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Japan Science and Technology Agency (JST)
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JST to jointly fund two research projects with the Deutsche Forschungsgemeinschaft (German Research Foundation) on the theme of Quantum Technologies under the ASPIRE Program

The Japan Science and Technology Agency (JST) has approved funding for two new research projects under the ASPIRE 2024 Joint Call “Japan-Germany Quantum Technologies,” implemented jointly by JST’s ASPIRE Program and the Deutsche Forschungsgemeinschaft (DFG). The ASPIRE program aims to strengthen and enhance Japan's scientific and technological capabilities by connecting top researchers in Japan to researchers in advanced STI countries and regions through international joint research and talent circulation. The program focuses on promoting cutting edge R&D, researcher mobility, and fostering the next generation of research leaders. This call aims to support internationally competitive collaborative research projects between Japan and Germany focusing on quantum technologies for ultrafast and massively parallel information processing, quantum communications, improved quantum measurement technology, and cutting-edge quantum sensors and materials.
JST and DFG received a total of 10 proposals for this call, and two projects were selected for funding after undergoing an assessment by a panel of experts in both Japan and Germany and a joint meeting between the funding agencies.
The research period will be up to five years.

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Appendix 1

List of the Funded Projects

	Project Title	Principal Investigator (Japan) Principal Investigator (Germany)	Affiliation	Research Outline
1	Diamond spin qubits for quantum applications (DIAMONDQTECH)	OHSHIMA Takeshi	Director, Takasaki Institute for Advanced Quantum Science, National Institutes for Quantum Science and Technology	Diamond spin qubits are attracting attention for being able to achieve a combination of high efficiency optical readouts and long coherence times even at room temperature. This project aims to combine efforts in material science and coherence control to advance diamond-based applications in quantum sensing and quantum communication. The joint Diamond Quantum Technology Research Center will tailor diamond materials to realise quantum sensing for biomedical applications. The project will also demonstrate elements of quantum networks based on optically active electron spins. The German research teams will contribute their expertise in coherent control of diamond spins, qubits, photonic integration and surface chemistry, while the Japanese research teams will bring their unique expertise in diamond synthesis and their experience in biomedical sensing applications and elements of quantum networks. Both teams will establish a structured PhD programme to enable young researchers to gain expertise in diamond quantum technologies.
		Fedor Jelezko	Professor, Institute of Quantum Optics, Ulm University	

	Project Title	Principal Investigator (Japan) Principal Investigator (Germany)	Affiliation	Research Outline
2	Quantum computing with neutral atoms	OHMORI Kenji	Professor and Chairman, Institute for Molecular Science, National Institutes of Natural Sciences	Quantum computing (QC) is a critical quantum technology expected to deliver significant scientific outputs in the short-term and large socio-economic impacts in the long term. This has recently led to the establishment of largescale, long-term, scientific programs for QC in various nations, among them Japan and Germany. While a variety of platforms are expected to realise QC, the neutral-atom (or cold-atom) platform has recently emerged as the leading candidate. This project aims at accelerating its development through the creation of a binational research network. The project has gathered recognized experts from both Japan and Germany, who are leading the national efforts in neutral-atom QC. The research has been organized to be collaborative and complimentary by leveraging the synergies identified between the researchers based in Japan and Germany, as well as between the theoretical and experimental teams. Intensive young researcher exchange activities are at the core of the program to promote the dissemination of best practices and know-how, inspire new ideas and techniques, and foster a highly connected generation of researchers.
		Christian Gross	Professor, Institute of Physics, University of Tübingen	

Appendix 2

Experts for the Evaluation

Name	Affiliation	Role
KAWAKAMI Norio	Deputy Program Director, Fundamental Quantum Science Program, RIKEN	Program Officer/Chair
AOKI Takao	Professor, Faculty of Science and Engineering, Waseda University	Advisor
INOUYE Shin	Professor, Graduate School of Science, Osaka Metropolitan University	Advisor
KATSUMOTO Shingo	Educational Lecturer, Tokyo City University	Advisor
Stephan Reitzenstein	Professor, Department of Solid State Physics, Technische Universität Berlin	Advisor
Luis Santos	Professor, Institute of Theoretical Physics, Leibniz University Hannover	Advisor

Annex

Evaluation Criteria

Criteria	Description of the criteria
I. Relevance and quality of the research content and plan	・Does the proposal adequately correspond to the purpose of the call? ・Are the proposed research activities of a high standard in the research field/area concerned? ・Are synergy effects expected from conducting international joint research as a part of this project?
II. Concreteness and feasibility of plans for promoting early career researchers and researcher mobility	・Are appropriate goals set for fostering early career researchers through international mobility activities? ・Are there plans to involve a sufficient number of early career researchers? ・Is an effective developing plan for the early career researchers considered and is the plan suitable for fostering the next generation of top researchers? ・Are the roles and length of stay for the outgoing researcher(s) clearly described and appropriate? Is the exchange plan feasible?
III. Concreteness and relevance of plans for building and expanding international networks	・Explaining the research strengths, the unique added value opportunities, complementary expertise or synergy in research efforts that bringing together the Japanese and Germany teams, provides to advance the research. ・Describing an appropriate balance of opportunities for the exchange of people (for example researchers and technicians), including the purpose of the exchanges and their potential to enhance the professional development of those involved. ・Has an appropriate, concrete, and feasible plan for how the Japanese and Germany teams and their research environments will realize the creation of a world-class international researcher network in the relevant research community.
IV. Relevance and diversity of the research system	・Does the research team have a well-balanced composition of expertise, given the objectives of the proposal?
V. Qualification of the PIs of the research team in Japan and Germany	・ Does the PI have sufficient qualifications, research environment, and resources (funds, human and material resources, etc.) to carry out the research activities in accordance with the proposal and purpose of this call?