

**Job Information: Specially Appointed Assistant Professor**

**Employer: Yokohama National University (YNU)**

**Closing date: November 15, 2021**

1. Job Title: Specially Appointed Assistant Professor

2. Affiliation / charge: Hideo Kosaka Laboratory, Faculty of Engineering Physical Engineering Unit / Institute of Advanced Sciences Quantum Information Research Center

3. The number of positions:1

4. Starting date: January 1, 2022 or later (negotiable)

5. Terms of employment: It may be renewed every year depending on work performance. The maximum limit is March 31, 2025.

Be notified at least 30 days before the end of the term regarding whether/not the employment contract has been renewed. 6 month trial period is required.

6. Compensation:

Full-time (with term). Follow our university rules.

Annual salary system according to the university regulation of Yokohama National University.

Due to the application of professional discretionary work system, it is considered to have worked 38 hours and 45 minutes per week.

7. Research field / specialty area:

Research field: Comprehensive science and engineering (Nano/micro science, applied physics),

Mathematical science (physics)

Specialty area: Quantum information physics (experiment). Optical and quantum technology areas related to quantum information such as quantum communication, quantum computation, and quantum measurement.

8. Duties / Research description:

Recruitment center:

Quantum Information Research Center, Institute of Advanced Sciences

Hideo Kosaka - Professor of Faculty of Engineering Physical Engineering Unit / Director of Quantum Information Research Center

Research description:

[About affiliation] Although your affiliation will be Faculty of Engineering, you will be also required to research at Institute of Advanced Sciences - Quantum Information Research Center, which was established in October 2020 as a global research center to promote practical research in the field.

Hideo Kosaka: Director at Quantum Information Research Center, Institute of Advanced Sciences (Professor at Faculty of Engineering / Institute of Advanced Sciences)

[Research description] Engage in research work on "quantum repeater technology" (Research Director: Professor Hideo Kosaka) in "Research and Development for Construction of Global Quantum Cryptography Network" commissioned by Ministry of Internal Affairs and Communications.

[https://www.soumu.go.jp/menu\\_news/s-news/02tsushin03\\_04000399.html](https://www.soumu.go.jp/menu_news/s-news/02tsushin03_04000399.html)

You will be involved in the research and development on quantum cryptography technology in order to further extend the distance of quantum cryptography communication and to realize the relay of cryptographic keys that are more secure than trusted nodes. You will be especially involved in the development of quantum memory technology that can keep quantum states for a certain period of time and its peripheral technologies, as well as the development of fundamental technologies for novel methods such as all-photon quantum repeater and wavelength-division quantum repeater. The color center in diamond is used as a quantum memory.

Other duties:

Management and operation of Quantum Information Research Center and related projects

#### 9. Selection Method

After the first selection by document screening, the second selection (if necessary) will be conducted by presentation and interview.

Web interviews are also available upon request.

If there is no suitable candidate, the final candidate may not be selected (transportation expenses, accommodation expenses, etc. for the interview will be applicant's burden).

Selection will be conducted at any time, and recruitment will end as soon as a candidate is decided.

#### 10. Qualifications / requirements

1. Those who have a doctoral degree or who are expected to obtain it before employment
2. Experience in experimental research in physics or engineering
3. Those who are motivated to develop the quantum information processing field
4. Those who are passionate about research and education
5. Those who are active in international joint research
6. Proficiency in English for oral presentations, treatise writing, and international joint research.

#### 11. Documents to be submitted

1 copy each, all paper size is A4.

If you apply by E-mail, please attach it as one PDF file.

- (1) Resume (attach a photo and specify your email address)
- (2) List of research achievements (distinguish between peer-reviewed treatises, international conference papers, commentary / books, awards, etc.)
- (3) Reprint or copy of the original articles (up to 5 major articles)
- (4) Acquisition status of various competitive research funds (if any) (distinguish between representatives and divisions)
- (5) Outline of research progress so far and prospects for research after taking office (about 1 to 2 sheets of A4 paper)

#### 12. Application closing date

November 15, 2021 (Must arrive)

\* Deadline will be closed as soon as candidates for employment are decided, since selection will be conducted at any time.

#### 13. Mail to

Hideo Kosaka, Professor, Faculty of Engineering Physical Engineering Unit, Yokohama National University  
79-5 Tokiwadai, Hodogaya-ku, Yokohama 240-8501, Japan

14. Employer (recruiter)

President of Yokohama National University

15. Contact information

Hideo Kosaka, Faculty of Engineering Physical Engineering Unit

79-5 Tokiwadai, Hodogaya-ku, Yokohama 240-8501, Yokohama National University

Phone / Fax: 045-339-4196

Email address: kosaka-hideo-yp4196ynu.ac.jp

<please replace 4196 with @ in the email address.>

Laboratory HP: <http://kosaka-lab.ynu.ac.jp>

Quantum Information Research Center (QIC) HP: <https://qic.ynu.ac.jp>

Institute for Advanced Sciences (IAS) HP: <https://ias.ynu.ac.jp>

\*All documents provided will only be used for application purposes. And they will be disposed of safely based on the rules of the university after the selection is completed.

\*Submitted documents will not be returned.

\*Our university welcomes the active application of women and those who have experience in education and research overseas, based on the spirit of the Yokohama National University Declaration of Gender Equality and from the perspective of aiming for diversity of human resources.