

2016



FRENCH NATIONAL RESEARCH AGENCY (ANR)
AND
JAPAN SCIENCE AND TECHNOLOGY AGENCY (JST)

A BILATERAL CALL FOR PROPOSALS
IN THE FIELD OF
"MOLECULAR TECHNOLOGY"

2016

Closing Date:
April, 5th 2016
10H00 (French time)
17H00(Japan time)

IMPORTANT DATES

CLOSING OF THE CALL FOR PROPOSALS

ON 05/04/2016 AT 10H00 (FRENCH TIME)

ON 05/04/2016 AT 17H00 (JAPAN TIME)

The project proposals must be submitted by French PI on the ANR submission website
before the call for proposals closing deadline for French partners:

The Japanese PI will also have to register their application on the online application
system “e-Rad” before the call for proposals closing deadline for Japanese partners:

Please read carefully the present document in its entirety, and the regulations concerning
the conditions of allocation of JST and ANR funding before submitting a joint research
proposal.

CONTACTS

ANR Office :

Dr. Elise Cahard (project officer)

elise.cahard@agencerecherche.fr

Dr. Olivier Spalla (programme manager)

olivier.spalla@agencerecherche.fr

JST Office :

Mr. Yasuhiko Ishikawa

Ms. Chiko Tsukazaki

Dr. Hideo Nakajima

jointfr@jst.go.jp

CONTENTS

1.	INTRODUCTION	4
2.	SCIENTIFIC SCOPE.....	5
3.	STRUCTURE OF COLLABORATIVE RESEARCH CONSORTIA	7
4.	SELECTION CRITERIA, PROCESS OF EVALUATION AND DECISION MAKING.....	8
4.1.	SELECTION CRITERIA.....	8
	FORMAL ELIGIBILITY CRITERIA	8
	EVALUATION CRITERIA	9
4.2.	EVALUATION PROCESS AND DECISION MAKING	9
5.	SUBMISSION PROCESSES	10
6.	MONITORING AND REPORTING.....	11
6.1.	COLLABORATIVE RESEARCH AGREEMENT	11
6.2.	REPORTS	12
6.3.	PUBLICATION OF RESEARCH ACHIEVEMENT	13

1. INTRODUCTION

This text presents the **third bilateral call** by the Japan Science and Technology Agency (JST) and the French National Research Agency (ANR) for collaborative projects in the field of “**Molecular Technology**”. “Molecular Technology” is an emerging research discipline that involves the incorporation of synthetic molecular building blocks including electronic, optical, mechanical, and biological components into function systems that will impact technologies for human welfare in 20-30 years. The resulting innovations are likely to deliver solutions to the most pressing human problems, including energy, environmental and human health issues.

Creating new physical properties at the molecular level is the ultimate goal in material synthesis. “Molecular Technology” aims at selecting the best molecules and involves the global chain of designing, synthesizing and organizing them into materials. It makes use of a combination of precision synthesis technologies, theoretical and computational science and manipulation of molecules. Indeed, in contrast to other technologies, “Molecular Technology” refers specifically to this set of technologies that aim to create analytically desired functions and physical properties at a molecular level and keep them at the microscopic level.

In light of existing skills and resources in the area of “**Molecular Technology**”, joining French and Japanese capacities in this emerging field through jointly funded research projects is of great interest and benefit to scientists from both countries. By creating synergies, these collaborations will form a basis for translation of results into benefits for industry and society.

To reach this long term objective, ANR and JST have agreed to implement a **third bilateral call** for proposals published in both countries to fund ambitious interdisciplinary research collaborations among researchers in France and Japan.

The aims of this joint call are **to strengthen the collaboration between Japan and France within the field of “Molecular Technology”**, to achieve world-class scientific results leading towards new innovative technologies which can address sustainability challenges facing the

international community, and to induce dramatic progress through synergy between the Japanese and French teams.

This call for collaborative proposals will require applicants based in France and Japan to work in partnership on research projects that will have the France-based partners funded by ANR and the Japan-based partners funded by JST. Eligibility to apply will be determined by national eligibility rules and the resources requested will also have to **comply with national guidelines**. Applicants are advised to refer to **their national annexes** on these sources and/or to contact their national contact for further information.

This joint call is published on:

- ANR website : <http://anr.fr/TMOL-2016>
- JST website: http://www.jst.go.jp/sicp/announce_joint_anr_mt3.html

For information, the following link shows a JST press release of the selected four projects on the first bilateral call on “Molecular Technology” in 2014:

<http://www.jst.go.jp/pr/info/info1075/index.html>

and the selected four projects on the second bilateral call in 2015:

<http://www.jst.go.jp/pr/info/info1142/index.html>

2. SCIENTIFIC SCOPE

The projects must propose a breakthrough in the development of new intelligent molecular materials to meet wider social needs, leading for instance to greater industrial competitiveness in the field of material science for environment/energy, electronics, and human health.

Possible applications based on “Molecular Technology” include, for example and in a non-exhaustive list, electronic equipment incorporating soft materials, solar cells films featuring super-low power consumption and resource recycling and medical applications.

To be considered in the scope of “Molecular Technology”, it is required that the challenging research topics primary make use of the chain or part (at least two topics) of the chain of technologies addressing molecules. This chain consists of the following six elemental technologies:

- 1) **Design and synthesis**, relating design and creation of new functional intelligent molecular materials, with the collaborative use of modern organic synthesis and theoretical and calculation science. Macroscopic forms of molecular materials can be either solids, thin films, gels, liquids....
- 2) **Shape and structure controls**, relating the new functions of molecular materials by controlling shapes and structures
- 3) **Conversions and processes**, relating the development of new catalysts and systems based on structural designing at a molecular level
- 4) **Electronic state control**, relating on free control of the electronic state of molecules
- 5) **Aggregates and composite control**, relating the form/function analysis and chemical control of aggregates and composites based on molecules
- 6) **Transport and migration control**, relating the transport of molecules and ions (ex: improvement in speed and selectivity of transporting molecules or ions *via* membranes)

The breakpoint of any proposed project must be the transfer of functionalities from the molecular level to the mesoscopic and microscopic scale.

Some guidelines to this call are imposed:

- Modelling and computational theories and results can be a large part of the project, but should be completed by experimental results using real molecules with real physical properties.

Projects should involve the use of modern organic synthesis. New innovative molecular aspects are required.

New innovative and/or designed molecules should be involved.

- Projects should be positioned at the level of basic technological research up to proof of concepts and feasibility (Technology Readiness Level (TRL) from 1 (Basic technology research) to 3 (Technological validation of the proof of concept)).

3. STRUCTURE OF COLLABORATIVE RESEARCH CONSORTIA

Consortia must consist of **at least one French and one Japanese researcher / research group**, and only bilateral projects will be funded.

Joint research proposals may be submitted by higher education institutions (Universities), non-University public research organizations, as well as private partners. The integration of enterprises into consortia is possible and welcomed but not mandatory.

Research consortia will be funded for a period starting in autumn 2016 and ending by March 31st 2020.

A balanced scientific and funding contribution from both countries to a joint proposal is expected.

Projects must involve integrated collaboration between partners from both countries. Stand-alone sub-projects in the two different countries will not be admissible.

The project must be organized in work packages with clear contributions and responsibilities.

Funds can be used to cover salaries of postdoctoral fellows and doctoral students as well as for consumables, equipment, and travel expenses for internal consortia meetings (at least one internal meeting per year), scientific conferences and researcher exchange between France and Japan. All requested salaries must be in accordance with the respective national administrative regulations.

Adequate funds for exchange and meetings shall be included in proposals.

The ANR will support each project up to 250.000 € (including all French partners) for the duration of the project. The JST will support each Japanese team with up to 23 million Yen as

direct cost (the overhead cost of 30% of direct cost is added separately) for maximum 43 months.

Depending on the quality of the proposals received, the intention is to select 4 ambitious projects for funding.

Successful applicants will be required to present the outcomes of their projects and attend a kick-off event in France and final event in Japan. To meet this objective, applicants should therefore include in their proposals travel and accommodation costs for one such meeting.

4. SELECTION CRITERIA, PROCESS OF EVALUATION AND DECISION MAKING

4.1. SELECTION CRITERIA

IMPORTANT: Applications not fulfilling the common or Japanese and/or French national selection criteria will not be considered for funding.

FORMAL ELIGIBILITY CRITERIA

- The pdf format of the proposal is limited to **35 pages**
- Consortia must consist at least of one French and one Japanese researcher / research group, all belonging to a research organization or to an enterprise (Japanese side researchers must belong to Japanese organizations.)
- **Maximum Project duration: 43 months** (The end of the project period cannot go beyond March 31st 2020)
- Applications should be complete (including technical, financial and administrative details), should not exceed the form requested and should comply with deadlines
- A **structural formula / drawing of the targeted molecule(s)** must be included in the body and in the executive summary section of the proposal.

EVALUATION CRITERIA

Evaluation and ranking of proposals will be based on the following criteria:

- Intellectual Merit (Scientific quality and innovativeness of the joint research plan);
- Conformity with the Call Scope;
- Research Plan (Concrete and challenging goals to be accomplished/ Feasibility and appropriateness of the methodology);
- Research Foundation (Accessibility to experimental facilities, data and samples/ interdisciplinary/ inclusion of all necessary expertise);
- Team Members (Competences and expertise of the Japanese and French research teams regarding the proposed work/ diversity and complementarities of their research expertise);
- Synergy from the Collaboration (Added value from the equal partnership among Japanese-French teams);
- Collaboration Management (Feasibility and appropriateness of the member exchange plan/ the management plan of research resources and outcomes);
- Sustainable Development of the Collaboration (Networking especially among PhD students and post-docs, Co-funded Laboratories, etc.);
- Budget Justification (Appropriateness of funding requested);
- Potential Impacts (not only for academia but also for industry and society);

4.2. EVALUATION PROCESS AND DECISION MAKING

- ANR and JST will jointly assess all proposals to ensure that they meet the call's formal criteria (e.g. date of submission; at least one French and one Japanese research institution; inclusion of all necessary information in English; appropriate limits on length) and that applicants are eligible to submit applications according to national rules (Japanese side researchers must belong to Japanese organizations.). Proposals

not meeting the formal criteria neither the receivability criteria will be declined without peer review.

- All collaborative proposals submitted and **declared eligible** will be subject to peer review involving external referees. Applications will be ranked by a common international panel of experts.
- Based on the ranking list, and recommendations from the review panel, a final funding decision will be made by the national funding agencies.
- Applicants will be informed in writing of the results of the review and, where applicable, of the subsequent administrative steps according to the respective national regulations.

ANR will fund the French research groups, JST will fund the Japanese research groups of consortia selected for funding, according to existing national rules, regulations and funding procedures.

For specific national rules and regulations regarding funding of project parts, please refer to the national annexes to the call text at:

- ANR : <http://anr.fr/TMOL-2016>
- JST : http://www.jst.go.jp/sicp/announce_joint_anr_mt3.html

5. SUBMISSION PROCESSES

A principal investigator “PI” will be nominated on each side to act as the national representative.

IMPORTANT: The Japanese and French applicants shall write a joint application. The French PI shall submit the scientific proposal online on the ANR submission website and Japanese PI shall register their application on the online application “e-Rad”.

The application must be written in English. All applicants must fulfill their respective national eligibility rules for research grant application.

The joint application should follow the template provided in the annex of this call text. On behalf of the consortium:

- **the French PI** must submit one complete application to ANR, consisting of **the complete joint proposal (English form) and administrative details by electronic submission by April, 5th 10h00 (French time)** at ANR submission website : <https://aap.agencerecherche.fr/layouts/15/SIM/Pages/SIMNouveauProjet.aspx?idAAP=1040>
- **The Japanese PI** have to register their application on the online application system “e-Rad” (<http://www.e-rad.go.jp>) **by April, 5th 17h00 (Japan time)**, as described in the accompanying Japanese language information. Japanese applicants must check the accompanying documents for Japanese researchers.

The applicants are advised to consult their respective funding agency:

- **JST:** Yasuhiko ISHIKAWA (Mr.) / Chiko TSUKAZAKI (Ms.): jointfr@jst.go.jp
- **ANR:**
 - Project officer – Elise Cahard (Dr.): elise.cahard@agencerecherche.fr
 - Programme manager – Olivier Spalla (Dr.): olivier.spalla@agencerecherche.fr

6. MONITORING AND REPORTING

6.1. COLLABORATIVE RESEARCH AGREEMENT

All project participants’ organizations should enter into a **Collaborative Research Agreement(s)** to specify at least how Intellectual Property Rights and non-disclosure agreements will be handled.

This Agreement **will need to be signed among the project participants, at the start of the project.**

ANR and JST will check the final draft of the agreement in advance. A copy of the signed agreement must be submitted to each agency.

6.2. REPORTS

On behalf of their participating teams, the principal investigator "PI" of each country shall submit the following reports on request by JST and/or ANR.

- **Reporting requirement for Japanese PIs** : Annual Research Plan and Progress Report

At the end of each fiscal year, the Japanese PIs shall promptly submit an annual research plan for the next year, a progress report on the status of research and a financial report on supported expenses. At the start of joint researches, they shall submit an annual research plan and overall research plan.

- **Reporting requirement for French PIs** : Progress Report

At the end of each year, the French PIs shall promptly submit a progress report on the status of research and a financial report on supported expenses.

- **Common Reports for Japanese and French PIs:**

In addition to reports composed separately by each country, the PIs of both countries shall also submit the two following reports **written in English** to JST and ANR respectively: a **Mid-term short Report** at the middle of the project, and a **Formal Final Report** at the end of the project shall be common reports.

In addition to the reports mentioned above, PIs shall submit reports on request.

6.3. PUBLICATION OF RESEARCH ACHIEVEMENT

If papers describing results of the project are presented to academic journals, societies etc., copies of such papers should be submitted with the final report.

Due acknowledgement of support received from JST and ANR should be made in any research publication resulting from this program.