



DELIBERA

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. Pasquale ONORATO, Dipartimento di Fisica

Sono presenti alla deliberazione:

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 Fisica del 18 aprile 2018, con la quale si esprime parere favorevole all'inquadramento del dott. **Pasquale ONORATO** nel ruolo di professore associato per il settore concorsuale 02/D1 (Fisica applicata, didattica e storia della fisica), settore scientifico disciplinare FIS/08 (Didattica e storia della fisica);

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. **Pasquale ONORATO** nel ruolo di professore associato per il settore concorsuale 02/D1 (Fisica applicata, didattica e storia della fisica), settore scientifico disciplinare FIS/08 (Didattica e storia della fisica);

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

Referee 1:

With this letter I would like to give my full support for the promotion of Dr. Pasquale Onorato (Pasquale hereafter) to Associate Professor at the University of Trento, Italy. I have known Pasquale [...], and I was immediately impressed by his scientific activity, creativity and his educational and outreach activities. We have never published together.

His CV counts close to 100 publications in high-level scientific journals, with several well-cited articles. His educational activities as well testify to a creative and highly engaged researcher and teacher who has made several novel and interesting contributions to physics education research.

I consider Pasquale as a well-established researcher with a top educational track record. His relentless activities on science outreach and in particular physics outreach locally and nationally are also of the highest quality. Pasquale has also guided several students towards their completion of PhD theses and Master of Science theses. In addition he keeps attracting several research funds for his activities and demonstrates activities and scientific independence and creativity worthy of being considered for promotion to the level of Associate or full Professor.

Pasquale is also a very open-minded and likable person, with excellent collaborative and interpersonal skills. He will be an asset wherever he is employed.

The least I thus can do in this letter is to give my strongest support. He really deserves to be promoted to the level of Associate Professor.

Referee 2:

As far as I am concerned, I express here my positive assessment on the scientific maturity reached by Dr. Pasquale Onorato for being promoted to the position of Associate Professor at the University of Trento.

I know the excellent scientific work carried out by Dr. Pasquale Onorato at international level for physics education research since long time. From his curriculum it emerges that in the last three years he worked



hard in continuity with the past by means of a content-based research approach in physics education research.

The scientific work includes studies published in ISI journals on:

- In depth aspects of rolling motion and friction, very new and significant;
- Education proposals for measurements in optical spectroscopy, with original approach;
- Educational experiments on photoluminescence and optical spectrometry: a very innovative contribution in the field;
- Implementation and research based results on teaching quantum physics in secondary school, contributing to this very important research line in physics education in this period;
- Tools for ICT employment in applying Feynman approach to quantum physics;
- Discussion of Gibbs and Boltzmann approach to thermodynamics;
- Study of apparatuses, like the time answer of a thermometer.

Attention to the experimental activities integrated with the theoretical one and praxis in school characterize the very good contribution in physics education research. The original employ of information communication technologies is another characteristic of his contribution. Original, high quality contributions enrich the research field in which he works.

In addition, he contributes to teacher education, both for pre service formative modules both for teacher professional development. Relevant is his contribution in Masters at national level promoted by the Ministry of education and held with the cooperation of many universities.

His contribution in teaching at university level is rich and good.

His contribution in physics education research is excellent.

I confirm that in my opinion, he has reached the scientific maturity needed for being promoted to the position of Associate Professor.

Referee 3:

Dr. Onorato has a consistent continuity in scientific research, covering the last 15 years, and in my opinion it is important to underline preliminarily the fact that, before becoming a full-time researcher in the field of Physics Education, Dr. Onorato has been active for many years in theoretical studies in the field of condensed matter.

Significant experience in research in some domain of frontier physics is certainly a very useful precondition for an approach to Physics Education capable of taking into account not only the pedagogical point of view but also the concrete difficulties of laboratory practice and theoretical studies on advanced issues.

For what concerns Dr. Onorato's activity in the years 2015-2018, one may first of all observe that his production is not only quantitatively relevant (more than 5 papers per year in international peer-reviewed and indexed journals), but also significantly distributed on quite different issues, showing a really multidimensional approach to Physics Education.

In particular I found a quite appreciable effort in the following directions:

- Sum over paths approach to the introduction of basic concepts in Quantum Mechanics (papers 7, 9 and 14 in the short list included in the documentation). The approach is conceptually correct and pedagogically intriguing, and may certainly help in dealing with some of the non-intuitive aspects of Quantum Mechanics (superposition, indeterminism, Pauli principle,..)
- Microscopic approach to Classical Thermodynamics (papers 10, 13 and 15). It is probably the most convincing approach from a conceptual point of view, making quite explicit both the continuities and the discontinuities with respect to Classical Mechanics, but it is also a quite effective way of introducing such issues as irreversibility and entropy.
- Design and realization of simple low cost instrumentation for use in high school and first-year university courses (papers 3, 5, 6, 8, 11, 12, 16, 17, 18, 19), with special attention to exploiting the possibilities offered by the most recent (and easily available) technologies, like high speed smartphone cameras.

The results presented in the papers are of a rather good scientific quality, and in most cases they constitute a valid contribution to a better and more modern approach to Physics Education, both at the high school level, where many of the ideas introduced in the papers have been successfully tested, and also in the first years of university studies.

The most serious criticism to Dr. Onorato's activity concerns the fact that he has been almost constantly embedded into a single collaboration, with scarce attempts to find different contacts and to acquire a definite and recognizable individual scientific personality. Even in recent times the number of papers where he appears as the first contributor is quite limited (no more than one per year in the years 2016- 2018, assuming, as it looks rather evident, that authors were not listed alphabetically).

While I have no reason to doubt that his contribution to the collaboration has been essential, I would certainly have appreciated a greater evidence of scientific autonomy, especially in view of the assumption of a higher degree of responsibility within an academic institution.

Visto il curriculum vitae del dott. **Pasquale ONORATO**;

Con voto unanime;

Delibera



1. di formulare la seguente valutazione del dott. **Pasquale ONORATO**, ai fini della chiamata ai sensi dell'art. 24 comma 5, L. 240/2010 nel ruolo di professore associato per il settore concorsuale 02/D1 (Fisica applicata, didattica e storia della fisica), settore scientifico disciplinare FIS/08 (Didattica e storia della fisica):

*I giudizi espressi dai referee esterni sul contributo scientifico, la qualità dell'attività di ricerca e l'esperienza professionale del dott. **Pasquale ONORATO**, 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. **Pasquale ONORATO** nel ruolo di professore associato per il settore concorsuale **02/D1** (Fisica applicata, didattica e storia della fisica), settore scientifico disciplinare **FIS/08** (Didattica e storia della fisica).*

F.to Il Presidente
Prof.ssa Valentina Nider

F.to Il Segretario
Prof. Yuri Bozzi

