Please write in the space provided or check the applicable boxes.

|  |  |
| --- | --- |
| BL15XU Staff Contact Name |  |

**Proposal Leader**

The proposal leader should come to SPring-8 to conduct the experiments.

|  |  |
| --- | --- |
| Printed Name |  |
| Affiliation  (Group, department) |  |
| Tel |  |
| E-mail |  |
| SPring-8 User Card No. |  |

**Administrative Support Assistant for Application**

Please enter your support assistant’s contact information which we can use to ask for various application details necessary before and after your experiments.

|  |  |  |  |
| --- | --- | --- | --- |
| Printed Name |  | | |
| Affiliation  (Group, department) |  | | |
| Tel |  | E-mail |  |

**Agreement Terms:** Please read and agree to the following.

|  |
| --- |
| 1. Your group will follow the BL15XU Rules and Regulations. 2. You will perform your experiments as collaborative research with the BL15XU staff. 3. When publishing experimental results obtained at BL15XU, you will obtain the permission from the Station Director in advance. You also agree that the BL15XU staff who contributed to your experiments will be a co-author(s) of the resulting publication(s). 4. You agree to discuss the details of the experimental plan with the BL15XU staff in advance. 5. The proposal leader and/or the support assistant will prepare and submit all documents needed for all team members before the relevant deadline(s). 6. Your group will follow all instructions from the BL15XU staff concerning the safety requirements of the beamline and all of its associated equipment. 7. You will submit the Experiment Summary Report via the SPring-8 website within 50 days after your experiment. 8. You will publish research papers on your results (incl. refereed proceedings and dissertation) within three years after your experiment. If the publications are not completed by the deadline, it will be considered a proprietary research and you will pay the beamtime fee. 9. You will cooperate in the BL15XU Office activities, such as a report, workshop and lecture. |
| Please confirm your agreement with the above requirements by writing your name.  Your Printed Name: |

**Basic Information**

* Type of Proposal (Check the one that applies.)

\* If proposal type is NIMS, submission of the “Supervisor Approval Form” is required.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | NIMS\* |  | NIMS-TIES |  | Collaborative research |

●　Type of usage (Check the one that applies.)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Common use |  | Technical support |  | Technical surrogate |

1. Proposal Number

|  |
| --- |
| Successful applicants will be notified this number when review results are released. |

1. Title of Experiment (70 word limit)

|  |
| --- |
|  |

1. Research Area (Select from the “Table of Research Areas and Methods.”)

|  |  |  |
| --- | --- | --- |
| Group | Subgroup | Keywords (30 word limit) |
|  |  |  |

1. Research Method (Select from the “Table of Research Areas and Methods.”)

|  |  |  |
| --- | --- | --- |
| Group | Subgroup | Keywords (30 word limit) |
|  |  |  |

* The type of material your research sample could become.

(Check the one that applies. If others, please specify the type.)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Electronic materials |  | Battery materials |  | Structural materials |
|  | Magnetic materials |  | Catalyst materials |  | Superconducting materials |
|  | Optical materials |  | Other materials: | | |
|  | Other than materials (methods, device development etc.): | | | | |

* The form of your research sample. (Check the one that applies.)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Single crystal thin film |  | Polycrystalline thin film |  | Nanoscale structure |
|  | Powder crystalline |  | Bulk single crystal |  | Amorphous thin film |

1. Choice of Beamline

|  |
| --- |
| BL15XU |

Apparatus (Check those that apply. If others, please specify the type.)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| XRD |  | High-resolution x-ray powder diffractometer | | | | |
|  | 6-axis diffractometer for structural analysis of functional thin films | | | | |
|  | Time-resolved exp. |  | necessary |  | unnecessary |
| XPS |  | Hard x-ray photoelectron spectrometer | | | | |
|  | Hard x-ray photoelectron spectrometer with automatic sample changer | | | | |
| Others |  |  | | | | |

* Time estimate of the beamtime you request (1 shift = 8 hours)

There may be cases in which we cannot allocate beamtime depending on SPring-8 operating mode conditions and proposal application circumstances even when your proposal is adopted.

|  |  |
| --- | --- |
| Number of shifts and energy/wavelength of x-ray you request | Shift(s) x run(s) ( keV or Å)  + Shift(s) x run(s) ( keV or Å) = Shift(s) |
| How you calculated the overall beamtime |  |
| <Example of calculation>  --- request  3.5 Shifts x 1 run (8.0 keV) + 3 Shifts x 1 run (12.398 keV) = 6.5 Shifts  --- calculation  0.5 shifts for optics tuning + 0.2 shifts per sample x 15 samples (8.0 keV)  + 1 shift for optics tuning + 0.5 shifts per sample x 4 samples (12.398 keV) = 6.5 shifts | |

6. Operation Mode (Check the one that applies.)

Details of the operation mode：<https://user.spring8.or.jp/?p=15836>

We cannot accept requests for any operation mode this period.

|  |  |
| --- | --- |
|  | Any |
|  | Equal interval mode (A-, B- or C-mode, not specifically) |
|  | Specific mode required（A, B, C, D, E, F, G, H）\* (in order of preference) |
| 1st: |
| 2nd: |
| 3rd: |
| 4th: |
| 5th: |
| Other |

\* \*The D- and E-modes are operated in research terms A only, while the F- and G-modes are operated in research terms B only.

* Unacceptable Dates for the Experimental Schedule

Please specify the date(s) and reason(s) why you cannot come to SPring-8. Please consider the dates which might become unacceptable including the days for transportation for your business trips.

If the requested operation mode conflicts with your inconvenient dates, we cannot allocate beamtime even when your proposal is adopted.

|  |
| --- |
| The experimental schedule for all users will be arranged based on this information. Changes cannot be made after the scheduled beamtime is announced. Note that synchrotron radiation is a limited resource and scheduling problems always interferes with other users. |
|  |

**Project Team Members**

7. Project Team Members: User Card No., Name, and Affiliation

Please write all co-workers who may participate in your proposed experiments. For the participating beamline staffs, check the applicable boxes in the BL15XU staff list shown below.

Recommended number of team members is three people or more.

|  |  |  |
| --- | --- | --- |
| To participate in experiments at SPring-8, **submission of the Radiation Worker Registration Form** is essential. | | |
| SPring-8  User Card Number | Printed Name | Affiliation |
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Please discuss participants and check their names.

|  |  |  |
| --- | --- | --- |
|  | 0003369 | Osami Sakata |
|  | 0015561 | Masahiko Tanaka |
|  | 0003395 | Yoshio Katsuya |
|  | 0001457 | Shinji Kohara |
|  | 0001203 | Shigenori Ueda |

**Known Safety Hazards & Measures to Be Taken**

8-1. Does your proposed research involve any of the following? If yes, you will be required to submit additional forms with your proposal application. (Check all items that apply.)

|  |  |
| --- | --- |
|  | High pressure gas cylinder |
|  | Radioisotope |
|  | Radiation generator: installation, modification, change of purpose or specifications |
|  | Internationally controlled materials (nuclear source/fuel materials) |
|  | Installation of devices/equipment regulated by law:  - High-pressure gas manufacturing plant  - Local ventilation/gas supply and exhaust system  - Crane |
|  | Chemicals regulated by law:  - Specific substances regulated by the "Act on the Prohibition of Chemical Weapons and Control of Specific Chemicals"  - Specified poisonous substances regulated by the "Poisonous and Deleterious Substances Control Law"  - Substances for which manufacturing is prohibited, asbestos, etc. under the "Industrial Safety and Health Law"  - Narcotics, stimulant drugs, hemp (gum), opium, and their raw materials, psychotropic drugs, and no dangerous substances of 1/5 or more in quantity specified by the "Fire Service Act" |
|  | Invasive alien species |
|  | Specified risk materials (SRM) from cattle |
|  | Prohibited imports regulated by the "Plant Protection Act" |
|  | Recombinant DNA |
|  | Human materials |
|  | High-energy laser system (Class 4, Class 3B and Class 3R lasers specified by IEC 60825-1 standard) |
|  | Live animals (mammals, birds, or reptiles)? |
|  | Specific biological samples/biohazards\* (agents of biological origin that have the capacity to cause ill-effects in other organisms)? |

\*pathogenic microbes (incl. infectious nucleic acids, plasmids, prions), parasites, and the toxic substances, carcinogens, and allergens produced by them that can cause harm to humans, livestock, and farm/marine products.

8-2. What BL15XU/SPring-8 equipment would you like to use?

(Check all items that apply, and/or write in the space provided.)

|  |  |  |
| --- | --- | --- |
| XRD |  | One-dimensional detector |
|  | Cryogenic He-gas stream cooler |
|  | Cryogenic N2-gas stream cooler |
|  | N2-gas stream sample heater |
|  | PILATUS two-dimensional detector |
|  | Imaging Plate (consultation necessary) |
|  | Others: |
| XPS |  | Cleaver |
|  | Open cycle cryostat |
|  | Wobble-stick with a diamond file in UHV |
|  | Others: |
| Auto XPS |  | DC power supply (ADCMT 6240A) |
|  | Others: |
| Others |  |  |

8-3. Details of samples

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| [1] Use chemical names or formulas and do not use abbreviations or acronyms; [2] capillary (powder), cylinder (gas), plate (crystal), metal foil, tablet, bulk, etc.; [3] SI Unit (e.g.; 3 mg, 3 mm3, and not the number of samples); [4] radioactive, toxic, flammable, infectious, harmless, etc.; [5] sample, for measurement, for cleanser, for coolant, for tranquilizer, etc.; [6] details of how to keep and dispose (e.g.; store in a plastic case and bring it back); [7] details of safety measures (e.g.; take preventive measures against scattering) \* For substance which need special handling such as toxic chemicals, safety measures should be specifically described. [8] Please report the assessment results, in principle, on 4- or 5-level rating system (e. g. the risk level is 3 of the 4 stage, “3/4”). Large number means serious hazard. For example, “COSSH e-tool” results “control approach” for handling chemicals as follows.  4: Recommendation to consult an expert, 3: Good working practice and containment, 2: Good working practice with engineering control, 1: Good working practice and general ventilation  Input “N/A” for chemical substances that are exempt from the regulation. | | | | | |
| (1) | Name [1] |  | (2) | Name |  |
| Shape (form) [2] |  | Shape (form) |  |
| Quantity [3] |  | Quantity |  |
| Hazards [4] |  | Hazards |  |
| Purpose [5] |  | Purpose |  |
| Handling and  disposal method [6] |  | Handling and  disposal method |  |
| Safety measures [7] |  | Safety measures |  |
| Risk Level [8] | / | Risk Level | / |
| (3) | Name |  | (4) | Name |  |
| Shape (form) |  | Shape (form) |  |
| Quantity |  | Quantity |  |
| Hazards |  | Hazards |  |
| Purpose |  | Purpose |  |
| Handling and  disposal method |  | Handling and  disposal method |  |
| Safety measures |  | Safety measures |  |
| Risk Level | / | Risk Level | / |
| (5) | Name |  | (6) | Name |  |
| Shape (form) |  | Shape (form) |  |
| Quantity |  | Quantity |  |
| Hazards |  | Hazards |  |
| Purpose |  | Purpose |  |
| Handling and  disposal method |  | Handling and  disposal method |  |
| Safety measures |  | Safety measures |  |
| Risk Level | / | Risk Level | / |
| (7) | Name |  | (8) | Name |  |
| Shape (form) |  | Shape (form) |  |
| Quantity |  | Quantity |  |
| Hazards |  | Hazards |  |
| Purpose |  | Purpose |  |
| Handling and  disposal method |  | Handling and  disposal method |  |
| Safety measures |  | Safety measures |  |
| Risk Level | / | Risk Level | / |
| (9) | Name |  | (10) | Name |  |
| Shape (form) |  | Shape (form) |  |
| Quantity |  | Quantity |  |
| Hazards |  | Hazards |  |
| Purpose |  | Purpose |  |
| Handling and  disposal method |  | Handling and  disposal method |  |
| Safety measures |  | Safety measures |  |
| Risk Level | / | Risk Level | / |

8-4. Equipment that you will bring to BL15XU/SPring-8

High-pressure gas containers and laser systems are essential; an additional document will be required.

|  |  |  |
| --- | --- | --- |
| Equipment  (name of company, product, and model ; personally manufactured; etc.) | Specifications  (voltage, ampere, pressure, temperature, etc.) | Safety measures |
|  |  |  |
|  |  |  |
|  |  |  |

**Purpose and Significance**

9. Purpose and Significance of Experiment (2250 word limit)

Quantitatively describe the purpose, significance, originality, and expected outcome of your proposed experiments.

[Image Files] A total of 3 image files (figures and/or tables) can be inserted in section 8. “Purpose and Significance,” and 9. “Method and Layout.” The acceptable file formats are JPEG (.jpg/.jpeg), GIF(.gif), and PNG(.png) only. Maximum file size is 1 MB per file.

|  |
| --- |
| Please describe in detail the pre-experimental results and how the measurements using synchrotron radiation should be carried out for a successful outcome. |
|  |

(continued on next page)

|  |
| --- |
|  |

**Method and Layout**

10. Experimental details (sketch of setup, measurement method, detector, concentration of samples, etc.) (1350 word limit)

Please describe the method of the measurements using synchrotron radiation and the expected outcome. Specification of required energy or wavelength is necessary.

|  |
| --- |
| For special equipment, please describe the installment methods in detail by using image files. |
|  |

Supervisor Approval Form

|  |  |
| --- | --- |
| Proposal Leader |  |
| Title of Experiment |  |

I hereby authorize the proposal leader to apply for beamtime at the NIMS beamline BL15XU at SPring-8.

Group name:

Group leader: 　　　　　　　　　 Seal or Signature

Date of approval (MM/DD/YYYY):

日本人 Japanese National

|  |  |  |  |
| --- | --- | --- | --- |
| 氏名/Name | 所属（部、課まで）/Affiliate Company/Organization (Division, Section)  連絡先/Contact Information | 居住地/ Residence | 経済産業省が公表している外国ユーザーリストの機関に所属していますか （※）  Do you affiliate with any company/organization listed in the “End User List”?\* |
| 派遣元/Source corporation name (in case of dispatch) |
|  |  | □ 国内/Japan  □ 国外/Outside Japan | □ はい/Yes  □ いいえ/No |
|  |
|  |  | □ 国内/Japan  □ 国外/Outside Japan | □ はい/Yes  □ いいえ/No |
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外国人 Foreign National

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 氏名/Name | 所属（部、課まで）/Affiliate Company/Organization (Division, Section)  連絡先/Contact Information | 雇用関係  /Employment relationship | 滞在期間  /Length of stay in Japan | 国籍  /Nationality | 経済産業省が公表している外国ユーザーリストの機関に所属していますか（※）  Do you affiliate with any company/organization listed in the “End User List”? \* |
| 派遣元/Source corporation name (in case of dispatch) |
|  |  | □ 有/Employee  □ 無/None | □ 六ヶ月未満/less than 6 months  □ 六ヶ月以上/more than 6 months |  | □ はい/Yes  □ いいえ/No |
|  |
|  |  | □ 有/Employee  □ 無/None | □ 六ヶ月未満/less than 6 months  □ 六ヶ月以上/more than 6 months |  | □ はい/Yes  □ いいえ/No |
|  |
|  |  | □ 有/Employee  □ 無/None | □ 六ヶ月未満/less than 6 months  □ 六ヶ月以上/more than 6 months |  | □ はい/Yes  □ いいえ/No |
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|  |  | □ 有/Employee  □ 無/None | □ 六ヶ月未満/less than 6 months  □ 六ヶ月以上/more than 6 months |  | □ はい/Yes  □ いいえ/No |
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|  |  | □ 有/Employee  □ 無/None | □ 六ヶ月未満/less than 6 months  □ 六ヶ月以上/more than 6 months |  | □ はい/Yes  □ いいえ/No |
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