



جمهوری اسلامی ایران
ریاست جمهوری

معاونت علمی، فناوری
و اقتصاد دانش بنیان

شماره: ۱۱/۱۱۴۶۰۷
تاریخ: ۱۴۰۲/۱۰/۰۶
پوست: دارد

بسمه تعالی

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 جناب آقای دکتر فرهاد دانشجو، رئیس محترم دانشگاه تربیت مدرس
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 جناب آقای دکتر حسین قناعتی، رئیس محترم دانشگاه علوم پزشکی تهران
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 جناب آقای دکتر احد ضابط، رئیس محترم دانشگاه فردوسی مشهد
 جناب آقای دکتر صفر نصراله زاده، رئیس محترم دانشگاه تبریز
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تهران: خیابان ملاصدرا، خیابان شیخ بهایی شمالی، کوچه لادن، پلاک ۲۰ صندوق پستی: ۱۵۶۵-۱۴۱۵۵ تلفن: ۸۳۵۳۰۰ و درنگار: ۸۳۵۳۹ www.isti.ir



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جناب آقای دکتر علیرضا زالی، رئیس محترم دانشگاه علوم پزشکی شهید بهشتی
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جناب آقای دکتر محمد حسین شفیعی، رئیس محترم دانشگاه صنعتی شیراز
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جناب آقای دکتر حسین بلندی، رئیس محترم دانشگاه جامع علمی-کاربردی
جناب آقای دکتر ابراهیم تقی زاده، رئیس محترم دانشگاه پیام نور

**موضوع: همکاری در اطلاع‌رسانی فراخوان پروژه تحقیقاتی مشترک و گزینش‌های بین‌المللی
معاونت علمی، فناوری و اقتصاد دانش بنیان**

با سلام و احترام

به استحضار می‌رساند مرکز توسعه فناوری‌های راهبردی معاونت علمی، فناوری و اقتصاد دانش بنیان ریاست جمهوری در حاشیه برگزاری نهمین نشست تبادل تجربیات علم و فناوری (STEP) و پنجمین آئین اعطای جایزه مصطفی (ص) که مهرماه سال جاری در اصفهان برگزار شد، با هدف تعامل بیشتر و تقویت همکاری بین دانشمندان و فعالین علم، فناوری و نوآوری، تثبیت مشارکت‌های بین موسسات ایرانی و سازمان‌های تاثیرگذار جهان و کمک به پیشرفت علم و فناوری در کشورهای مشارکت کننده، ۷ کمک هزینه برای پروژه‌های تحقیقاتی مشترک در حوزه‌های فناوری‌های زیستی، اطلاعات و ارتباطات، اپتیک و کوانتوم، مواد و ساخت پیشرفته، نانو و میکرو، پزشکی بازساختی و سلول‌های بنیادی و علوم شناختی بین محققان ایرانی و سایر کشورها در نظر گرفته است.

در این راستا علاقه‌مندان می‌توانند به منظور آشنایی با موضوعات گزینش‌ها، کسب اطلاعات بیشتر و ارسال پروپوزال، به وبگاه مرکز تعالی ابن سینا (ACE) (به عنوان واسطه اجرای همکاری‌های تحقیقاتی دوجانبه) به آدرس <https://isf-bmn.ir/ace/en/> مراجعه نمایند. همچنین به پیوست پوستر و اطلاعات تکمیلی درخصوص فراخوان حضورتان تقدیم می‌شود.



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با عنایت به مراتب فوق، لطفا دستور فرمائید اطلاع رسانی لازم در این خصوص صورت پذیرد. همچنین سرکار خانم قاسمی به شماره تماس ۰۳۱۳۴۷۱۷۷۰۱ (داخلی ۲) به منظور هماهنگی های آتی حضورتان معرفی می شوند.

پیشاپیش از همکاری جنابعالی، کمال تشکر را دارم.

شقایق حق جوی جوانمرد
رئیس مرکز نوپوه فناوری های راهبردی

رونوشت:

- جناب آقای دکتر ربانی، رئیس محترم بنیاد نخبگان استان اصفهان و مرکز تعالی ابن سینا، برای پیگیری



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Bilateral Research Collaboration 2024-2025

Call for Joint Research Project

1. Background

Through this grant, Strategic Technologies Development Center of Iran Vice-Presidency for Science, Technology and Knowledge-based Economy aims to fund joint research projects in 7 fields of Bio Technology, Connectivity and Communication Technologies, Optics and Quantum Technologies, Advanced Manufacturing and Material Technologies, Nano and Micro Technologies, Regenerative Medicine and Stem Cells Technologies, and Cognitive Technologies between researchers from Iran and other countries.

Avicenna Center of Excellence, hereafter referred to as ACE, is the broker for implementing the bilateral research collaboration.

2. Research Themes

Bio Technology

Through this grant, **Biotechnology Development Council (BIODC)** aims to fund a joint research project in the field of "Regenerative Medicine and ATMP Research: Bridging Innovations".

The main focus of this program is to develop novel technologies to treat various diseases, using nucleic acid tools. The current program aims to consolidate existing partnerships of institutions in Iran and influential organizations all over the world, which will be mutually beneficial and contribute to the advancement of science and technology in the involved countries. Join us for this collaborative research grant and play your role as a part of the future of healthcare.

Goals and objectives

This program intends to foster valuable collaborations between scientists from Iran and other countries with a main focus on innovative technologies based on nucleic acids to treat disease. Research proposals on gene editing, oligonucleotide therapeutics, genetic engineering, and other nucleic acid-based therapeutic approaches are welcomed.

➤ Research themes in **Bio Technology** include but not limited to:

- 1- Latest genome editing technologies, *e.g.*, CRISPR/Cas and prime editing systems - RNAi therapeutics
- 2- Splicing modulation for treating genetic diseases

- 3- Antisense-oligonucleotide therapeutics
- 4- Therapies based on genetically-engineered cells and stem cells
- 5- Enzymatic DNA synthesis
- 6- Enzymatic synthesis of short therapeutic RNAs
- 7- RNA editing and therapeutics

Advanced Materials and Manufacturing

Through this grant, **Advanced Materials and Manufacturing Council (AMMC)** aims to fund a joint research project in the field of "Device Design and Development for Integrated Membranes".

The main focus of this program is to design integrated membrane devices (IMDs) for research studies and application developments. The current program aims to consolidate existing partnerships of institutions in Iran and influential organizations all over the world, which will be mutually beneficial and contribute to the advancement of science and technology in the involved countries. Join us for this collaborative research grant and play your role as a part of the future of material development.

Goals and objectives

The primary objective of this program is to foster and enhance interdisciplinary collaboration between Iranian and global researchers in the field of water treatment membrane architectures. It also aims to simplify the manufacturing and development processes in thin film deposition methods in IMDs for Islamic nations. Research proposals on the conceptualization and realization of the layer-by-layer deposition methods, multifunctional membranes, copy from integrated circuit ULSI design themes adopting synthesis routes from integrated circuits multistep continuous fabrication methods are welcomed.

➤ Research themes in **Advanced Materials and Manufacturing** include but not limited to:

- 1- Development of IMDs for specific applications:
 - Sea water desalination
 - Treatment of waste water
 - In-house or local municipalities water treatment sites
- 2- The most versatile IMD fabrication routes:
 - Deposition systems
 - Wet chemical-based thin film deposition methods
- 3- Designing sensor and instruments as embedded in IMD's architectures

Cognitive Science and Technology Council (CSTC)

Through this grant, **Cognitive Science and Technology Council (CSTC)** aims to fund a joint research project in the field of "Design and Development of Brain-Computer Interfaces".

The focus of this program is to design Brain-Computer Interfaces (BCI) for research studies and applications developments. The current program aims to consolidate existing

partnerships of institutions in Iran and influential organizations all over the world, which will be mutually beneficial and contribute to the advancement of science and technology in the involved countries. Join us for this collaborative research grant and play your role as a part of the future of cognitive science.

Goals and objectives

The primary objective of this program is to foster and enhance interdisciplinary collaboration among Iranian and global researchers in the field of BCI studies and applications. It also aims to facilitate knowledge transfer and develop cognitive services and tools for other nations. Research proposals on the design and implementation of neural recording and stimulation tools, circuits, and systems, wireless bidirectional communication systems, signal processing circuits and systems, as well as the development of signal processing algorithms for BCI systems are welcomed.

➤ Research themes in **Cognitive Science and Technology** include but not limited to:

- 1- Development of BCIs for specific applications:
 - Cognitive Rehabilitation
 - Treatment of cognitive diseases/disorders
 - Wetware and animal brain control
- 2- Provision of general cognitive services:
 - Cognitive enhancement
 - Designing neural prostheses
- 3- Designing systems as general tools for conducting research in cognitive science and neuroscience fields

Connectivity and Communications Technology Development

Through this grant, **Connectivity and Communications Technology Development Council (CCTDC)** aims to fund a joint research project in the field of "Design and Development of Open Radio Access Network".

The focus of this program is to design and develop Open Radio Access Network (ORAN) components to be used in already-established 4G LTE networks and to be planned for applications in 5G infrastructure and beyond. The current program aims to consolidate existing partnerships of institutions in Iran and influential organizations all over the world, which will be mutually beneficial and contribute to the advancement of science and technology in the involved countries. Join us for this collaborative research grant and play your role as a part of the future of communication technology development.

Goals and objectives

The primary objective of this program is to foster and enhance interdisciplinary collaboration among Iranian and global researchers in the field of ORAN studies and applications. It also aims to facilitate knowledge transfer and the development of services and tools in the field of advanced connectivity and communications for other nations. Research proposals on the

design and implementation of open radio unit (ORU), open central unit (OCU), and open distributed unit (ODU) are welcomed.

- Research themes in **Connectivity and Communications Technology Development** include but not limited to:
- 1- Network automation and performance prediction software
 - 2- Dynamic cloud-based telecom radio resource allocation algorithms
 - 3- Energy-efficient cloudlets for ORAN
 - 4- RAN intelligence in 5G NR and beyond by accelerating AI/ML framework and logic design
 - 5- Flexible, efficient, and high-performance 5G NR (ORAN) elements (Flex-5G) by processing intensive assets (Chip sets and FPGAs)
 - 6- Coordinated multipoint ORAN capabilities
 - 7- Development of flex-ORAN for specific applications
 - 8- Machine learning-based xApps for ORAN
 - 9- ORAN security

Moreover, technical developments in the radio access networks (RAN) such as active antenna unit (AAU), remote radio unit (RRU), as well as base-band unit (BBU) are welcomed.

Nano and Micro Technologies

Through this grant, **Iran Nanotechnology Initiative Council (INIC)** aims to fund a joint research project in the field of "MOF-based nanocomposite membrane adsorbents for atmospheric water harvesting".

The focus of this program is to design and develop novel nanocomposite membranes to adsorb water from air. The current program aims to consolidate existing partnerships of institutions in Iran and influential organizations all over the world, which will be mutually beneficial and contribute to the advancement of science and technology in the involved countries. Join us for this collaborative research grant and play your role as a part of the future of Nanotechnology.

Goals and objectives

The main objective of this program is to promote and encourage researchers in the fields of MOF-based nanocomposite membranes, with the aim of improving collaborations among Iranian and global researchers. The amount of water absorption from the air should be maximum according to the amount of MOF used.

- Research themes in **Nano and Micro Technologies** include but not limited to:

- 1- MOF-coated Membranes
- 2- MOF-based mixed matrix membranes

Optics and Quantum Technologies

Through this grant, **Council for Development of Optics and Quantum Technologies** aims to fund a joint research project in the field of "Implementation of Novel Quantum Algorithms on real Quantum Computers for Optimization problems".

The current program aims to consolidate existing partnerships of institutions in Iran and influential organizations all over the world, which will be mutually beneficial and contribute to the advancement of science and technology in the involved countries. Join us for this collaborative research grant and play your role as a part of the future of quantum technology.

Goals and objectives

The main objective of this program is to promote and encourage researchers in the fields of quantum computer programming, with the aim of improving collaborations among Iranian and global researchers. Furthermore, we are interested in creating opportunities for Iranian researchers to harness the power of quantum computers developed worldwide so far. Consequently, proposals on quantum programming, quantum machine learning, quantum algorithm design, and related subjects are welcomed.

➤ Research themes in **Optics and Quantum Technologies** include but not limited to:

- 1- The development and implantation of novel quantum algorithms for real-world problems such as:
 - Drug discovery
 - Finance
 - New material discovery
- 2- Development and implementation of quantum machine learning for cutting-edge problems

Regenerative Medicine and Stem Cell Technologies

Through this grant, **Council for Regenerative Medicine and Stem Cell Technologies (CRMT)** aims to fund a joint research project in the field of "Regenerative Medicine and ATMP Research: Bridging Innovations".

In today's healthcare landscape, translational studies in regenerative medicine are at the forefront of innovation. This initiative aims to bridge the gap between laboratory discoveries and real-world clinical applications, unlocking the potential of regenerative therapies to transform healthcare globally. The current program aims to consolidate existing partnerships of institutions in Iran and influential organizations all over the world, which will be mutually beneficial and contribute to the advancement of science and technology in the involved

countries. Join us for this collaborative research grant and play your role as a part of the future of healthcare.

Goals and objectives

1. **Advance Translational Research:** Facilitate the translation of cutting-edge regenerative medicine discoveries and Advanced Therapy Medicinal Products (ATMPs) into clinically applicable therapies and treatments.
2. **Promote Interdisciplinary Collaboration:** Foster collaboration among scientists, clinicians, engineers, and biotechnologists to drive innovation in regenerative medicine and ATMP development.
3. **Enhance Global Health Impact:** Develop regenerative therapies and ATMPs that address pressing global health challenges, such as organ transplantation shortages, degenerative diseases, and tissue regeneration.
4. **Support Ethical and Regulatory Compliance:** Ensure that research adheres to the highest ethical standards and regulatory requirements to guarantee the safety and efficacy of regenerative medicine interventions and ATMPs.
5. **Train the Next Generation:** Provide training and mentorship opportunities for emerging researchers in the field of regenerative medicine and ATMPs, nurturing future leaders and innovators.

➤ Research themes in **Regenerative Medicine and Stem Cell Technologies** include but not limited to:

1. **Stem Cell Biology and Engineering:** Explore novel techniques for the isolation, expansion, and differentiation of stem cells and their derivatives for regenerative applications and ATMP development.
2. **Immunomodulation and Immunotherapy:** Study methods to modulate the immune response for improved acceptance of transplanted tissues, ATMP safety, and the development of immune-based regenerative therapies involving stem cell derivatives.
3. **Tissue Engineering and Biomaterials:** Develop advanced biomaterials and tissue engineering strategies to promote organ and tissue regeneration, including the use of stem cell derivatives.
4. **Gene Editing and Cellular Reprogramming:** Investigate the use of CRISPR-Cas9 and other gene-editing technologies to enhance the regenerative potential of cells and their derivatives, contributing to the development of ATMPs.
5. **Disease Modelling and Drug Screening:** Create disease models using patient-derived cells and their derivatives for better understanding of disease mechanisms, drug development, and the assessment of ATMP efficacy.
6. **Clinical Translation and Commercialization:** Focus on the clinical translation of regenerative therapies, ATMPs, and their derivatives, considering scalability, safety, and commercial viability.

3. Grant provision requirements

- At least two principal investigators (PIs), one from Iran and one from another country, must participate in the project.
- During the implementation of the project, at least one of the PIs must conduct research and development for at least one month at the other party's institution.

4. Applicants

Applicants must have scientific and technical background related to the project and affiliation with educational/research centers or knowledge-based companies/SMEs:

- Applicants who define the project with the Mustafa^(pbuh) Prize Laureates or have a background of cooperation with them, as well as the winners of KANS Scientific Competition, benefit from an extra score in the evaluation process to receive the grant;
- Applicants with partners from Islamic countries (OIC member states), benefit from an extra score in the evaluation process to receive the grant;
- Applicants with a specific research group, including scientists affiliated with a university or a public research institute from Iran or the partner country, benefit from an extra score in the evaluation process to receive the grant.
- Research groups using this grant are encouraged to collaborate closely with each other beyond project-related activities and define other areas for joint work.
- Applicants who choose their co-PIs from the following institutions benefit from an extra score in the evaluation process to receive the grant:
 - Université de Sousse, Tunisia
 - Senegalese National Academy of Sciences and Technics, Senegal
 - National University of Sciences & Technology, Pakistan
 - COMSTECH, Pakistan
 - Bangladesh University of Health Sciences, Bangladesh
 - Khazar University, Azerbaijan
 - Maghtech Network, France

More information about the above institutions is available in:

<https://isf-bmn.ir/ace/en/international-mous/>

5. Partnerships

The mutual commitment of the partners in both countries will serve as an indicator of the strength of the research project. This includes the commitment of in-kind resources¹ by all partners. The project output belongs to the participating researchers and related council.

6. Funding and budgeting

- Up to 10,000 USD seed money grant is allocated to Iranian partner.
- Partners from other countries are responsible for financing up to 10,000 USD including in-kind resources of the project, hosting or travel costs, etc.
- Each party shall be responsible for meeting the travel, subsistence, and accommodation costs of its own research group members in visits associated with this collaboration.
- The grant will be disbursed in two instalments: 80% after signing the grant contract and 20% after approval of the final report and financial statement.
- A detailed budget is required when submitting the project proposal. Budgeted expenses must be justified and related to the proposed research activities.
- A contribution of each partner is expected and must be made explicit in cash and/or in-kind.

7. Application

Applications should be submitted to the Avicenna Center of Excellence (ACE):

<https://isf-bmn.ir/ace/en/apply-for-international-research-grant/>

8. Timeline

- | | |
|------------------------------------|------------------|
| • Application submission deadline: | 31 January 2024 |
| • Primary decision: | 29 February 2024 |
| • Revision and resubmit | 31 March 2024 |
| • Notification: | 14 April 2024 |
| • Project commence date: | 30 June 2024 |
| • Project duration: | Up to 12 months |

9. Evaluation and selection

Applications will be assessed by an independent evaluation panel and notified by ACE. The evaluation will be based on the following criteria (not listed in order of priority):

- Consolidation of an existing partnership
- Scientific merit or impact of the anticipated outcomes
- Potential for long-term collaboration and follow-up activities
- Originality and feasibility of the proposed activity
- Expertise and complementarities of the partner institutes and the applicants (and their research groups)

¹ In-kind resources are any contributions that do not involve financial support, such as access to computers, software, office space, and/or equipment

- Contributions by all involved partners, including funding and in-kind contributions

10. Reporting

The Iranian applicant is responsible for administrating the funds and for reporting. S/he must submit a final scientific report as well as a financial statement not later than one month after the end of the project.

11. Contact

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