

Guidelines for Application of
ILE Collaborative Research for FY2027
(1 April 2027 – 31 March 2028)

October 30, 2026

Institute of Laser Engineering,
The University of Osaka

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1. Outline of Call for Applications

The Institute of Laser Engineering (ILE), The University of Osaka, was approved as a Joint Usage/Research Center for advanced research in laser energy science in FY2010.

ILE is equipped with facilities available for research in laser science as a broad interdisciplinary academic field, starting with high energy density science using GEKKO XII, the only large-scale laser facility of its kind in Japan, and the LFEX laser with petawatt output. We welcome proposals for a wide variety of challenging research subjects full of new ideas, including not only the use of these facilities but also the promotion of collaboration between researchers. We also look forward to exploratory research subjects that are expected to lead to new developments in the future.

As a Joint Usage/Research Center open to researchers worldwide, ILE has accepted collaborative research led by international researchers. In response to requests from Japan and abroad and to further promote internationalization, international researchers have participated as reviewers in the screening of research subjects since FY2018. We plan to continue developing a system befitting an international research center, and we ask for your understanding and cooperation.

When applying, please select the relevant research field and a research method, such as use of the large laser facility (GEKKO XII and LFEX), use of high-repetition-rate laser facility, use of medium-sized facilities, individual collaborative research, or holding a workshop. Please apply after thoroughly discussing the research content, research method, implementation period, and other details with a researcher at ILE.

2. Research Fields

The Collaborative Research Steering Committee of this Joint Usage/Research Center (the Center) considers that, from a long-term perspective on the role of the Center, promoting collaborative research through cooperation with research groups in Japan and abroad is essential for expanding the related research communities and maintaining international competitiveness. Based on this view, 11 research fields have been established for the development of high energy density science research using high-power lasers. The Representative of each research field is selected by the Collaborative Research Technical Committee established under the Collaborative Research Steering Committee.

When applying for collaborative research, please specify the relevant research field.

List of Research Fields

(For details of each research field, including the Representatives and Contact scientists, please refer to Section 8. Details of Research Fields.)

-
- | | |
|--------------------------------|--|
| 1. High Energy Density Science | - Laser Astrophysics
- High Pressure / Laser Earth & Planetary Science
- High Magnetic Field Science
- Quantum Beam Science
- Plasma Science |
| 2. Laser Science and Optics | - Terahertz Science
- Power Laser Science
- Laser & Optical Material |
| 3. Initiative | - Physical Informatics
- Science-Humanities Integration |
| 4. General Subjects | |
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Before applying to a research field, please consult thoroughly with the Contact scientist of the field and your Liaison scientist. If it is determined during the selection process that participation in a specific research field is preferable, the subject may be adopted in that research field.

In addition, we invite applications for the following collaborative research as other Joint Usage/Research programs. Please note that the application procedure differs from that for Research Fields 1-4 above.

Other Collaborative Research

- Paid Usage Collaborative Research

The large laser facility and the high-repetition-rate laser facilities of ILE are available for a fee. In this case, the appropriateness of the subject, including whether the research content conflicts with defense technology or security export control, will be judged by the Industry-Academia-Government Collaboration Issues Committee. For details, please contact the Contact scientist.

Contact scientist: Keisuke Shigemori

- Simultaneous Use of High-Power Nanosecond Laser HERMES and X-ray Free Electron Laser SACLA

For applications for research that uses both the High-Power Nanosecond Laser HERMES at ILE and the

X-ray Free Electron Laser SACLA at RIKEN Harima Campus, please see the SACLA website (<https://sacra.xfel.jp/?lang=en>).

* We also accept collaborative research that requires a contract, for researchers affiliated with companies, national research institutes, etc. Please contact us for details.

3. Research Methods

When applying for collaborative research, please specify the relevant research method. If your proposal is adopted, collaborative research expenses and/or machine time will be allocated according to the screening results.

List of Research Methods

(For details of each research method, including the Contact scientists, please refer to Section 9. Details of Research Methods.)

A1	Collaborative Research using the Large Laser Facility - GEKKO XII and LFEX
A2	Collaborative Research using the High-Repetition-Rate Laser Facility
B1	Collaborative Research using Medium Size Lasers and Computer Code
B2	Individual Collaborative Research
C	Workshop related to Laser Science and High Energy Density Physics

Regarding Research Methods A1 and A2:

- When applying, you can choose to apply as an exploratory research subject and/or with a Student PI. For details, please refer to “A1. Collaborative Research using the Large Laser Facility - GEKKO XII and LFEX” in Section 9. Details of Research Methods.

- For Research Method A1, the experimental schedule differs from the regular schedule due to refurbishment of the large laser facility. Please confirm the details with your Liaison scientist at ILE.

- Research Method A2 has been newly established in this call. We invite collaborative research using the high-repetition-rate laser facility of ILE. For an overview of the facilities, please see the following web page:

https://www.ile.osaka-u.ac.jp/eng/facilities/power_laser_laboratory/index.html

Before applying for Research Method A2, please be sure to contact in advance the Contact scientist listed in “A2. Collaborative Research using the High-Repetition-Rate Laser Facility” in Section 9. Details of Research Methods.

4. Schedule of Application

October 30, 2026	Start of accepting applications	Applicants enter the application information and upload the application form through the Collaborative Research Application System (https://collabo.ile.osaka-u.ac.jp/)
November 30, 2026	Application deadline	
December 7, 2026	Deadline for input by Liaison scientists	Liaison scientists enter the application information through the Local Collaborative Research Application System (https://collabo-local.ile.osaka-u.ac.jp/)
Early March 2027	Notification of screening results	Screening results are posted on the Collaborative Research Application System (viewable by the Principal Investigator, the Liaison scientist, and the applicant)

Applications cannot be replaced or accepted after the deadline. Please submit your application with ample time to spare.

5. Application Procedure

Please submit your application through the Collaborative Research Application System (<https://collabo.ile.osaka-u.ac.jp/signin>) by the deadline. Please note that applications by email will not be accepted. Enter the application information in the Collaborative Research Application System and upload the application documents. For how to access the application page and the items to be entered, please refer to Section 6. **Application through ILE Collaborative Research Application System.**

A Liaison scientist must be designated for each application. Please designate one researcher at the Institute of Laser Engineering, The University of Osaka, as your Liaison scientist, and apply after thoroughly discussing the research content, research method, implementation period, and other details with the Liaison scientist. Liaison scientists must enter the application information through the Local Collaborative Research Application System (<https://collabo-local.ile.osaka-u.ac.jp/>) within the designated period.

Before applying for Research Method A2, please be sure to contact in advance the Contact scientist listed in “A2. Collaborative Research using the High-Repetition-Rate Laser Facilities” in Section 9. **Details of Research Methods.**

Necessary documents for the application

Research Methods A1 and A2: Application form (pdf file)

Research Methods B1, B2, and C: Application form (pdf file) and Collaborator list (Excel file)

Application format

Please download the application form and the Collaborator list format from the following web page:

<https://www.ile.osaka-u.ac.jp/eng/collaboration/application/index.html#download>

The application form differs for each research method. Please use the latest form for the research method you are applying for. Please also complete the Pledge Regarding Conflict of Interests in Joint Usage and Collaborative Research on the final page of the application form. A scanned signature or a pasted signature image is acceptable. To prevent garbled characters and image distortion during transmission, please convert the application form to PDF (maximum 20 MB) before submitting. For Research Methods B1, B2, and C, please submit the Collaborator list in Excel format.

6. Application through ILE Collaborative Research Application System

Applications for collaborative research are made through the Collaborative Research Application System (<https://collabo.ile.osaka-u.ac.jp/>). Anyone can submit an application, but please note that information on the Principal Investigator and the Liaison scientist is required. For the required information, see **Enter application information** below.

Login to the Collaborative Research Application System

Access <https://collabo.ile.osaka-u.ac.jp/>, enter your email address in the box labeled “Email address,” and click the SIGN IN button. A one-time password will be sent to the email address you entered. Log in with that password and the email address.

Move to the proposal application page

Click “Proposal Application” on the top page to move to the proposal application page.

Enter application information

The proposal application page has the following web input items. Items marked with * are required. Enter these items, upload the application documents at the end, and click “Submit” to complete the application.

- Research Title
English*, Japanese
- Principal Investigator
E-mail address*, ILE-ID, Name (in alphabet)*, Name in Japanese, Institution/Department*, Position*, Post address*, TEL
- Liaison Scientist
Select from the list*
- Research Field
Select from the list*
- Research Method
Select from the list*
- Has the principal investigator applied or recommended someone to the Osaka University Kondo Prize?
Select from the list whether the PI has applied or recommended someone*
- Does any of the members of this collaborative research belong to an institution outside Japan?
Yes / No*
- Necessary funds (JPY) (Only for Research Methods B1, B2, and C)
Enter the amount*
- Facility (Only for Research Method B1)
Select one facility to be used for Research Method B1*

(If you select Research Method A1, please also enter the following 8 items.)

- Is your proposal document written in English? If so, the review will be done by international reviewers.
Yes / No*
- Do you apply this proposal as an exploratory research?
Yes / No*
- Does this proposal have a student as the Principal Investigator?
Yes / No*
- Please select the target room and laser you use in this research.
Select from the following.*

- Target room 1, LFEX only
 - Target room 1, GXII only (Spherical beam arrangement)
 - Target room 1, LFEX + GXII
 - Target room 2, GXII only (Monodirectional beam arrangement)
- For continued research applications, please select which year this proposal will correspond to.
Not a continued research / 2nd year / 3rd year or more*
 - Regarding the representative peer-reviewed papers listed under “Publications, Invited Talks, and Intellectual Properties” in your proposal document, please input the number of papers which present results obtained using the large laser facility at ILE.
Enter the number*
 - Please input the number of Fundings/Research Grants listed under “Funding and Research Grant” in your proposal document.
Enter the number*
 - Critical scheduling issues for your experiment
If there are any critical issues to be considered in scheduling, please enter them here.

(If you select Research Method A2, please also enter the following 5 items.)

- Do you apply this proposal as an exploratory research?
Yes / No*
- Does this proposal have a student as the Principal Investigator?
Yes / No*
- Please select the laser you use in this research.
Select from the following.*
 - SENJU only
 - Femtosecond laser only
- Please input the number of Fundings/Research Grants listed under “Funding and Research Grant” in your proposal document.
Enter the number*
- Critical scheduling issues for your experiment
If there are any critical issues to be considered in scheduling, please enter them here.

7. Screening Process

Each submitted proposal is evaluated and ranked by multiple reviewers. Proposals written in English are reviewed with the participation of international reviewers. Based on the reviewers' evaluation reports, the Collaborative Research Technical Committee deliberates on adoption. The screening also takes into account how well the proposal matches, and is positioned within, the research field under which it was submitted. For Research Methods A1 and A2, the number of adopted subjects is limited to ensure sufficient machine time per research subject.

Each application is screened by the Collaborative Research Technical Committee established under the Collaborative Research Steering Committee, and adoption is then decided after deliberation by the Collaborative Research Steering Committee.

Flow of application and screening

Research Methods A1 and A2

- (1) Application through the Collaborative Research Application System (applicant)
- (2) Input of information through the Collaborative Research Application System (Liaison scientist)
- (3) First screening: screening based on experimental feasibility, research achievements, etc. *1
- (4) Second screening: document review
- (5) Notification of screening results

*1 For exploratory research subjects, the first screening is conducted without emphasis on research achievements. For exploratory research subjects, please refer to “A1. Collaborative Research using the Large Laser Facility - GEKKO XII and LFEX” in Section 9. **Details of Research Methods.**
For Research Method A2, an interview may be conducted in the first screening.

Research Methods B1, B2, and C

- (1) Application through the Collaborative Research Application System (applicant)
- (2) Input of information through the Collaborative Research Application System (Liaison scientist)
- (3) Second screening: document review
- (4) Notification of screening results

8. Details of Research Fields

1. High Energy Density Science

Laser Astrophysics (Representative: Masahiro Hoshino, Contact scientist: Takayoshi Sano)

Using large-scale, high-energy, high-intensity lasers, we aim to create in the laboratory high-temperature, high-energy-density, ultra-high-velocity flowing plasmas of the kind observed only in space, and thereby deepen the understanding of plasma physics and astrophysics. Many astrophysical phenomena, such as collisionless shocks, magnetic reconnection, plasma jets, and various instabilities, are associated with instantaneous energy release, and they can be simulated in the laboratory with pulsed lasers. Relativistic astrophysics using high-intensity lasers, such as electron-positron plasma generation and particle acceleration, is also an important topic. In addition to large-scale laser experiments, we also conduct theoretical and simulation studies related to these topics.

- (a) Laser Plasma Astrophysics: Experiment
- (b) Laser Plasma Astrophysics: Theory/Simulation

High Pressure / Laser Earth & Planetary Science (Representative: Toshimori Sekine, Contact scientist: Keisuke Shigemori)

Experiments using high-intensity lasers can achieve physical conditions far exceeding those of conventional static high-temperature, high-pressure experiments and shock experiments using gas guns. As applications of this technique, research is expected on the physical properties of materials in planetary interiors, planetary formation processes, and impact phenomena on planetary surfaces. Studies have already been conducted on high-density material synthesis, high-velocity impact, impact fragmentation, impact vapor cloud generation, equations of state, properties of melts, synthesis of prebiotic materials, gravitational instability, and other topics. Through these studies, new measurement and recovery techniques have also been developed. Including the further development of fundamental technologies, we aim to clarify the formation processes, internal structures, and evolution of bodies ranging from the Earth and planets to super-Earths.

- (a) In-situ Measurements of Shock-compressed Materials
- (b) High-speed Impact and Recovery of the Sample

High Magnetic Field Science (Representative: Joao Santos, Contact scientist: Shinsuke Fujioka)

New developments in plasma science are expected from combining strong magnetic fields with high-energy-density plasmas. The goal of this field is to develop an experimental platform providing strong magnetic fields of up to 100 kilotesla and, using this platform, to build domestic and international research networks on strong-field plasma science. We welcome research that forms the pillars of strong-field plasma science, such as the development of new methods for generating strong magnetic fields, control of laser-accelerated quantum beams by strong magnetic fields, the physics of high-energy-density plasmas under strong magnetic fields, and the use of strong magnetic fields in laser fusion and magnetic confinement fusion plasma physics. We also welcome contributions to fields beyond plasma science, such as astronomy and rocket propulsion; for example, contributions to rocket propulsion through the acceleration of objects by strong magnetic fields and to X-ray

astronomy through precise measurement of Zeeman splitting under strong magnetic fields.

Quantum Beam Science (Representative: Takehito Hayakawa, Contact scientist: Yasunobu Arikawa)

We conduct collaborative research on high-energy electrons, positrons, ions, and neutrons, as well as extreme ultraviolet (EUV) light, X-rays, and gamma rays emitted from laser-produced plasmas, aiming to elucidate their generation mechanisms, discover new physical mechanisms, demonstrate applications, and improve their performance (higher efficiency, monochromaticity, higher energy, stabilization, emittance control, etc.). To this end, small groups on radiation emission and particle acceleration are formed to carry out well-planned research activities using the facilities of ILE and other research institutions.

- (a) Laser-driven Particle Acceleration and Neutron Generation and Applications
- (b) Laser-driven x- or gamma-rays and Applications
- (c) Laser-driven Nuclear Physics and Application

Plasma Science (Representative: Tomoyuki Johzaki, Contact scientist: Yasuhiko Sentoku)

As general plasma science developed with power lasers, we invite collaborative research, whether experimental or theoretical/simulation, across a wide range of areas from basic science to laser fusion and industrial applications, including research on laser-produced plasmas and plasma research using lasers.

2. Laser Science and Optics

Terahertz Science (Contact scientist: Makoto Nakajima)

We develop laser-based terahertz wave generation devices and systems and conduct research on their applications. Measurements such as terahertz time-domain spectroscopy and terahertz imaging are performed on semiconductors, superconductors, magnetic materials, biological samples, nonlinear optical crystals, and other materials. We also promote the development of superconducting photonics and strongly correlated electron photonics using these devices, and conduct research on applying metamaterials, a new class of artificial structures, to terahertz technology.

- (a) THz Technology
- (b) Superconducting Photonics and Strongly Correlated Electron Photonics
- (c) Metamaterials

Power Laser Science (Contact scientist: Akifumi Yogo)

We develop fundamental technologies for high-energy lasers and next-generation high-average-power lasers.

- (a) Basic technical elements and technology for the next high power laser
- (b) High-power laser systems
- (c) Phase, wavefront and spectral control

Laser & Optical Material (Contact scientists: Nobuhiko Sarukura and Masashi Yoshimura)

Next-generation light sources can be used for research ranging from basic to applied, such as environmental monitoring and high-power laser development, and offer limitless possibilities in the field of optical science. For example, ultrashort pulse lasers in the ultraviolet (UV) to deep ultraviolet (DUV) region can be used for material processing and gas sensing. To explore new optical materials such as laser materials and scintillator materials, ILE develops and studies a variety of materials, including oxide and fluoride glasses, crystals, and nanostructured materials, both experimentally and theoretically. Our main research goals are as follows:

- (1) Development and characterization of novel optical materials
- (2) Applications of novel optical materials
- (3) Reduction of detrimental crystal defects
- (4) Development of damage-resistant lenses, optical windows, and scintillators
- (5) Development of high-power DUV lasers and processing machines

Topics for which we particularly look forward to collaborative research with researchers in Japan and abroad are as follows:

- (a) Deep ultraviolet lasers
- (b) Laser and optical materials research
- (c) Terahertz studies and applications

3. Initiative

Physical Informatics (Contact scientist: Hideo Nagatomo)

By applying information science methods to the growing volume of data produced by advances in simulation and experimental measurement techniques, we aim to deepen the understanding of physical phenomena and lead to new discoveries. We also conduct research such as improving the controllability of laser plasmas. (If you wish to collaborate with this cross-cutting field, even if your proposal is submitted under another research field, please enter “Please link with the Physical Informatics field” in the remarks column when applying.)

Science-Humanities Integration (Contact scientist: Noriko Chikumoto)

This initiative promotes interdisciplinary research that combines advanced optical and quantum measurement techniques, including laser spectroscopy, imaging, and elemental analysis, with knowledge and perspectives from the humanities. In particular, it welcomes collaborative research on cultural heritage and archaeological materials to investigate their composition, production techniques, provenance, and deterioration through nondestructive and noncontact measurements. Such research will contribute to understanding their historical and cultural contexts and to the conservation and transmission of cultural heritage. (If you wish to collaborate with this cross-cutting field, even if your proposal is submitted under another research field, please enter “Please link with the Science-Humanities Integration field” in the remarks column when applying.)

4. General Subjects

We invite general research subjects outside the framework of the research fields above that use the facilities, computational codes, etc. offered for Joint Usage/Research at ILE.

9. Details of Research Methods

A1. Collaborative Research using the Large Laser Facility - GEKKO XII and LFEX

Collaborative research that promotes advanced research with a Liaison scientist using the large laser facility (GEKKO XII and LFEX). Each applicant may submit only one application. Please consult with your Liaison scientist at ILE and apply after fully understanding the special characteristics of the facility.

In FY2027, the experimental schedule of the large laser facility differs from the regular schedule due to facility refurbishment. Please confirm the details with your Liaison scientist at ILE.

Application as exploratory research

For Research Methods A1 and A2, you can choose to apply as an exploratory research subject when submitting your application. An exploratory research subject is a challenging research subject in its early stage based on a creative idea. Compared with general research subjects, exploratory research subjects are selected without emphasis on research achievements; however, only those judged to be particularly promising for future development will be adopted. If you wish to apply as an exploratory research subject, please select this option when applying through the Collaborative Research Application System.

Application by a Student PI

Students who meet the following conditions may apply for Research Methods A1 and A2 as Principal Investigators.

- (1) Only students who are enrolled in a master's or doctoral program at the time of application and will remain enrolled in a master's or doctoral program throughout the entire fiscal year of implementation may serve as Principal Investigators.
- (2) A student who serves as Principal Investigator must obtain a recommendation from their Supervisor. The Supervisor must be listed with the role "Supervisor" in Section 4 (List of collaborators) of the Research Method A1/A2 application form and must sign the consent form in Section 7 of the application form.
- (3) Each Supervisor may recommend only one student. The Supervisor must accompany the student in the experiment and provide appropriate guidance to the Student Principal Investigator.

A2. Collaborative Research using the High-Repetition-Rate Laser Facility

(Contact scientist: Akifumi Yogo)

Collaborative research that promotes advanced research with a Liaison scientist using the high-repetition-rate laser SENJU and the femtosecond laser. Each applicant may submit only one application. Before applying, please be sure to contact the Contact scientist at the following address:

senju-user-office.ile@ml.office.osaka-u.ac.jp

Then, please consult with your Liaison scientist and apply after fully understanding the special characteristics of the facilities.

Application as exploratory research

You can choose to apply as an exploratory research subject when submitting your application. Please refer to "Application as exploratory research" in the section "A1. Collaborative Research using the Large Laser Facility - GEKKO XII and LFEX" for details.

Application by a Student PI

Students who meet the conditions may apply for Research Method A2 as Principal Investigators. The eligibility conditions for Student PIs are the same as for Research Method A1. For details, please refer to "Application by a Student PI" in the section "A1. Collaborative Research using the Large Laser Facility - GEKKO XII and LFEX."

B1. Collaborative Research using Medium Size Lasers and Computer Code

Collaborative research that promotes advanced research with a Liaison scientist using the medium-sized facilities listed below. When submitting multiple applications for Research Method B1, please clearly state the differences from the other applications. Please enter the necessary expenses when applying (limit: 100,000 yen).

Terahertz Spectroscopy Advanced Measurement System (Contact scientist: Makoto Nakajima)

Terahertz spectroscopic measurements of various materials (semiconductors, insulators, dielectrics, organic and biological materials, etc.) in the terahertz region (0.1–10 THz, 3–300 cm⁻¹, 0.4–40 meV) are available. Collaborative research on material property evaluation, spectroscopy, evaluation of optical elements, sensing, etc. can be conducted.

Available measurements include temperature-variable (4 K–750 K) measurements, imaging measurements, polarization spectroscopy, time-resolved (pump-probe) measurements, measurements under strong magnetic fields, intense terahertz excitation experiments, and terahertz emission.

The world's most sensitive terahertz time-domain spectroscopy (THz-TDS) system, original terahertz time-domain ellipsometry (THz-TDE) measurements capable of evaluating properties such as the conduction characteristics of wide-gap semiconductors, and terahertz-band Raman scattering measurements (ultra-low-frequency Raman scattering measurements) are also available.

We are happy to consult on any matters related to terahertz measurements. For details, please contact the person below.

Makoto Nakajima, E-mail: nakajima.makoto.ile@osaka-u.ac.jp
Acceptance Research Group: Terahertz Science (THZ)

Optical Property Evaluation of Laser Systems (Contact scientist: Nobuhiko Sarukura)

Supported collaborative research themes:

- Search for solid-state lasers

- Search for nonlinear optical materials
- Search for scintillator materials
- Development of new optical elements
- Search for new terahertz functional materials
- Development of measurement and technology in new wavelength ranges

Available equipment for the research themes stated above:

- Vacuum ultraviolet-infrared streak camera
- Titanium sapphire regenerative amplifier
- Q-switched YAG laser
- THz spectroscopy system
- Fluorine laser

etc.

If you apply for collaborative research using this system, please contact the person below in advance.

Nobuhiko Sarukura, E-mail: sarukura.nobuhiko.ile@osaka-u.ac.jp

Acceptance Research Group: Laser Advanced Material (LAM)

Computational Simulation Code (Contact scientist: Hideo Nagatomo)

Computational simulation codes are being developed to investigate the physics of high-energy-density plasmas generated by high-power lasers. As a Joint Usage/Research Center, ILE offers some of these codes for joint usage research to promote further progress, for example by validating the models included in the simulations through comparison of various experiments with simulations. Each code has a range of plasma parameters it can handle and limits of applicability, so please hold a preliminary meeting with the person in charge. If you are unsure which code is suitable, please consult the Contact scientist (Nagatomo). Collaborative research on code development is also welcome; please feel free to consult.

For details on each simulation code, please refer to the following ILE web page:

<https://www.ile.osaka-u.ac.jp/eng/facilities/simulation/index.html>

Hideo Nagatomo, E-mail: nagatomo.hideo.ile@osaka-u.ac.jp

Acceptance Research Group: Physics Informatics (PIF)

B2. Individual Collaborative Research

Collaborative research, other than the research methods above, that promotes exploratory or advanced research with a Liaison scientist. Such research is expected to develop into Research Method A1, A2, or B1. When submitting multiple applications for Research Method B2, please clearly state the differences from the other applications. Please enter the necessary expenses when applying (limit: 100,000 yen).

C. Workshop related to Laser Science and High Energy Density Physics

Holding of a workshop that leads to the advancement of research in laser science and its interdisciplinary development. Please enter the necessary expenses when applying (limit: 100,000 yen).

10. Confirmation Items for Collaborative Research Application

When applying, the Principal Investigator must confirm that approval has been obtained from the head of the organization of each research collaborator. This confirmation may be made in writing, by email, or verbally. It is not necessary to submit any written documents to ILE.

Based on the above, the Principal Investigator and the research collaborators should each obtain approval from the heads of their organizations to become collaborators of ILE if the application is adopted.

11. Radiation Worker Registration

The area around the chamber in GEKKO XII target room I and pellet building 3F and 4F at ILE are designated as radiation controlled areas, and those who work in these controlled areas must be registered as radiation workers. Please complete the registration at your institution in advance.

Radiation Worker Registration requires a medical examination and education and training as stipulated by law. Although it is possible to register newly at ILE, the procedure takes time and may interfere with your experiment. Even in this case, please note that the medical examination must be received in advance at your institution or a general hospital. In addition, those who have already registered at their institution are required to take the training (30 minutes) on the Radiation Hazard Prevention Regulations of ILE every fiscal year.

Please confirm with your Liaison scientist whether Radiation Worker Registration is required.

Those affiliated with research institutions in Japan are required to have Form 2 issued by their institution and submit it for each participant.

The form (in Japanese) can be downloaded from:

<https://www.ile.osaka-u.ac.jp/ja/collaboration/format/index.html#11>

12. About Presentation of Research Results

For adopted subjects, a results report must be submitted at the end of the fiscal year, and the results must also be reported at the annual collaborative research results meeting, the “OPTO Symposium on Photon and Beam Science.” Details will be provided after adoption.

When publishing your research results externally, please state that the results were obtained through Joint Usage/Research. Depending on how the subject was carried out, please also acknowledge the Ministry of Education, Culture, Sports, Science and Technology (MEXT) Project for Promoting Public Utilization of Advanced Research Infrastructure (Program for Advanced Research Equipment Platforms). For details on the conditions and method for acknowledgments and on the use of the ILE logo, please refer to the web page below.

<https://www.ile.osaka-u.ac.jp/eng/collaboration/logo/index.html>

13. Use of Personal Information

Except as required by law, we will not use or provide personal information for any purpose other than the intended purpose without the prior consent of the individual. For details, please see The University of Osaka Privacy Policy (<https://www.osaka-u.ac.jp/en/guide/information/kojinjoho>).

14. Contact Information

Institute of Laser Engineering, The University of Osaka

Quadruple Matrix Center

e-mail: kyodokenkyu.ile@office.osaka-u.ac.jp

- For research activities and potential Liaison scientists at ILE, please see the ILE website (<https://www.ile.osaka-u.ac.jp/eng/>). Data on all faculty members at ILE can be viewed in The University of Osaka Researcher Directory (<https://rd.iai.osaka-u.ac.jp/#/>).
- For procedures after adoption, please see the Joint Usage/Research page on the ILE website (<https://www.ile.osaka-u.ac.jp/eng/collaboration/application/index.html>).