



## TRANSLATION OF THE DIRECTOR'S DECREE NR. 623 DATED 09.08.2023

### Selection for the conferment of one PhD fellowship on “Physics and algorithms for Quantum Technology” financed by Technology Innovation Institute – Sole Proprietorship L.L.C - Academic year 2023/24

In the framework of the agreement signed with **Technology Innovation Institute – Sole Proprietorship L.L.C**, the International School for Advanced Studies (SISSA) announces a selection based on academic qualifications and an interview for the conferment of one fellowship in the framework of the Theory and Numerical Simulations of the Condensed Matter, on **Physics and algorithms for Quantum Technology**, starting from the academic year 2023/24:

**Project:** The project will deal with quantum correlations and entanglement in many-body theories, with specific applications to spatially confined quantum gases in low-dimensional structures, atomtronics, mesoscopic networks, and superconducting circuits. Quantum Information Algorithms will be developed to solve practical problems more efficiently than with classical approaches, and to find ways to implement them in quantum hardware available in the near future. Applications to quantum sensors and quantum communication will be investigated.

**Fields of Research:** Atomtronics, Mesoscopic Physics, Physics of Many-Body Systems, Quantum Information, Quantum Sensors, Photonics.

### **Fellowship and other benefits Financed by the Technology Innovation Institute – Sole Proprietorship L.L.C.**

The admitted candidate will be awarded a fellowship of the amount of € 16.242,96 net per year for the entire duration of the Ph.D course

A contribution towards living expenses of the amount of €100,00 gross per month will be awarded to those who will subscribe a registered rent contract in the Trieste province.

A “laptop contribution” up to € 400,00 may be granted upon request and presentation of the relevant invoice.

A contribution towards the expenses to be enrolled in the health insurance system up to € 198,77 will be granted to non-EU students only.

Students enrolled in the third/fourth year can request a contribution of up to € 1.000,00 for their access to training and/or to create a network of academic contacts to help them in their future career.

A contribution (70% of the amount of the fellowship) may be awarded to students who should be forced to suspend their activity due to illness, maternity or other serious reasons up to 5 months.

### • **Requirements:**

SISSA welcomes applications from young candidates who have completed, or are going to complete, their undergraduate studies, with a strong interest in research.



To apply, candidates, without limitations of age and nationality, must be in possession of one of the following degrees **by 31st October, 2023**:

- Italian **laurea** or **laurea specialistica/magistrale** in Physics or Physical Engineering.
- A University degree obtained abroad and considered equivalent to the aforementioned Italian degrees by the evaluation Committee.

• **Online application:**

An online application must be filled and sent using the procedure available at the page <https://pica.cineca.it/sissa/> **by 13.00 hrs of 12<sup>th</sup> September 2023 (Italian time)**.

Candidates should upload the following documents in pdf format:

- *curriculum vitae*;
- a certificate of University examinations taken (with marks);
- a final degree certificate;
- If, at the time of application, candidates should not be yet in possession of a degree certificate, they can submit it at the time of the examination.

*European Union candidates can submit a personal declaration instead of the aforementioned certificates.*

- a copy of the diploma thesis (if any), or its abstract.

At the end of the procedure, candidates will have to indicate the names and email addresses of two professors that will receive an email requesting to send a recommendation letter through the same online procedure **by 13.00 hrs. of 14<sup>th</sup> September 2023 (Italian time)**.

**The candidate will then have to print out the admission request form, sign it and send it through the same online procedure.**

Candidates with disabilities certified according to the law n. 104/1992 and subsequent modifications, and those diagnosed with Specific Learning Disorder certified according to the law n. 170/2010 and to the D.M. n. 5669 dated 12/07/2011, can report their needs together with the submission of the admission application, within the deadline set by this announcement.

• **Selection Procedure:**

After the deadline of the announcement, the Selection Committee, which will be composed of three (3) TQT Faculty Members of SISSA, one (1) TQT Member of ICTP and one (1) TII Member, will evaluate the documentation produced by the candidates (*curriculum vitae*, letters of recommendation, etc.). Candidates who have obtained a minimum score of 21/30 will be invited to take the interview which will be held during the week **18<sup>th</sup> – 22<sup>nd</sup> September 2023**, via zoom, with scheduled times that will be communicated later on.

For the interview, the candidate should be reachable at the address indicated in the application, at the time communicated by SISSA through email.



Candidates should show an ID document for identification at the beginning of the interview. The absence of a contact email in the application or of a valid ID during the interview, imply the exclusion from the competition.

• **Admission:**

The admitted candidates will be notified by email and will be asked to be present at SISSA on 1st October 2023, for the registration.

**Failure to do so without a valid reason will result in the loss of the fellowship awarded.**

**In order to be enrolled and to be awarded the fellowship, admitted candidates must pay a “Regional Tax” of the amount of € 120,00 - € 160,00 per year. Information can be retrieved at <http://www.ardiss.fvq.it/>.**

For information about rights and duties of the doctoral students please consult the Teaching Regulations of the PhD courses of SISSA issued with D.D. 750 of 31.10.2022 [Regulations | Scuola Internazionale Superiore di Studi Avanzati \(sisssa.it\)](#).

As per Legislative Decree 30.06.2003 n.196, and of the European Regulation 2016/679 (General Data Protection Regulation), we inform that all data given to this Administration will be processed only for purposes related to and instrumental to the existing contract, in compliance with the provisions in force.

The Director  
Prof. Andrea Romanino  
(digitally signed)