# R&D proposal “ALCA-Next” called for in FY2024(FS)

(FS Form 1)

|  |  |
| --- | --- |
| Proposed Technology Area and Category | Energy Conversion and Energy Storagea. Low-cost, high-efficiency, high-convenience solar energy conversion technologies*Please provide the name of the technical area and category in which the proposal is to be submitted.**If the proposal does not match any of the technical areas, please describe as Other New Idea and the name of is not required.* |
| Title of R&D project\* about 20 word | ○○○○○○○○○○○○○○○○○○○○ |
| R&D period | Total period: Month, 2024- Month, Year ( years) |
| R&D budget(Direct Costs)  | Thousands of yen |
|  |  |
| Name of Principal Investigator | Taro Ichigaya**(Note)****Please make sure to read the instructions in blue.****Italic notes may be deleted.****For items that have fields in both e-Rad and the research proposal, if the information is different, the information in the research proposal will be taken as correct.****FS Form 1 is strictly limited to one page each.****R&D costs are stated in units of ‘thousand yen’.****Research proposals must be converted to PDF format before uploading to e-Rad. Please use e-Rad's PDF conversion function for conversion.****Caution: This box should be removed at the time of submission.** |
| Affiliation (title, department/division, institution)  | Professor, Graduate School of XX Science and Technology, University of Fatima*Please fill in correctly without abbreviations, such as "Graduate School of ○○, Department of ○○," "Specially Appointed Associate Professor," etc.* |
| Last educational background | Completed Doctoral program in XX, Graduate School of XX Science and Technology, University of Science and Technology, 20XX (Advisor: Prof. XX)*The name of the academic advisor is required.* |
| Research history(Main career and research activities) | 20XX-20XX Assistant Professor, Faculty of Science, University of XX ScienceResearch on XX in Prof. XX's lab20XX - 20XX Researcher, XX Research InstituteEngaged in research on XX XX in the laboratory of Dr. XX.Professor, Faculty of XX Science, University of XX Science, 20XX-20XXResearch on the XX |
| Researcher number | XXXXXXXXXX*Enter the 8-digit researcher number assigned by the e-Rad system.* |
| Information onPrincipal Investigator | URL:*Please enter the URL of the researchmap. If not, please enter the URL of the laboratory's website, etc., which contains the information of the Principal Investigator.* |

## Overall Concept of R&D Project

(FS Form 2)

Please be sure to read Chapter 2 "2.9 Notes on Selectioin" and Chapter 6 of the Application Guidelines (Appendix) as well.

### Technologies to be created

Please describe which technologies you aim to create through the normal type ALCA-Next research and development after this FS.

### Scenario for carbon neutral contribution

Please describe a scenario of how the introduction of the relevant technology into society will lead to carbon neutrality.

### Goals of FS

\* Please clearly state what is missing at the moment and how it will be supplemented for the normal type ALCA-Next application.

### 4. Superiority and uniqueness of R&D

\*Please describe the following so that the reviewers are able to make appropriate assessment:

* The content of the technology is challenging and not an extension of conventional technology, and there is a breakthrough in science and technology (please provide evidence that the goals are set with high impact based on social and industrial needs).
* Proposals has superiority and originality based on domestic and international R&D trends.

### 5. Infrastructure and readiness to conduct the study

Please describe in detail the following points that will serve as the foundation for promoting this concept:

* History and results of the principal investigator's own research (and principal collaborators/participants, as appropriate) to date
* Other preliminary findings, data, etc. (if any)

... Form 2 should not exceed2 pages including figures and tables up to this point.

#### R&D structure & Schedule

(FS Form 3)

1. R&D structure

|  |  |  |  |
| --- | --- | --- | --- |
| **Group Name** | **Name of Principal Investigator or Principal Co-Investigator** | **Name of organization, department or position of the Principal Investigator or the Principal Co-Investigator's** | **Title of the R&D the group is in charge of (about 20 words)** |
| XXXX GroupXX (surname of Principal Investigator) Group | XXXXXX | Professor, Graduate School of XX Science and Technology, University of XX | Development of XXXXXX\*Describe the R&D title of the group in about 20 characters. This description should also be used for the "R&D Title" on Forms 4-1 and 4-2. |
| XXXXXX Group\*XXXXXX (surname of principal co-investigator (1)) Group\*Corresponds to "Joint Research Group 1" after Form 4-2 |  |  |  |
|  |  |  |  |

*<Notes on the description of the R&D system>*

* *In principle, JST will conclude a contract research agreement with the organization to which the Principal Investigator or Principal Co-investigator belongs for each R&D title, and the Principal Investigator and Principal Co-investigator will receive the allocation of the R&D funds.*
* *Co-researchers who are required to execute R&D expenses should be added to the R&D structure as Principal Co-investigators.*

### 2. Details and schedule of R&D to achieve the goals

\*Please describe the schedule in which the R&D will be carried out to achieve the goals of FS described in Form 2.

*(Example.)*

*Obtain data of C (Group X)*

*Promote the development of technology A. Complete the study of B in Y months after the start of the research; and get available data of C in the 2nd year.*

*Analysis of D (Group Z)*

*Using C in the previous section, analyze D and provide quantitative evidence for the possibility of E.*

## R&D Implementation System 1

(FS Form 4-1)

(Research Implementation Structure of the Principal Investigator Group)

#### Group of R&D Principal Investigator (XX Group)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Principal Investigator** | **Name of R&D institution**1) | **Title** | **Effort**2) |
| ○○ ○○ | Graduate School of XX University, XX Graduate School, XX Department | Professor | 40% |
| **Name of R&D****participant**3,4) | **Affiliation** (Omit if same as above) | **Title** |
| ○○ ○○ |  | Professor |
| ○○ ○○ |  | Associate professor |
| ○○ ○○ |  | Lecturer |
|  |  |  |

1) If the organization you are currently affiliated with differs from the organization at which you propose to conduct the adopted R&D, describe the latter in the column relating to special notes and inform us of the reason you have chosen this institution.

2) In the “Effort” column, please enter the percentage (%) of the researcher’s total annual work time (including not only time for research activities but also educational and medical activities, etc.) that is allocated for the implementation of the relevant R&D.

3) Fully describe the roles to be played by the members of the R&D group.

4) Add necessary information concerning the researchers participating in R&D. A description such as “X researcher” is acceptable in cases where the names of researchers are not known at the time the proposal is submitted.

5) If the same R&D topic needs to be addressed by more than one organization, members from different organizations may be added as research participants. However, in such cases, the organization to which the Principal Investigator belongs, which concludes the contract with JST, must be able to manage the R&D expenses. (If you need to contract with JST individually to execute the R&D expenses, please list them as a separate joint research group.

##### ○R&D implementation and Summary

・R&D Title

Please enter the same R&D title as described in the table in Form 3.1.(1) "R&D Structure.

・R&D implementation

\*Please enter the name of the research item corresponding to Form 3.2. R&D Schedule.

・Purpose and Contents of R&D

Please provide a brief outline of the R&D for which the Principal Investigator Group will be responsible.

##### ・Special note

\*If special duties, etc. (e.g., administrative positions such as dean of a graduate school, president of an academic society, etc.) require work time (effort), please indicate the circumstances and reasons.

## R&D Implementation System 2

(FS Form 4-2)

 (Research Implementation Structure of the Joint Research Group)

Please list all joint research organizations that will conclude a R&D agreement with JST and will be allocated R&D funds.

\*There is no upper limit to the number of joint research groups, but the team should be optimal and necessary and sufficient to carry out the R&D concept of the Principal Investigator. Adding a joint research group to the research team is not mandatory.

.

#### Joint Research Group (1) (○○ Group)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of main joint researcher** | **Name of joint R&D organization** 1) | **Title** | **Effort**2) |
| ○○ ○○ | XX Institute, XX Department, XX Team | Team leader | 10% |
| Researcher number 5) : 12345678Research organization code 6) : 1234567890 |
| **Name of R&D Participants**3,4) | **Affiliation** (Omit if same as above) | **Title** |
| ○○ ○○ |  | Chief researcher |
| ○○ ○○ |  | Researcher |
|  |  |  |
|  |  |  |

1) - 4) Please refer to the previous page.

5) Provide the eight-digit number of the main joint researcher, which was given upon registering researcher information on e-Rad.

6) Provide the codes for each affiliated research organization given by e-Rad.

##### ○R&D implementation and Summary

・R&D Title

Please enter the same R&D title as described in the table in Form 3.1.(1) "R&D Structure.”

・R&D implementation

\*Please enter the name of the research item corresponding to "Form 3.2. R&D Schedule.

・Purpose and Contents of R&D

\*Please provide a brief summary of the research that this collaborative research group will be responsible for.

##### ・Special note

\*If special duties, etc. (e.g., administrative positions such as dean of a graduate school, president of an academic society, etc.) require work time (effort), please indicate the circumstances and reasons.

\*If you are including overseas R&D institutions in your research team, please describe the reason(

e.g. facilities and environment, etc.) why it would otherwise be difficult to carry out the research.

## R&D Budget Plan

(FS Form 5)

\*The R&D expenses may be revised at the time of selection or in the middle of the R&D period, depending on the overall budget of the program, management by the program officer as an area, status of proposal evaluation, and other factors.

### 1. R&D cost plan by expense account (by expense category)

(Unit: thousand yen)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **1st fiscal year**(Sep. 2024 – Mar. 2025) | **2nd fiscal year**(Apr.2025 -Mar. 2026) | **Total**(Thousands of yen) |
| **Equipment** | 500 | 500 | 1,000 |
| **Supply** | 1,000 | 1,000 | 2,000 |
| **Travel** | 500 | 500 | 1,000 |
| **Personnel & honorarium****(number of****researchers)** | 0( 0 ) | 0( 0 ) | 0 |
| **Other** | 0 | 500 | 500 |
| **Direct cost total** | 2,000 | 2,500 | 4,500 |
| **Indirect cost** | 600 | 750 | 1,350 |
| **Total** | 2,600 | 3,250 | 5,850 |

*\* R&D cost accounts and their uses are as follows:*

 *- Equipment: purchases of facilities and equipment*

 *- Supply: purchases of supplies*

 *- Travel: travel expenses for the Principal Investigator and researchers*

 *- Personnel & honorarium: personnel costs of researchers, engineers, research aids, and RA (†), as well as for providing tokens of gratitude*

*† See Application Guideline Chapter 4. “4.13 Improving the Treatment of Doctoral Students ” for RA (research assistant).*

##### 〇 Special note

\* Please state any additional information that should be included

### 2. R&D budget plan by group

(Unit: thousand yen)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **1st fiscal year**(Sep. 2024 – Mar. 2025) | **2nd fiscal year**(Apr.2025 -Mar. 2026) | **Total** (Thousands of yen) |
| **○○ Group** | 2,000 | 1,500 | 3,500 |
| **△△ Group** | 0 | 1,000 | 1,000 |
| **Direct costs total** | 2,000 | 1,500 | 3,500 |
| **Indirect costs** | 0 | 1,000 | 1,000 |
| **Total** | 2,000 | 2,500 | 4,500 |

##### ○Special note

\*Please state any additional information that should be included

## List of Achievements

(FS Form 6)

### List of Proposer's Achievements

\* Describe up to 10 previous achievements (by the Principal Investigator and Principal Co-investigator), such as published papers and books, related to this R&D project in chronological order, starting with the most recent.

\*Follow the example below for the description of the paper. (For publications, please follow the example below.)

\*Information of an achievement may be provided in any order.

\* For preprints, please write (preprint) after the year of presentation.

#### < Principal Investigator >

*(Example.)*

*Author(s) (Please fill in all authors.) Title of paper, journal, volume, pages, and year of publication*

#### <Principal Co-investigator 1>

*(Example.)*

*Author(s) (Please fill in all authors.) Title of paper, journal, volume, pages, and year of publication*

### 2. Ex-post evaluation of research projects for which you have served as a representative under a competitive research funding system, etc.

\*Please list in the table below all completed projects for which the Principal Investigator served as the representative and for which the results of the ex-post evaluation have been made public (only those projects that have been made public within the past five years are acceptable). The following table is a list of all completed proposals for which ex-post evaluation results have been made publicly available.

\*If none of the above apply, delete the table and enter "N/A".

\*If many projects other than your own are listed, please indicate the number on which your project is listed so that the evaluators can easily identify it.

|  |  |  |  |
| --- | --- | --- | --- |
| Number | Name of Funding System or Name of Research Fund | Title of R&D project (R&D period) | URL of the webpage containing the results of the ex-post evaluation |
| 1 |  |  |  |
| 2 |  |  |  |

Subsidies and fundings from other programs

(FS Form 7)

\* Please provide the name of the funding system or research fund, the title of the research project, the research period, the role, and the amount of the research grant(s) (†) of each research project (including ALCA-next) that the PI and co-PI(s) are currently receiving, have applied for under the national competitive funding system or other joint research funds or research grants (including private foundations and overseas institutions). Please also refer to Section “4.2, Measures Against Unreasonable Duplication and Excessive Concentration” in the Application Guidelines.

† Applicants are also required to disclose the information on international funding on forms “Other Funding Supports” from the 2021 call for proposal, based on requirement of information provision on the status of receiving international funding of R&D for the research funding application in “Integrated Innovation Strategy 2020.” Please include all domestic and international research funding, including competitive research grants, private sources as well as joint and entrusted research funds from the private sector.

\* If a description is found to be false, an adopted proposal may be cancelled later.\* If, during the selection process for this R&D proposal, a description in this form requires alteration because the research subsidies applied or planned to be applied for, as mentioned above, have been altered, correct this form and send a notification e-mail to the contact details provided at the end of these application requirements.

\* Copies of the application documents and plans submitted to other systems may be requested during the selection interview.

####  Principal Investigator: Name

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name of Funding System or Name of Research Fund****(name of the institution allocating the funds)** | **Status** | **Name of R&D projects** **(name of representative)** | **R&D****period** | **Role****(representative/ co-researcher** | **(1) Received expenses (whole period)****(2) (FY2025 planned)****(3) (FY2024 planned)****(4) (FY2023 actual)** | **Effort****(%)** |
| ALCA-Next (this proposal) | Applied |  | 2024 Sep.-2031.Mar. | Representative | (1)35,000 thousand yen(2) 1,500 thousand yen(3) 2,000 thousand yen(4) - | 30 |
| *JST Strategic Basic Research Programs**PRESTO* | Applied | ◊◊ upgraded function by xx(OOOO) | 2021 Oct.-2026 Mar. | Co-researcher | (1) 40,000 thousand yen(2) 10,000 thousand yen(3) 8,000 thousand yen(4) 0 thousand yen | - |
| *Grant-in-Aid for Scientific Challenging Research* | Received | ◊◊ creation by xx(OOOO) | 2019Apr.-2024 Mar. | Representative | (1)15,000 thousand yen(2) 0 thousand yen(3) 5,000 thousand yen(4) 5,000 thousand yen | 20 |
| *Joint research fund (○○ corporation)* | Received | Analysis of ◊◊ by xx | 2021Oct.-2023 Sep. | Representative | (1) 3,000 thousand yen(2) 1,000 thousand yen(3) 1,000 thousand yen(4) 0 thousand yen | 10 |

-List, in descending order of the amounts received (over the entire period), subsidies received or expected to be received. Then, describe subsidies applied for and those that you plan to apply for, if applicable.

-If a subsidy is being received or is determined to be received, enter “received.” Enter “applied” if you have applied for and is currently under the selection process or if you plan to apply for a subsidy.

- In the “Name of Funding System” or “Name of Research Fund,” if the research is not funded by domestic competitive research funds, please also provide the name of the institution allocating the funds.

-Describe whether you are a representative or co-researcher under “role.”

-Enter the R&D expenses (direct costs) received by the PI or Co-PI

-Describe the distribution ratio of the time required to perform the research relative to 100%, which represents Total annual work hours (including not only time for research activities but also educational and therapeutic activities) under “effort” [as defined at the Comprehensive Science, Technology, and Innovation Convention]. Do not account for efforts regarding the proposals currently under selection or those planned to be applied except ALCA-Next. The Total made toward subsidies being received should not exceed 100%.

-Indicate your affiliation and position at the institution where you are applying for or receiving the research proposal.

-Add or delete rows as necessary.

#### Principal Co-investigator (1): Name

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name of Funding System or Name of Research Fund****(name of the institution allocating the funds)** | **Status** | **Name of R&D projects** **(name of representative)** | **R&D****period** | **Role****(representative/ co-researcher)** | **(1) Received expenses (whole period)****(2) (FY2025 planned)****(3) (FY2024 planned)****(4) (FY2023 actual)** | **Effort****(%)** |
| ALCA-Next (this proposal) | Applied |  | 2024. Sep-2031.Mar. | Co-researcher  | (1) 1,000 thousand yen(2) 1,000 thousand yen(3) 0 thousand yen(4) - | 10 |
| *JST Strategic Basic Research Programs**PRESTO* | Applied | ◊◊ upgraded function by xx(OOOO) | 2021 Oct.-2026 Mar. | Co-researcher | (1) 40,000 thousand yen(2) 10,000 thousand yen(3)10,000 thousand yen(4)10,000thousand yen | - |
| *Grant-in-Aid for Scientific* *Challenging Research* | Received | ◊◊ creation by xx(OOOO) | 2019Apr.-2024 Mar. | Representative | (1)15,000 thousand yen(2) 0 thousand yen(3) 5,000 thousand yen(4) 5,000 thousand yen | 15 |
| *Joint research fund (○○ corporation)* | Received | Analysis of ◊◊ by xx | 2021Oct.-2023 Sep. | Representative | (1) 3,000 thousand yen(2) 1,000 thousand yen(3) 1,000 thousand yen(4) 0 thousand yen | 5 |

(FS Form 8)

Special note

*\*Form 8 is limited to 3 pages*

##### ○Conflict of interests between the Principal Investigator (PI) and evaluator

\*For the definitions of conflict of interest, please refer to "2.8.3 Conflict of Interest Management" in Chapter 2 of the Application Guidelines.

\* To find out who PD PO and AD are, please refer to following ALCA-Next website’s ‘R&D Area’ and pages on each technical area.

[*https://www.jst.go.jp/alca/en/index.html*](https://www.jst.go.jp/alca/en/index.html)

・Conflict of interest with the Program Director (PD): [ ] Yes [ ] No

Reason (if a conflict exists):

*(Example of description) I am conducting joint research with the PD in the* XX *project (20XX - 20XX) and meet c. of the requirements for interested parties specified in 2.8.3.1).*

・Conflict of interest with the Program Officer (PO) : [ ] Yes [ ] No [ ] Unknown (only for Other New Idea)

Reason (if a conflict exists):

*(Example of description) The company is conducting joint research with the PO in the* XX *project (20XX - 20XX) and meets the c. of the interested party requirements specified in 2.8.3.1).*

・Conflict of interest with the Area Advisor (AD) : [ ] Yes [ ] No [ ] Unknown (only for Other New Idea)

Reason (if a conflict exists):

*(Example of description) The company is conducting joint research with the AD in the XX project (20XX - 20XX) and meets the c. of the interested party requirements specified in 2.8.3.1).*

##### ○Participation of a Principal Co-investigator who belongs to an organization related to the Principal Investigator (e.g., an organization established based on the research results of the Principal Investigator, etc.).

○The organization related to the R&D Principal Investigator: [ ] Yes [ ] No

Name of the institution (name of principal Co-investigator): XX *Corporation (Taro Kagaku)*

Reason (if any):

*(Example: The organization was established based on the research results of the Principal Investigator, and meets a. of the requirements specified in 2.8.3.2).*

##### ○Participation of JST-funded companies in research groups

Participation of JST's portfolio companies: [ ] Yes [ ] No

Name of the organization (name of the R&D representative): XX *Corporation (Taro Kagaku)*

Name of the institution (name of principal Co-investigator): XX *Corporation (Taro Kagaku)*

##### ○(Only if applicable) Special note regarding the applicant's effort

\*Please describe any circumstances that require the research proposer to spend work time (effort) on special assignments, etc. (e.g., specific on-campus or in-house work, etc.).

##### ○Other special remarks

\*If you have any concerns regarding those involved in the selection process, please describe them in detail.

\*In the case of multiple applications to ALCA-Next, any differences from the previous proposal.

\*If you have received research funds in the past from JST projects related to ALCA-Next (ALCA, JST-Mirai), any differences from those proposals.

\*Others such as changes of the affiliation, etc.