

PURSUANT TO ART. 18, SUBSECTION 1, OF ITALIAN LAW 240/2010, SELECTION OF ONE PROFESSOR (LEVEL 2), FOR THE ACADEMIC RECRUITMENT FIELD 09/G2 BIOENGINEERING - ACADEMIC DISCIPLINE ING-IND/34 "INDUSTRIAL BIOENGINEERING" AT THE INSTITUTE OF BIOROBOTICS - ACADEMIC CLASS OF EXPERIMENTAL AND APPLIED SCIENCES, ISSUED BY RECTOR DECREE NO. 381 DATED 10/07/2016, PUBLISHED ON THE SITE OF THE MINISTRY OF EDUCATION, UNIVERSITY AND RESEARCH ON JULY, 16, 2016, NOTICE OF WHICH WAS PUBLISHED IN THE GAZZETTA UFFICIALE - 4° SERIE SPECIALE "CONCORSI ED ESAMI" NO. 63 DATED 09/08/2016.

FINAL REPORT

On 2016, December 5, at 13.45 in a room of the Scuola Sant'Anna, met to review the selection process for the recruitment of an associate professor for the Academic Recruitment Field 09/G2 "Bioengineering" – Academic Discipline ING-IND/34 "Industrial Bioengineering" at the Institute of BioRobotics, Academic Class of Experimental and Applied Sciences, the committee nominated by the Rector, by decree No. 516/2016, and made up of:

- Prof. Giulio Bottazzi, Full Professor of 13/A2 Economic Policy at the Scuola Superiore Sant'Anna, member of the Recruitment Committee of the Scuola Superiore Sant'Anna;
- Prof. Arianna Menciassi, Full Professor of 09/G2 Bioengineering at the Scuola Superiore Sant'Anna, designated expert by the Institute of BioRobotics;
- Prof. Carlijn Bouten, Full Professor of Cell-Matrix Interactions at the Eindhoven University of Technology (NL);
- Prof. Lino Ferreira, Coordinator Investigator of the Medicine Faculty of University of Coimbra (PT);
- Prof. Maria Laura Costantino, Full Professor of 09/G2 Bioengineering at the Politecnico of Milano;
- Prof. Gianna Maria Toffolo, Full Professor of 09/G2 Bioengineering at the Università of Padova.

The Committee completed its work on the following days:

- Preliminary meeting: October, 11, 2016, via teleconference
- Second meeting: December 5, 2016 via teleconference Prof. Ferreira, Bouten, Costantino and in Pisa Prof. Toffolo, Menciassi, Bottazzi.

The Committee held a total of 2 meetings, and began its work on 2016, October 11th and concluded it on 2016, December 5th.

In the preliminary meeting, the Committee nominated the President and Secretary. It was noted in the

minutes that each member had declared that they had no kinship or affinity up to the fourth degree inclusive, either with each other or with the candidate.

The Committee established the date by which their work would be concluded, the criteria with which the publications, the curriculum and teaching activities of the candidate were to be evaluated, and decided to not invite the candidate to hold a seminar.

In the second meeting the Committee examined the publications, the CV and the didactic activity of the candidate, and declared the following candidate to have won the position:

Leonardo Ricotti

The individual and collegial judgments expressed are attached to this report (Annex 1).

Read, approved and signed.

THE COMMITTEE

Prof. Gianna Maria Toffolo

President

Prof. Maria Laura Costantino

Member

Prof. Lino Ferreira

Member

Prof. Carlijn Bouten

Member

Prof. Giulio Bottazzi

Member

Prof. Arianna Menciassi

Secretary

Annex 1

INDIVIDUAL ASSESSMENTS

Prof. Gianna Maria Toffolo

The 15 publications selected by Leonardo Ricotti, appeared in relevant international peer reviewed journals, are all fully coherent with the requested profile and suggest an intense and qualified research activity in bio-robotics, bio-systems and advanced materials. The order of the authors indicates a significant contribution of the candidate. The overall scientific production is wide and has a good visibility by the international community, as indicated by the key bibliometric indexes.

The candidate demonstrated a good ability to work in interdisciplinary teams, collaborating with many research groups, even in the framework of national and EU founded projects. The curriculum also evidences a substantial editorial activity, patent filing and participation to several activities, e.g. related to novel education projects and workshop organizations.

He performed teaching activity within a number of bioengineering courses at M.Sc. level, he was responsible of a PhD course and supervised the activity of a wide number of Ph.D. students and research assistants.

Overall, I'm convinced that Leonardo Ricotti fulfils all the scientific and teaching qualification criteria for the position of level 2 professor in 09/G2: Bioengineering – Academic discipline ING-IND/34: Industrial Bioengineering at Scuola Superiore Sant'Anna.

Prof. Maria Laura Costantino

Evaluation of the scientific publications presented by Leonardo Ricotti

The candidate submits 15 publications to be considered and evaluated; most of the publications show the name of the Candidate as the first author. All the publications are consistent with the profile of the position to be covered and the activities to be performed. The subjects of these publications are original and innovative, the same also applies to the used methods which are rigorous and effective. The scientific relevance is good with reference to both the core of the subject and the scientific relevance of the Journal where the papers were published. The bibliometric indexes are outstanding, witnessing the relevance of the treated subjects and the adopted methods.

Evaluation of the Curriculum of Leonardo Ricotti

The Curriculum of the Candidate is highly relevant and outstanding. The Candidate obtained the Italian qualification for the profession of Associate Professor of Bioengineering (Abilitazione nazionale alla docenza, settore disciplinare 09/G2) in December 2014.

The Curriculum of the Candidate reports a strong and efficient activity in terms of involvement in international and national research projects, scientific meeting organization, editorial activity, national and international collaborations with public and private institutions, universities, and also with Italian clinicians, and patent filing. All these activities gave the Candidate strong scientific standing in the international environment which made him to be also awarded of many prizes with reference to his research work and to be invited to give lectures in international conferences. The Curriculum also reports a strong activity in terms of management and coordination of research groups and fund raising.

Evaluation of the teaching activity by Leonardo Ricotti

Teaching activity of the Candidate is strong and relevant, both with reference to the number of the held courses and the supervision of both PhD and Master of Science students. Moreover, other

education activities pertaining the implementation of new training products have to be highlighted. All these activities are coherent with the ING-IND/34 sector.

Based on the above considerations I strongly believe that Leonardo Ricotti meets all the scientific and education requirements established in the call for the selection of one professor (level 2) for the academic recruitment field 09/G2 Bioengineering – Academic discipline ING-IND/34 “Industrial Bioengineering” at the Institute of Biorobotics and deserves to be appointed this role.

Prof. Lino Ferreira

The Curriculum of the Candidate is outstanding for his career stage. Leonardo has published 42 papers and filed 7 patents. Leonardo has also demonstrated outstanding supervision skills. He supervised with success the work of 13 MSc students and he is currently the supervisor of 5 MSc students. He is also currently the supervisor/co-supervisor of 9 PhD students. Leonardo has also attracted considerable research funds (more than 3 million euros) to implement a scientific program at SSSA. Moreover, Leonardo has several running collaborations with international leaders in the areas of bio-robotics and a network of contacts with medical staff that will increase the visibility and social impact of his work.

Based on the above considerations I strongly believe that Leonardo Ricotti meets all the scientific and education requirements established in the call for the selection of one professor (level 2) for the academic recruitment field 09/G2 Bioengineering – Academic discipline ING-IND/34 “Industrial Bioengineering” at the Institute of Biorobotics and deserves to be appointed this role.

Prof. Carlijn Bouten

Scientific profile of the candidate with respect to (inter)national standards

The candidate has the right education and qualifications. He has been awarded on several occasions and is active in science for quite some time. Compared to the standards at my own university and in my country for admission to the level of associate professorship, the scientific profile and scientific production is less well developed and less mature. However, the candidate's number of publications and research involvement over the last years shows a rapid increase, typical of a very active researcher. The candidate also works on emerging fields and seems to be at the very forefront of his field. He is also a very interdisciplinary researcher, which is essential for the requested position. He is well aware of his peers in these areas.

Scientific collaboration

The candidate has a very broad research interest and works in various fields and with various international research groups. This is typical of interdisciplinary research, but also bears the risk of not being visible, not being recognized as an expert by his peers, or not being in the lead at some times. I would advise him to be at the forefront of one or two of these fields and first and / or last author of publications more often (e.g. in the lead in these particular fields).

Didactic activities, including research training programs, with attention to experience abroad

Teaching and mentoring activities are according to expectations for this position.

Valorization, in particular ownership of patents

The candidate already has a very good patent position. He is also involved in industrial collaboration and collaborates with clinical partners for the translation of his basic work.

Organization, Management and Coordination of research groups in (inter)national research projects

The candidate is well known with research management and has a good track record of fund raising. The candidate has experience with editorial activities since 2012 and some experience with other relevant management activities (committees etc). He also has good experience with organizing education.

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Prof. Giulio Bottazzi

Since I do not belong to the academic discipline ING-IND/34 "INDUSTRIAL BIOENGINEERING", I will not express an individual assessment of the candidate.

Prof. Arianna Menciassi

Scientific publications evaluation

The candidate has submitted 15 publications, all papers are published on ISI journals and many of them have an H-index higher than 4. The candidate is the first author in 5 publications and the second author in other 5 publications. The bioengineering methodology is solid and the approach is original, with topics ranging from biorobotics to smart materials and implantable biomedical devices. The coherence between the presented publications and the professor profile of the call is excellent. The 15 publications well represent the candidate profile, as assessed by looking at the overall scientific production and at the candidate curriculum. The papers citations are impressive and the citation trend is positive (about 30 citations more have been collected since the day of the application, Source Scopus).

Curriculum evaluation

The candidate possesses a very good experience in managing research activities; he is the Head of the "Micro-Nano-Bio Systems and Targeted Therapies" Lab at the BioRobotics Institute. His efforts in preparing research proposals is remarkable, and he obtained also very good results in an ERC Starting proposal. He has been involved as research collaborator in the framework of European, national and international projects. He has organized a couple of scientific events (i.e. thematic workshop / symposium) and he has a quite impressive list of awards, especially as follow-up of his PhD activity. The candidate filed 7 patents, thus demonstrating a deep attention also towards the impact of his research activity.

Teaching activity evaluation

The courses held personally by the candidate are in the framework of the PhD program in BioRobotics and are coherent with the ING-IND/34 sector. The candidate supported also many different courses of other ING-IND/34 colleagues in the last 5 years. He had a leading role in the design and launch of a Joint Master Degree in Bionics Engineering, between Scuola Sant'Anna and the Pisa University.

I believe that Leonardo Ricotti fulfils all the scientific and teaching criteria for the position of level 2 professor in 09/G2: Bioengineering – Academic discipline ING-IND/34: Industrial Bioengineering at the Scuola Superiore Sant'Anna.

COLLEGIAL ASSESSMENT

Based on the originality, relevance, innovative and solid methodological content of each presented publication, of their full coherence with the profile established in the call, prestigious editorial collocation, diffusion among the scientific community, on the Candidate contribution as documented by authorship order, and on the overall coherence with his profile, the scientific production of the Candidate is of high level.

The curriculum of the Candidate is highly relevant and outstanding, since it reports the full responsibility of a research laboratory, the involvement in many international and multidisciplinary collaborations, the participation to a number of research projects, a quite impressive list of awards, and an intense editorial activity.

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The teaching activity of the Candidate is coherent with the ING-IND/34 sector and relevant, both with reference to the courses and to the supervision of PhD and Master of Science students and research assistants. Of relevance, other education activities pertaining the implementation of new training products.

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