



DELIBERA

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| Organo | COMITATO PER IL RECLUTAMENTO E LO SVILUPPO DELLE CARRIERE |
| Data seduta | 11 settembre 2018 |
| Sede | Via Calepina, 14 - Trento |
| Oggetto | Valutazione di ricercatore di cui all'art. 24, comma 3, lett. b), L. 240/2010 ai fini della chiamata nel ruolo di professore associato: dott. Lucio PANCHERI, Dipartimento di Ingegneria industriale. |

Sono presenti alla deliberazione:

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| VALENTINA NIDER | Presidente | P |
| ALBERTO BELLIN | Componente | P |
| YURI BOZZI | Componente con funzioni di segretario | P |
| LUCA NOGLER | Componente | P |
| RAUL PAOLO SERAPIONI | Componente | P |

Visto lo Statuto dell'Università degli Studi di Trento emanato con D.R. 167 del 23.04.2012;

Vista la legge 30 dicembre 2010 n. 240 "Norme in materia di organizzazione delle Università, di personale accademico e reclutamento, nonché delega al Governo per incentivare la qualità e l'efficienza del sistema universitario" e in particolare l'art. 24, comma 5;

Visto il Regolamento per il Reclutamento e la progressione di carriera di professori e ricercatori, emanato con D.R. n. 563 del 29 ottobre 2013 e in particolare l'art. 32 "Valutazione dei titolari dei contratti di cui all'art. 20, comma 1, lettera b) del presente Regolamento ai fini della chiamata nel ruolo di professore associato";

Visti i "Criteri per la valutazione dei ricercatori a tempo indeterminato con contratto di cui al comma 3, lettera b), dell'art. 24 della Legge 240/2010, ai fini della chiamata nel ruolo di professore associato", approvati dal Comitato per il Reclutamento e lo Sviluppo delle Carriere nella seduta del 21 luglio 2015;

Vista la delibera del Consiglio del Dipartimento di Ingegneria industriale del 9 maggio 2018, con la quale si esprime parere favorevole all'inquadramento del dott. **Lucio PANCHERI** nel ruolo di professore associato per il settore concorsuale 09/E3 (Elettronica) – settore scientifico disciplinare ING-INF/01 (Elettronica);

Vista la propria delibera del 8 giugno 2018, con la quale sono stati individuati i referee esterni chiamati a valutare la maturità scientifica e didattica del dott. **Lucio PANCHERI** nel ruolo di professore associato per il settore concorsuale 09/E3 (Elettronica) – settore scientifico disciplinare ING-INF/01 (Elettronica);

Viste le valutazioni espresse dai tre referee sul profilo del dott. **Lucio PANCHERI**, di cui sono riportati di seguito alcuni estratti:

Referee 1:

I esteem very highly Dr. Pancheri's research. On the topic closest to my own field (CMOS SPAD sensors), he continues to generate some of the most original concepts in the literature. His paper [B.8] introduces a now seminal technique of "well-sharing" which is now found in most commercial CMOS SPAD products enabling high fill-factor arrays. Paper [A.24] shows particularly commendable work on pinned-photodiode 3D image sensors which influenced the world's leading semiconductor companies in this area of huge current investment.

In the last few years, he has authored many well-regarded papers on the design and modelling of CMOS SPADs and APD arrays [A.44,A.45,A.57] with world-leading performance in terms of noise and pixel pitch. This established technology platform offers him many avenues for future commercial exploitation and funding bids. Dr. Pancheri is a rare individual who bridges between consumer and science communities for solid-state photodetectors and I believe this is very prospective for crossfertilisation of ideas between these two domains. I would highlight his recent research on two-tier SPAD arrays [B.69] as evidence of a highly innovative concept with great potential in the near future.

Dr. Pancheri's publishing profile is distinguished, encompassing all the top IEEE journals and conferences as well as leading publications in the nuclear science area. He has engaged in research in a number of very exciting topics which should make it easy to attract national/EU research funding as well as international students. He has also developed an excellent range of international collaborators and works well in multi-institute, multidisciplinary research teams, an essential attribute in modern large scale funding bids. The relationship with Fondazione Bruno Kaessler and some of their world-class researchers is a key strength.

Dr. Pancheri's other academic indicators such as external presentations, PhD supervision, conference organisation, academic reviewer are exactly at the level that I would expect for an associate professor. I do not hesitate to recommend Dr. Pancheri for a tenured academic position in your University.

Referee 2:



The principal research field of Dr. Lucio Pancheri is the development of optical detectors in different technologies, especially in CMOS technologies. In many cases, his research activities have included, in addition to the detector development, also the development of interface and other electronics and even the realization of complete systems for specific applications. From the point of view of applications, his interests have been devoted to optical spectroscopy (e.g. fluorescence measurement), 3D range imaging and positron tomography (also nuclear electronics in general), for example. A very important topic in his work has been the development of single photon detectors (SP AD) and related signal processing realized in standard CMOS technologies. This topic is extremely important due to its numerous potential applications (e.g. quantum telecommunications in addition to the above listed topics). Within this field, for example, Dr. Pancheri has achieved important results, which have been well-accepted and noticed by the international research community.

Dr. Pancheri has published with his co-workers 62 journal papers, 5 book chapters, 80 conference papers, and has received several patents. His h-index is 18 in the WoS, which taking into consideration of his age, is quite high and indicates the importance of his research results. He has been active in international projects and is well-connected with other relevant research teams working in his field.

Dr. Pancheri has also been active in teaching. During 2014-2018 he has given a master course and a PhD course on his research topic at the University of Trento, for example. In addition, during 2015-2018 he has acted as an advisor/co-advisor for several PhD students, and acted also as the external reviewer for 4 PhD theses (2013-2018). During 2015-2018 Dr. Pancheri has published 25 journal papers with his co-workers, all in highly-ranked journals such as Optics Express, Nuclear Instruments and Methods, and IEEE Transactions on Electron Devices, for example. Thus, these studies have gone through a strict review process indicating high quality of the research. Many of them are well received by the international community, e.g. the paper reviewing SP AD detectors in 150nm CMOS (Optics Express 25 (11), 2017). In addition to the journal papers, Dr Pancheri has published with his co-workers also 15 conference papers and one book chapter during the same period.

In conclusion, to my mind Dr. Lucio Pancheri is a talented scientist, who has made important contributions in his highly relevant research field. His research activity has been very high and shows no sign of stagnation. He is recognized internationally as an expert of his field. Thus, I warmly and without any hesitation recommend the promotion of Dr. Lucio Pancheri to the tenured Associate Professor position at the University of Trento.

Referee 3:

Following your kind request, I am reporting about the research and scholarly contributions of Dr. Lucio Pancheri. The research activity performed by Dr. Pancheri has grown in different scientific subjects over the years, well aiming to coherently developing a specific expertise in the field of sensing systems. The main subjects include CMOS SPAD- and APD-based systems, CMOS image sensors, and radiation detectors, with noticeable time continuity. As a key factor, the candidate has shown attention to all aspects of the electronic systems, spanning from the basic detector fabrication to the design of readout electronic chips, up to the experimental testing phase and the development of a whole detection system. Such a wide-band approach should be particularly praised, as it gives a large and mature view of the technological and scientific issues related to the realization of sensors. The variety of technological choices implemented is also worth to be mentioned, as the researcher has been able to successfully design and manage different solutions for different applications. The publication rate is very high and his papers have often appeared in the top reference scientific journals for the international community, such as NIM and IEEE-TNS. He has collected qualified participations and has given presentations at several international conferences, among which we may see the most important ones for the sensor research field worldwide. The patenting activity is florid and demonstrates high attention to the fundamental topic of the technology transfer from academic labs to applications. His bibliometric parameters are excellent. He also shows a meritorious editorial activity. Scientific collaborations are well qualified, often within the vivid scientific environment of INFN Gr.V; an important connection was developed with one of the best technical universities in the world (TUM), where the candidate has spent two research periods. He has been involved in several national and international research projects, with leading roles in particular in various projects funded by INFN and PAT over the years. His teaching activities are well aligned with the academic positions occupied by the candidate. He has developed a rich experience in managing Master and PhD students thesis work.

On the basis of these reasons, I do believe that Dr. Pancheri has reached full scientific maturity needed for being promoted to the position of Associate Professor at the University of Trento. I wish him to be an excellent researcher and teacher, and a great acquisition for your institution.

Visto il curriculum vitae del dott. **Lucio PANCHERI**;

Con voto unanime;

Delibera

1. di formulare la seguente valutazione del dott. **Lucio PANCHERI**, ai fini della chiamata ai sensi dell'art. 24 comma 5, L. 240/2010 nel ruolo di professore associato per il settore concorsuale 09/E3 (Elettronica)



– settore scientifico disciplinare ING-INF/01 (Elettronica):

*I giudizi espressi dai referee esterni sul contributo scientifico, la qualità dell'attività di ricerca e l'esperienza professionale del dott. **Lucio PANCHERI**, nonché sulla coerenza del suo profilo con i requisiti attesi per il ruolo di professore di seconda fascia, sono molto positivi.*

*A seguito di attenta valutazione del curriculum e delle pubblicazioni, e sulla base dei giudizi formulati dai referee, il Comitato ritiene il profilo scientifico del candidato pienamente adeguato al ruolo ed esprime parere favorevole alla chiamata del dott. **Lucio PANCHERI** nel ruolo di professore associato per il settore concorsuale **09/E3** (Elettronica) – settore scientifico disciplinare **ING-INF/01** (Elettronica).*

F.to Il Presidente
Prof.ssa Valentina Nider

F.to Il Segretario
Prof. Yuri Bozzi

