. As a result, beyond the raw indication of bibliometric citation indices, it is clear that his work is attracting considerable interest as can be seen from their rapid increase in the past few years

Scientific research

As already noted, Dr Solazzi's research is at the forefront of robotic interfaces with humans with notable contributions in this field. But beyond this, from the submitted documentation it is apparent that Dr Solazzi has been punching largely above his weight in terms of research management. As the coordinator of the team of "Intelligent Machine Design" from the PERCRO lab, Dr Solazzi was involved in European projects, such as the H2020 RIA Centauro (2015-2018) and portable My Maps, IP ICT WearHap (2013-2017) and many other projects.

He coordinated large industrial projects with Brembo, RFI, Trenitalia. I note that this activity has resulted in the filing of four international patents. He is also generous with his time in terms of outreach activities at the Leonardo da Vinci National Museum of Science and Technology or the International Robotics Festival in Pisa.

In summary, I can only strongly support the promotion case of Dr. Masimiano Solazi to the grade of Associate Professor.

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ANNEX 3

Assessment by Prof. Lorenzo Masia

1. Teaching Activities

the teaching activities of Dr Massimiliano Sollazzi is compelling. He was responsible for different classes at the Scuola Superiore Santa Anna for the areas of mechatronics, mechanics and robotics. The title of the classes were

- "Mechanical transducers",
- "Principles of functional machine design with FEM applications",
- "Mechanics of Robots I" and "Robotics and Human-machine interfaces".

This provides information on Dr Sollazzi's teaching CV which makes his profile eligible for an Associate Professor Position.

Student mentoring activity counts 5 PhD Students and 8 undergraduate students. He was main supervisor for 4 Master Thesis and 2 PhD defenses: the acquired experience in mentoring is therefore more than compelling to demonstrate that Dr Sollazzi is able to guide students and independently lead a research group.

2. Scientific Records

Scientific publication of Dr Sollazzi is solid, and pertinent with the research area of the associate professorship. The current publication records counts 17 journal contribution in the fields of haptic, mechanics and machine theory, robotics and control. The targeted journals are amongst the most relevant for the above mentioned areas like IEEE Transaction on Haptics, IEEE Transaction in Neural System and Rehabilitation Engineering and IEEE Robotics and Automation Letters, MIT Presence and Frontiers Publishing.

Contribution on international peer reviewed conferences is as well solid with several papers on IEEE events which leading conferences in the field of interest of Dr Sollazzi, where he was also selected also as finalist for the best paper award.

Overall the scientific records of Dr Sollazzi are outstanding.

Citation ranking is rather impressive for his age with an H-index of 16 on Scholar and 14 from Scopus and a raising trend over the course of the last 4 years which is significantly positive, overmatching the inherent requirements for the Associate Professor Position in the national habilitation.

3. Research and Grants

Dr Solazzi has actively contributed in grant searching over the last few years with experience as collaborator and principal investigator. He had experienced in EU projects actively supporting as workpackage coordinator the activities in PERCRO laboratory at Scuola Superiore Santa Anna: some of the EU projects have been extremely productive and under the spot of the research community in service robotics and wearable technology: as mentioned also in Dr Solazzi application, media coverage has been an important aspect of his communication portfolio in national and international public events and press conferences.

Furthermore Dr Solazzi has been principal investigator for 4 national projects for a total quantum funding of more than 400 thousands euro, from leading companies in the fields of automation and national/regional funding agencies. The activities have produced novel technology personally designed and developed by Dr Sollazzi and to the deposit of two international patents.

For all the above mentioned reason and tangible proofs provided by the candidate, I fully support the candidacy of Dr Solazzi for the Associate Professorship, and I believe he is an excellent candidate with a CV fulfilling all the teaching and research requirements for the position.

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ANNEX 4

Assessment by Prof. Vincenzo Parenti Castelli

1. Teaching

Dr. Massimiliano Solazzi delivered a number of courses at undergraduate and PhD level with continuity at Scuola Sant'Anna and at Engineering Faculty of University of Pisa in the area of Mechanical Engineering and Robotics. Specifically, the courses "Mechanical transducers" and "Principles of functional machine design with FEM applications", "Mechanics of Robots I" and "Robotics and Human-machine interfaces", ranging from basic Mechanics to Robotics.

He supervised 5 PhD students and 8 undergraduate students.

He was involved in various institutional activities, among which the evaluation committee for PhD and for Participation in the committee for admission of Honour Students to Scuola Sant'Anna.

In the opinion of this member of the evaluation committee the overall Dr Solazzi teaching activity has to be considered very good.

2. Publications

The scientific production of Dr Massimiliano Solazzi is coherent with his scientific national sector (ING-IND/13). The production features many publications reported in relevant journals and conferences in the area of Robotics, Haptic Interfaces and Human-Robot Interaction, where he appear as author or coauthor.

Among 12 presented journal publications 3 papers are published in Transactions on Haptics, 3 papers published in RAL in the area of exoskeletons, and 3 other papers published in IEEE TRNSE; MIT press Presence and Frontiers in the area of Wearable Haptics and Human-Robot Interaction. The papers provide relevant contribution to the kinematic of parallel mechanisms and underactuated exoskeletons.

The publications clearly show the candidate's activity in the treated areas. Namely, Haptics, Kinematics, Machine Design and Wearable Robotics.

Dr Solazzi papers in the area of exoskeletons, haptics and structural dynamics were awarded as best finalist papers.

Dr. Solazzi has an h-index of 16 according to Scholar and 14 according to Scopus. Remarkably the production of Dr Solazzi increased significantly in the last three years with an important increase to 2.13 of the Field-Weighted Citation Impact.

Dr Solazzi is within 20% of the best cited researchers in his scientific sector (ING-IND/13) in the last ten years, and within 10% if normalized to the academic age. His indexes also overcome those necessary to apply for the habilitation to full professorship.

In the opinion of this member of the evaluation committee, the scientific production of the candidate is excellent.

3. Scientific Research

Dr. Massimiliano Solazzi is responsible of the research group of "Intelligent Machines Design" at PERCRO laboratory. His research work deals with the design of robotic interfaces for telepresence and rehabilitation, Haptics, advanced Kinematics and Machine Design, Wearable Robotics and Inspection Robotics for Maintenance on condition.

Dr. Solazzi was involved in a number of European projects, among which two EU leading projects in the area of Disaster Robotics (H2020 RIA Centauro (2015-2018)) and Wearable Haptics (IP ICT WearHap (2013-2017)).

He was Principal Investigator in several relevant industrial projects, ranging from novel integrated opto-mechatronics solutions for the automotive field (Brembo) to novel hybrid actuation methodologies for exoskeletons: He also contributed to researches in robotics and opto-mechatronics for maintenance on condition (RFI, Trenitalia), with important partners such as, among others, FCA and ASI.

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Dr Solazzi activity exhibits a continuous participation over time to research projects in outstanding international collaborations, with increasing responsibility roles. Dr Solazzi is author of two international and two national patents.

In the opinion of this member of the evaluation committee, the scientific activity of the candidate is highly remarkable.

In the opinion of this member of the evaluation committee, the overall activity of the candidate Dr Solazzi is of high quality, which makes Dr Solazzi fully deserve the promotion to Associate Professor.

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ANNEX 5

Assessment by Prof. Giulio Rosati

1. Teaching

Dr. Solazzi has been course leader in numerous courses at undergraduate and PhD level (Scuola Sant'Anna and University of Pisa), covering fundamental aspects in the area of machine mechanics and Robotics. Dr. Solazzi participated to the evaluation committee for PhD and to the committee for admission of Honour Students to Scuola Sant'Anna, and supervised several dissertations (2 PhD students, 3 Master students and one Diploma student). On the whole, his teaching activity is excellent.

2. Publications

Dr Solazzi's is author or co-author of several scientific publications in relevant journals and conferences in the field of robotics, haptic interfaces and human-robot interaction. Such topics are all comprised in the research field of Applied Mechanics (09/A2).

The 12 journal publications presented include relevant contributions on the kinematics of parallel manipulators, underactuated exoskeletons, haptics and human-robot interaction. The journals wherein such papers are published are all excellent in the field.

Dr. Solazzi's production has an h-index of 14 according to Scopus. Such production had an impressive growth over the last 3 years, with a remarkable impact measured by the Field-Weighted Citation Impact of 2.13. When compared to the Associate Professors in the 09/A2 scientific community, Dr. Solazzi is ranked in the first quartile. Dr. Solazzi received best paper/finalist awards for papers in the area of exoskeletons, haptics and structural dynamics.

The scientific production of Dr Solazzi in terms of publications is excellent.

3. Scientific Research

Dr. Solazzi coordinates the research group on "Intelligent Machines Design" within the PERCRO laboratory. Dr. Massimiliano Solazzi actively participated to several European projects on robotics and wearable haptics, with outstanding international collaborations. He has been Principal Investigator in several industrial projects relevant to the field, in the automotive field (Brembo) and in the field of wearable robotics. He also participated to several other projects in the industrial field, with relevant partners such as FCA, ASI, RFI, Trenitalia, etc, and is co-author of 4 international patents.

Overall, the scientific activity of Dr. Solazzi is excellent.

I express a fully positive recommendation for Dr. Massimiliano Solazzi for its promotion to Associate Professor.



ANNEX 6

Collegial Assessment

1. Teaching

Dr. Massimiliano Solazzi delivered a number of courses at undergraduate and PhD level with continuity at Scuola Sant'Anna and at Engineering Faculty of University of Pisa in the area of Mechanical Engineering and Robotics, specifically, the courses "Mechanical transducers"" and "Principles of functional machine design with FEM applications", "Mechanics of Robots I" and "Robotics and Human-machine interfaces", ranging from basic Mechanics to Robotics.

He has been mentoring of 5 PhD students and 8 undergraduate students.

Overall, Dr Solazzi's teaching activity makes his profile fully eligible for an Associate Professor Position.

2. Publications

The scientific production of Dr Massimiliano Solazzi is coherent with his scientific national sector (ING-IND/13) and is quantitatively consistent with — and qualitatively superior to—that of his peers at a similar career stage and in similar fields of enquiry

Scientific publication of Dr Solazzi is solid, and pertinent with the research area of the associate professorship. The current publication records counts journal contributions in the fields of haptic, mechanics and machine theory, robotics and control. The targeted journals are amongst the most relevant for the above mentioned areas like IEEE Transaction on Haptics, IEEE Transaction in Neural System and Rehabilitation Engineering and IEEE Robotics and Automation Letters, MIT Presence and Frontiers Publishing.

One of the presented papers received a prestigious Best Paper Award. As a result, beyond the raw indication of bibliometric citation indices, it is clear that his work is attracting considerable interest as can be seen from their rapid increase in the past few years.

Remarkably the production of Dr Solazzi increased significantly in the last three years with an important increase to 2.13 of his Field-Weighted Citation Impact. Dr Solazzi is within 20% of the best cited researchers in his scientific sector (ING-IND/13) in the last ten years, and within 10% if normalized to the academic age. His indexes also overcome those necessary to apply for the habilitation to full professorship.

Overall, in the opinion of this evaluation committee, the scientific production of the candidate is excellent.

3. Scientific Research

Dr. Solazzi coordinates the research group on "Intelligent Machines Design" within the PERCRO laboratory. Dr Solazzi's research is at the forefront of robotic interfaces with humans with notable contributions in this field.

Dr. Massimiliano Solazzi has actively participated to several European projects on robotics and wearable haptics, with outstanding international collaborations. Dr. Solazzi was involved in a number of European projects, among some of the EU projects have been extremely productive and under the spot of the research community in service robotics and wearable technology.

Furthermore Dr Solazzi has been Principal Investigator in several relevant industrial projects, ranging from novel integrated opto-mechatronics solutions for the automotive field to novel hybrid actuation methodologies for exoskeletons, contributing as well to researches in robotics and opto-mechatronics for maintenance on condition, with important industrial partners. Moreover Dr Solazzi is author of two international and two national patents.

Overall, the scientific activity of the candidate is highly remarkable.

Taken together, the overall activity of the candidate Dr Solazzi is of high quality, which makes Dr Solazzi fully deserving the promotion to Associate Professor.

Massimiliano Solazzi