UNIVERSITÀ DEGLI STUDI FIRENZE

Area Affari Generali e Legali
Centrale Acquisti

DECRETO DEL DIRIGENTE

G006_2024 - Procedura Negoziata senza bando ai sensi dell'art. 50 co. 1 lettera e) D.lgs. 36/2023 per l'affidamento della fornitura di n.8 rivelatori superconduttivi di singolo fotone (denominato "sistema"), con elevate efficienza quantica (> 90%) e prestazioni allo stato dell´arte – aggiudicato in base al criterio dell'offerta economicamente più vantaggiosa, ai sensi dell'art. 108 del d.lgs. 36/2023. CPV 38636000-2 CIG B24E73569A CUP B93C22001680006 CUI F01279680480202300161 – importo a base di gara. € 215.000,00 oltre IVA di legge. RUP: dott.ssa Emanuela Pasquini - Decreto di nomina Commissione Giudicatrice ex art. 93 D.Lgs. 36/2023

Il Dirigente,

VISTO il d.lgs. n. 36/2023 recante *"Codice dei contratti pubblici"* e relativi allegati;
VISTO lo Statuto dell'Università degli Studi di Firenze;
VISTO il Regolamento di Amministrazione, Finanza e Contabilità dell'Università degli Studi di Firenze;
VISTO il d.lgs. 165/2001 e ss.mm.ii.;
VISTA la normativa vigente in materia di anticorruzione e trasparenza, il Piano Triennale per la Prevenzione della Corruzione e della Trasparenza dell'Università degli Studi di Firenze e il Decreto rettorale del 8 febbraio 2016, n. 98 - Codice di comportamento dell'Università degli Studi di Firenze;
RICHIAMATA la Decisione di contrarre Rep. n. 1108/2024 Prot. 0149634 del 27/06/2024, pubblicata all'Albo n. 8271/2024 Prot. 149665/2024 del 27/06/2024, con cui è stata indetta la procedura in oggetto da aggiudicare con il criterio dell'offerta economicamente più vantaggiosa, ai sensi dell'art. 108 del d.lgs. 36/2023;
DATO ATTO che:

- in data 02/07/2024 è stata pubblicata sul sistema telematico START la procedura negoziata senza bando ID 026002/2024/2024, in oggetto, con scadenza per la presentazione delle offerte al 23/07/2024 ore 12:00;
- alla scadenza del termine risultavano presentate n. due (2) candidature;

RICHIAMATO il verbale di gara rep. n. 1257/2024 prot. 183180 del 01/08/2024, relativo alla fase di apertura e valutazione delle buste amministrative;

RILEVATA la necessità di provvedere alla nomina della commissione tecnica preposta all'esame delle offerte, da costituirsi con un numero di n. 3 componenti, esperti nella materia oggetto del contratto;

VALUTATA la qualificazione, anche mediante esame degli allegati *curricula*, dei seguenti soggetti ai fini della nomina a componente della Commissione Giudicatrice:

- Prof. Davide Bacco, afferente al Dipartimento di fisica e Astronomia (Presidente);
- Prof. Alessandro Zavatta, Primo Ricercatore CNR-INO (commissario);
- Prof. Domenico Ribezzo, Postdoc CNR-INO (commissario)

RITENUTO OPPORTUNO nominare segretario verbalizzante la Dott.ssa Donatella Alfieri - Funzionario Amministrativo - e segretario supplente la dott.ssa Caterina Mameli -entrambe afferenti alla Centrale Acquisti, Università degli Studi di Firenze;

RICEVUTA la disponibilità dei suddetti allo svolgimento dell'incarico;

VALUTATA la non obbligatorietà del nulla osta della amministrazione di competenza ai sensi dell'art. 53 d.lgs. 165/2001 per i commissari esterni vista la gratuità dell'incarico;

ACQUISITE le dichiarazioni (conservate agli atti) dei nominandi commissari da cui risulta, con riferimento agli operatori economici che hanno rimesso offerta, che non sussistono cause di conflitto d'interesse e di incompatibilità ai sensi della normativa vigente;

RITENUTO di dare attuazione alle disposizioni legislative di cui all'art. 28 co.2 del d.lgs. 36/2023, mediante pubblicazione del presente provvedimento e dei curricula allegati prodotti dai membri della commissione giudicatrice, sul profilo del committente Unifi, nella sezione Amministrazione Trasparente - Bandi di gara e contratti, nonché sull'Albo on line della stazione appaltante;

DATO ATTO che tutti gli atti della presente procedura di gara, oltre che sul sistema telematico START e sul profilo committente, sono disponibili anche presso l'Ufficio Centrale Acquisti dell'Università degli Studi di Firenze, via Capponi n.7, primo piano;

ciò premesso,

DECRETA

a) la nomina, ai fini della valutazione delle offerte presentate, relative all'affidamento del servizio in oggetto, della seguente Commissione Giudicatrice, ai sensi dell'art. 93 d.lgs. 36/2023:
    - Prof. Davide Bacco, afferente al Dipartimento di fisica e Astronomia (Presidente);

- Prof. Alessandro Zavatta, Primo Ricercatore CNR-INO (commissario);
- Prof. Domenico Ribezzo, Postdoc CNR-INO (commissario)
- di dare atto che le attività di segretario verbalizzante saranno svolte dalla Dott.ssa Donatella Alfieri - Funzionario Amministrativo, afferente alla Centrale Acquisti;
- Segretario supplente: dott.ssa Caterina Mameli - Università degli studi di Firenze, afferente alla Centrale Acquisti, Università di Firenze;

b) di stabilire che nessun compenso è dovuto per l'attività di cui al presente Decreto;

c) di procedere alla pubblicazione del presente provvedimento e relativi *curricula* sul profilo del committente nella sezione bandi di gara, nonché sull'Albo on line della stazione appaltante, ai sensi e per gli effetti dell'art. 28 co.2 del d.lgs. 36/2023.

Il Dirigente

Dott. Massimo Benedetti

Firmato digitalmente da: MASSIMO BENEDETTI
Data: 28/08/2024 13:13:09 CEST

Allegati:

1. Curricula Commissari

Curriculum vitae

Personal data:

Davide Bacco .

University of Florence, Via Sansone 1, Sesto Fiorentino (IT)

H-index:**27**, i-10 index: **35**, Total citations: **3323** (Google Scholar)

Current position

Sept 2023-present Associate Professor at Department of Physics and Astronomy, University of Florence
Oct 2021-present: co-founder QTI s.r.l., Firenze

Research and professional experience

2022- Aug 2023 Assistant Professor at Department of Physics and Astronomy, University of Florence
2019- July 2022 Assistant Professor at Technical University of Denmark (DTU) – Fotonik
May-Aug 2020 Guest researcher at INO, National Institute of Optics, Florence
2017-2018 MSCA H.C. Ørsted Postdoc, DTU - Fotonik
Sep.-Dec. 2018 Guest researcher at LENS, European Lab for Non-linear spectroscopy, Florence
Jan.-Feb. 2017 Guest researcher at University of Bristol, HH Wills Physics Laboratory, Bristol.
2015-2016: Postdoc in Center of Excellence SPOC, DTU Fotonik, DK.
2015-2015: Postdoc at CNR-IFN (Photonic and nanotechnology Institute), Padova, Italy.
2011-2014: PhD Student in Science, Technology and Space Measurements, CISAS, UniPD
Oct-2011: Junior Research Fellow at Department of Information Engineering, UniPD

Education

20.03.2015: PhD in Science Technology and Spatial Measures, University of Padova, -IT-
Supervisor: Prof. *Giampiero Naletto* Title: *Quantum communications between Earth and Space*
11.07.2011: M.Sc. in Telecommunication Engineering, University of Padova, -IT-
Supervisor: Prof. *Paolo Villoresi* and Giuseppe Vallone Title: *Free-space quantum communications for exchanging cryptographic keys*
25.11.2008: B.Sc. in Information Engineering, University of Padova, -IT-
Supervisor: Dr. *Tommaso Erseghe*, Title: *Analysis and elaboration of DVB streams*

Awards and Honors

2022: European Research Council ERC-StG (QOMUNE) 1.5 M€
2021: BIRD (Best Italian Researcher in Denmark)
2020: Best Cover of Advanced Photonics 2019" (link)
2019: DOPS (Danish Optical Society) Best Young Researcher price.
2017: H.C. Ørsted Postdoc Marie Curie Sklodowska-Curie Actions COFUND DTU
2011: PhD scholarship ASI (Italian Space Agency)

External collaborations

Prof. Fabio Sciarrino (Sapienza University, Rome); Dr. Marcus Huber (IQOQI, Wien), Assoc. Prof. Mehul Malik (HWU Edinburgh); Prof. Jietai Jing (East China Normal University), Prof. Alberto Tosi (University of Milano); Prof. Ulrik Lund Andersen (DTU Physics); Dr. Alessandro Zavatta (LENS, University of Florence, Italy), Prof. Mark Thompson and Anthony Laing (University of Bristol); Prof. Anders Sørensen (University of Copenhagen)

Grants

2023-2028 **PI ERC StG** Grant QOMUNE: Quantum Optical Multidimensional Network Total Grant 1.5 M€
2023-2025 WP Leader and CO-PI EQUO: European quantum ecosystem , DEP DIGITAL-2021-QCI-01 Total Grant 5 M€
2022-2025 Principal Investigator @ QTI s.r.l., QuSub Quantum Submarine Communication Total Grant 3.7 M€
2022-2026 Co-PI DFF-RP2, QUAntum photonic Reservoir COMputing (QUARCOM) Total Grant 0.8 M€
2022-2025 Co-PI Prometheus, FET EU Horizon Europe call, Total grant 5M€
2022-2025 Co-PI SEQUOIA, Sensing using quantum oct with AI, Total grant 6.4M€

2020-2024: **Principal Investigator @ DTU** of IFD Field-ready single-photon quantum technology (FIRE-Q) Total grant 27 MDKK, DTU budget 3.5 MDKK
2021-2026: **Co-Investigator** of **Danish National Research Foundation, Center of Excellence SPOC II** (41,5MDKK)**,**
2019-2022: **Co-Investigator** of **OpenQKD-Quantum Key Distribution testbed H2020** (PI AIT Austria, 38 partners) Total Budget: 15M€ (130K€ in DK)
2018-2021: **Co-Investigator and Work Package leader of SQUARE-European project H2020** (PI Prof. Karsten Rottwitt) Total Budget: 1.934.307 €;
2019: **Principal Investigator** of **EUopSTART grant**: Advanced light-matter interface for quantum information (10 000€);
2018-2019: **Co-Investigator of SCQC-** Silicon-based classical and quantum communications **International Network Programme** (PI Prof. Michael Galili) Total Budget: 40 000 €;
2018: **Principal Investigator** of **EUopSTART grant**: Silicon photonics for quantum communications (10 000€);
2016: **Principal Investigator** Marie Skłodowska-Curie Actions Cofund action (total~200 000€)

Management experience

2010-now Technical responsible of more than 20 people
2022: Program Chair International Conference on Integrated quantum photonics (ICIQP2021), October DTU, Denmark
2020-2024: Principal Investigator at DTU and work package leader of FIRE-Q, IFD project
2018-2021: Co-Investigator and work package leader of SQUARE, EU project
2017-2020: Co-supervisor of two PhD students and supervisor of 3 visiting PhD students

Experimental Campaigns- grant application required to access the facilities

2014-2015: Elettra Synchrotron Trieste, Italy grant numbers: (N: 20140218), (N: 20145149), (N: 20145213), (N: 20145219)
2013-2014: Terrestrial classical and quantum communications at the Thales Alenia Space (TASI), IT
2012-2014: Space quantum communications at the Matera Laser Ranging Observatory, Matera, Italy
June-2012: Long range quantum communications at the European Space Agency Optical Ground Station

Scientific focus area

My research topics focus on quantum optical communications, secure communications, quantum information processing, and silicon photonics for optical communications both for free-space and fiber-based communications.

Supervision of students and teaching (S: supervisor, Co-S: Co-supervisor)

2023: Full course General Physics 6 ECTS, Laboratory of Physics II 3 ECTS
2021- 2019: Master Course *Quantum Photonic Communication*, 5 ECTS, 13 weeks course
2016-2023: **8** Special courses; **2** PhD courses; **5** M.Sc. Thesis, **2** B.Sc. Thesis, S **6** PhD students; Co-S **6** visiting PhD

Administrative and collective duties

Journals Reviewer: Nature Photonics, Physical Review X, Nature Communications, Science Advances, Quantum Science and Technology, Communication Physics, Physical Review Applied, Scientific Reports, Physical Review A., Journal of Lightwave Technology, Journal of Selected Topics in Quantum Electronics, Photonics, Optics Letter, Optics Express, Applied Physics Letter, Physica Scripta, Cryptography,Entropy, IEEE Sensors, Applied Sciences.
Funding bodies expert: Fet-Open H2020, Research Foundation Flanders (Opening new Horizons), OSA Travel grant, H2020 Fet Open Action, SIRTEQ (Science et Ingénierie en Région Ile-de-France pour les Technologies Quantiques). Natural Sciences and Engineering Research Council of Canada (NSERC).
Associate Editor: Nature Scientific Reports, IEEE Photonics Journal, Guest Editor Applied Sciences
Technical Program Committee Member: QCrypt 2020, 2018, SPW 2019, ICIQP2022

Conferences and school

2 PhD school 2013; **60** conferences from 2013 (**41** Talks and **19** posters)

Invited talks and seminars

(2016) Asia Communications and Photonics Conference, CN; (2017) Crossing Seminar- Technical University of Darmstadt, DE; (2017) Politecnico di Milano, IT; (2017) CQT, SPG (2018) LENS- European Laboratory for Non-Linear Spectroscopy, IT; (2019) ICTON Conference FR; (2019) IQC Waterloo Seminar, CA; (2019) SPIE-COS Photonic Asia, CN ;(2020) IEEE Photonic Society STC, MX; (2020) Bristol QIS, UK; (2021) CLEO U[redacted]OFC USA, (2022) ECOC CH, (2022) Underwater Communications and Networking, IT, (2023) Advanced Ph[redacted]

PERSONAL INFORMATION

Alessandro Zavatta

Largo E. Fermi 6 50125 Firenze (Italy)

[redacted]

CURRENT POSITION

QTI – Quantum Telecommunications Italy SRL
President and Chief Operating Officer

and

Consiglio Nazionale delle Ricerche – Istituto Nazionale di Ottica (CNR-INO)
Senior Research Scientist

RESEARCHER UNIQUE IDENTIFIER

ORCID www.orcid.org/0000-0002-1359-7956

WORK EXPERIENCE

Since (2023) **Consiglio Nazionale delle Ricerche – Istituto Nazionale di Ottica (CNR-INO)**
Head of the Trieste Unit

Since (2021) **QTI – Quantum Telecommunications Italy SRL**
Co-founder, President and Chief Operating Officer

Since (2020) **Consiglio Nazionale delle Ricerche – Istituto Nazionale di Ottica (CNR-INO)**
Senior Research scientist

Head of the Quantum Communications laboratory at CNR-INO. Research activities: Fundamental Quantum Optics, quantum technologies, ultrafast optics. Quantum Communications and Quantum Key Distribution.

Since (2020) **Full-Professor Habilitation for Experimental and Theoretical Matter Physics**
SSD 02/B1 and SSD 02/B2
https://abilitazione.miur.it

Since (2020) **QTI – Quantum Telecommunications Italy**
Co-founder and President
CNR spin-off Company

Since (2017) **Consiglio Nazionale delle Ricerche – Istituto Nazionale di Ottica (CNR-INO)**
Head of "QCI - Quantum Communications and Quantum Information Lab" in Firenze and Trieste.

From (2008) – To (2020) **Consiglio Nazionale delle Ricerche – Istituto Nazionale di Ottica (CNR-INO)**
Research Scientist

From (2015) – To (2021) **CNRS/Université Nice Sophia Antipolis, Nice, France**
Short-term Researcher/ Professor

Quantum information protocols with continuous-variables and integrated optics.

EDUCATION AND TRAINING

From (2000) – To (2003) **Ph.D. *Quantum engineering in non-linear optics***
Università di Firenze (Italy)

From (1992) – To (1999) **MS.C. *in Physics***
Università di Bologna (Italy)

From (1997) – To (1998) **Diploma in Physics (ERASMUS fellowship)**
University of Kent (UK)

TEACHING ACTIVITY

From (2017) – To (2021) **Computer Science** 3CFU
Department of Physics and Astronomy, Università di Firenze (Italy)

Since (2010) **Quantum Optics** 1CFU
Department of Physics and Astronomy, Università di Firenze (Italy)

Since (2008) **Student supervision**
Postdoc (2), PhD (8), Master degree (6) and Bachelor degree (3)

PUBLICATIONS

Since (2000) **Scientific production**

Co-author of more than 100 papers published in peer-reviewed top international scientific journals (among which, 2 Science, 2 Nature Photonics, and 15 Phys. Rev. Lett. papers), and more than 20 (10) conference contributions as (invited) speaker. From ISI Web of Science his publications are recognized with more than 3200 citations with an H-factor of 29 (Web of Science). He is first author of a Web of Science Highly Cited Paper with more than 600 citations.

last 5 years **Peer-reviewed publications**

1. M. Zahidy et al “Practical high-dimensional quantum key distribution protocol over deployed multicore fiber”, Nature Comm. 15, 1651 (2024).
2. D. Ribezzo, R. Salazar, F. Segur, J. Czartowski, G. Lemmi, A. Petitjean, N. Farrugia, A. Xuereb, D. Bacco, and A. Zavatta, “Testing noise resilience of quantum communications with optimal resource allocation” Adv. Quantum Technol. 202300162 (2024).
3. S. Francesconi et al “Scalable Implementation of Temporal and Phase Encoding QKD with Phase-Randomized States” Adv. Quantum Technol. 202300224 (2024).
4. É. Gouzien, L. Labonté, J. Etesse, A. Zavatta, S. Tanzilli, V. D'Auria, and G. Patera, “Hidden and detectable squeezing from microresonators”, Phys. Rev. Research 5, 023178 (2023).
5. G. Murtaza, M. Colautti, M. Hilke, P. Lombardi, F.S. Cataliotti, D. Bacco, and C.Toninelli, ”Efficient room-temperature molecular single-photon sources for quantum key distribution”, Optics Expr. 31, 9437-9447 (2023).
6. D. Ribezzo, M. Zahidy, I. Vagniluca, N. Biagi, S. Francesconi, T. Occhipinti, L. K. Oxenløwe, M. Loncaric, I. Cvitic, M. Stipcevic, Z. Pusavec, R. Kaltenbaek, A. Ramsak, F. Cesa, G. Giorgetti, F. Scazza, A. Bassi, P. De Natale, F. S. Cataliotti, M. Inguscio, D. Bacco, and A. Zavatta, “Deploying an inter-European quantum network”, Adv. Quantum Technol. 2200061 (2022).

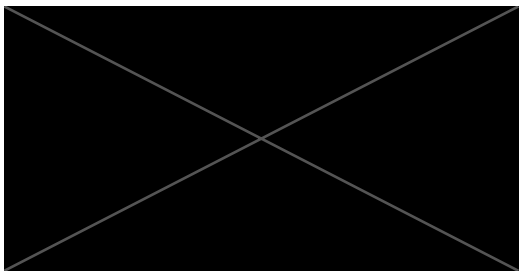
7. M. F. Melalkia, T. Gabbrielli, A. Petitjean, L. Brunel, A. Zavatta, S. Tanzilli, J. Etesse, V. D'Auria, “Plug-&-play generation of non-Gaussian states of light at a telecom wavelength”, Opt. Expr. 30, 45196 (2022).
8. T. Gabbrielli, N. Bruno, N. Corrias, S. Borri, L. Consolino, M. Bertrand, M. Shahmohammadi, M. Franckie, M. Beck, J. Faist, A. Zavatta, F. Cappelli, P. De Natale, “Intensity correlations in quantum cascade laser harmonic frequency combs”, Adv. Photonics Res. 2200162 (2022).
9. D. Bacco, N. Biagi, I. Vagniluca, T. Hayashi, A. Mecozzi, C. Antonelli, Leif K. Oxenlowe, A. Zavatta, “Characterization and stability measurement of deployed multicore fibers for quantum applications” Photonics Research 9, 1992 (2021).
10. N. Biagi, S. Francesconi, A. Zavatta, M. Bellini, “Coherent Superpositions of Photon Creation Operations and Their Application to Multimode States of Light”, Entropy 23 (2021).
11. V. Gebhart, et al. “Identifying nonclassicality from experimental data using artificial neural networks”, Physical Review Research 3, 023229 (2021).
12. D. Bacco et al. “Toward Fully-Fledged Quantum and Classical Communication Over Deployed Fiber with Up-Conversion Module” Advanced Quantum Technologies 4, 2000156 (2021).
13. T. Gabbrielli et al. “Mid-infrared homodyne balanced detector for quantum light characterization”, Optics Express 29 14536 (2021).
14. B. Da Lio et al. “Path-encoded high-dimensional quantum communication over a 2-km multicore fiber”, NPJ Quantum Information 7, 63 (2021).
15. K. Wang, et al. “Round-Robin Differential Phase-Time-Shifting Protocol for Quantum Key Distribution: Theory and Experiment”, Phys. Rev. Applied 15, 044017 (2021).
16. N. Biagi, L. S. Costanzo, M. Bellini, and A. Zavatta, “Generating Discorrelated States for Quantum Information Protocols by Coherent Multimode Photon Addition” Advanced Quantum Technologies 4, 2000141 (2021).
17. N. Biagi, M. Bohmann, E. Agudelo, M. Bellini, and A. Zavatta, “Experimental Certification of Nonclassicality via Phase-Space Inequalities”, Phys. Rev. Lett. 126, 023605 (2021).
18. F. Mondain et al. “Photorefractive effect in LiNbO3-based integrated-optical circuits for continuous variable experiments”, Opt. Express 28, 23176 (2020).
19. Ilaria Vagniluca, Beatrice Da Lio, Davide Rusca, et al. “Efficient time-bin encoding for practical high-dimensional quantum key distribution”, Phys. Rev. Applied 14, 014051 (2020).
20. Da Lio et al. “Stable Transmission of High-Dimensional Quantum States Over a 2-km Multicore Fiber”, IEEE Journal of Selected Topics in Quantum Electronics 26, 2960937 (2020).
21. S. Mukamel et al, “Roadmap on quantum light spectroscopy”, Journal of Physics B – Atomic Molecular And Optical Physics 53, 072002 (2020).
22. N. Biagi, L. S. Costanzo, A. S. Coelho, M. Bellini, and A. Zavatta “Entangling macroscopic light states by delocalized photon addition”, Phys. Rev. Lett. 124, 033604 (2020).

ACTIVE PROJECTS

Since (2023) **QUID “Quantum Deployment Italy”** — CNR Coordinator
EU – EuroQCI National Deployment

Since (2023) **“Network for ultra-secure quantum communications (RECUS)”** — PI
Partenariato esteso SERICS PNRR – NextGenerationEU

Since (2021) **Quantum Communications fOr NexT gEneration iNterneT (QuONTENT)”** — PI
Progetto Ricerca@CNR



Domenico Ribezzo

Curriculm Vitae

Birth [redacted]

Citizenship **Italian.**

Status **PostDoc**, *Università dell'Aquila.*

Education

2023-present **Research Associate**, *University of L'Aquila*

2020-2023 **PhD in Quantum Technologies**, *CNR INO Florence, University of Naples Federico II.*, "Interconnecting Nations through Quantum Networks for Enhanced Quantum Key Distribution", cum laude

2016-2020 **Master's degree in physics**, *University of Pisa*, 105/110.

2019-2020 **Master's thesis and research activity**, *IQOQI Vienna*, "Nonlocal compensation of chromatic dispersion for QKD."

2016-2017 **Erasmus exchange**, *Georg-August-Universität Göttingen.*

2011–2016 **Bachelor's degree in physics**, *University of Pisa*

2006–2011 **High School Diploma**, *Liceo Classico Lilla*, Francavilla F.

Computer experience

Programming Experiences with C, C++, python (numpy, scipy, matplotlib), matlab, gnuplot, LaTeX, GNU/Linux, arduino, raspberry pi.

Languages

Italian **First language.**

English **Good**, Level C1.

French **Basic**, Level A1.

German **Basic**, Level A1.1.

Firenze, 02/08/2024 [redacted]