2015

A BILATERAL CALL FOR PROPOSALS BETWEEN FRENCH NATIONAL RESEARCH AGENCY (ANR) AND JAPAN SCIENCE AND TECHNOLOGY AGENCY (JST)

IN THE FIELD OF

"MOLECULAR TECHNOLOGY"

2015 EDITION

Call for Proposals closing date:

May, 11th 2015

10H00 (CET)

17H00(Japan time)

IMPORTANT DATES

CLOSING OF THE CALL FOR PROPOSALS

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

ON 11/05/2015 AT 10H00 (CET)

ON 11/05/2015 AT 17H00 (JAPAN TIME)

The Japanese PI will also have to register their application on the online application system "e-Rad" (http://www.e-rad.go.jp) before the call for proposals closing deadline for Japanese partners:

It is important to read carefully the present document in its entirety, and the regulations concerning the conditions of allocation of JST and ANR funding before submitting a research project proposal.

CONTACTS

ANR Office :

Dr. Nazaré Pereira (project officer)
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JST Office :

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1. INTRODUCTION

This text presents the **second bilateral call** by the Japan Science and Technology Agency (JST) and the Agence Nationale de La Recherche (ANR) of France for collaborative projects in the field of "**Molecular Technology**". "Molecular Technology" is a new 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 support this objective, ANR and JST have agreed to implement a **second 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:

- **JST website**: http://www. jst.go.jp/sicp/announce_joint_anr_mt2.html
- **ANR website** : http://www.agence-nationale-recherche.fr/TMOL2015

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_e.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 health/medical materials. 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 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.
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 concepts and results from the molecular level to the mesoscopic and microscopic scale.

Target 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 treatments utilizing drug-delivery systems.

Some restrictions to this call are imposed:

- Projects dealing solely with theory and computational methods will not be eligible. Modelling and computational theories and results can be a large part of the project, but must be completed by experimental results using real molecules with real physical properties.
- Projects dealing with purely inorganic materials will not be eligible. New innovative molecular aspects must be involved.

- Projects dealing only with technological methods of processing and classical molecules will not be eligible. New innovative and/or designed molecules must 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 will typically consist of 2 to 4 (FR+JP) partners. Only transnational 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 of **36 months**.

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 may 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.

Typical average funding per project will be about 250.000 € per country for the 36 months duration of the project. The JST maximum funding per project will be 23 million Yen as direct cost (the overhead cost of 30% of direct cost is added separately) for 36 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 and final event. To meet this objective, applicants should therefore include in their proposals travel and accommodation costs for one such meeting in France and one meeting in Japan.

4. Evaluation Process, Selection Criteria 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. Proposals not meeting the formal criteria will be declined without further review.
- The ANR and JST scientific board will examine in **a first step** the relevance to the scope of **"Molecular Technology"** (with the restrictions) as defined in the section 2 "Scientific Scope"(p. 5).
- All collaborative proposals submitted, **eligible and declared relevant to the scientific scope** will be subject to peer review involving external referees. Applications will be ranked by a common international panel of experts.

4.1. ELIGIBILITY AND RECEIVABILITY CRITERIA

IMPORTANT: Applications not fulfilling the common or Japanese and/or French national receivability and eligibility criteria will not be considered for funding and will not be submitted for peer review.

- 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.
- **Project duration: 36 months**
- Applications should be complete (including technical, financial and administrative details), should not exceed the form requested and should comply with deadlines.

4.2. EVALUATION CRITERIA

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

- Scientific quality and innovativeness of the joint research plan;
- Methodology, feasibility and appropriateness of the joint research plan;
- Competence and expertise of the Japanese and French research teams and complementarities within the consortium (interdisciplinarity / inclusion of all necessary expertise)
- Appropriateness of resources and funding requested;
- Added value to be expected from the Japanese-French research collaboration; Balanced cooperation;
- Global impact: scientific, technical, economic, societal.

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 :

- JST : http://www.jst.go.jp/sicp/announce_joint_anr_mt2.html
- ANR : http://www.agence-nationale-recherche.fr/TMOL2015

5. Submission Processes and Structure of Joint Proposals

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 and on behalf of the consortium, the French PI shall submit the scientific proposal online on the ANR submission website.

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 May, 11th 10h00 (CEST) at ANR submission website :** http://www.agence-nationale-recherche.fr/TMOL2015
- **The Japanese PI** will also have to register their application on the online application system "e-Rad" (http://www.e-rad.go.jp) **by May, 11th 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:

- **Contact for JST:** Ms. Satoko Fujisawa / Dr. Hideo Nakajima : jointfr@jst.go.jp
- **Contact for ANR:**
  - Project officer – Dr. Nazaré Pereira: nazare.pereira@agencerecherche.fr
  - Programme manager – Dr. Olivier Spalla: olivier.spalla@agencerecherche.fr

6. MONITORING AND REPORTING

6.1. CONSORTIUM AGREEMENT

The Project participants' organizations should enter into a **Consortium Agreement** to specify at least how Intellectual Property Rights and non-disclosure agreements will be handled.

This Consortium Agreement **will need to be signed among the project participants, before the project starts and as a condition for the first release of funds by ANR**

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 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.

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

In addition to reports composed separately by each country, the PIs of both countries shall also submit common reports **written in English** to JST and ANR respectively.
Importantly, **a Formal Final Report** at the end of the project shall be a common report.

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.