



1398

1399

1397

1400

1401

6th
Young
Scientists
Festival
FEB 2023

ششمین
جشنواره
اندیشمندان
و دانشمندان
جهان
اسفند ماه ۱۴۰۱

مهلت ارسال ایده از ۱ مرداد ماه تا ۱ مهرماه
Call Is Open From 23 Jul To 23 Sep
www.ysf-persia.com

[illegible]



National Headquarters of
Research and Technology Week



Supporter Foundation
University of Tehran



Faculty of Science
University of Tehran



Islamic Republic of Iran
Ministry of Science and Technology
Office of Innovation and
Commercialization



Islamic Republic of Iran
Ministry of Science and Technology
Office of Innovation and
Commercialization



Jamali Science and Technology
Foundation



Young
Scientists Festival

Grants of the 6th Young Scientists Festival

Start-up Section

4 Project Grants
20% higher for the teams
with international members

1 2,500,000,000
Rials
1st Team

2 1,500,000,000
Rials
2nd Team

3 1,250,000,000
Rials
3rd Team

4 1,000,000,000
Rials
4th Team



Idea Section

12 Project Grants
20% higher for the teams
with international members

600,000,000 Rials

2 Research Grant

700,000,000 Rials

The Sixth Young Scientists Festival

The Young Scientists Festival has been holding since 2017 to contribute the conversion the new ideas into business, supporting talents and strengthen the innovational and entrepreneurial spirit in young scientists working in basic science fields. In order to support the promotion of applied science through encouraging the participation of young people in application-oriented research activities, the Sixth Young Scientists Festival coinciding with the "International Year of Basic Sciences for Sustainable Development" was held in March 2022. Young Scientists Festival which is established by the non-governmental foundation of "Jamili Science and Technology Foundation" tries to provide an opportunity for young researchers to work as a team with the aim of generating applications from complex scientific concepts.



342 ideas submitted to the 6th festival in the two sections of ideators and start-up businesses. In the ideators section, 12 ideas were selected as finalists and 41 ideas were selected as top proposals, and in start-up businesses section, 4 teams were selected as finalists and 11 teams were selected as top applications. Moreover, two young professors in the fields of chemistry and biology were honored and received research grants from the festival.

As usual in every Young Scientists Festival, the selected teams benefit from the educational support for the product development aimed at the commercialization of the idea.

The total support awards of the sixth edition of this scientific event in all three sections are worth 29,700,000,000 Rls.



March 2023
The Sixth Young Scientists Festival

Eng. Ebrahim Jamili | Chairman of the Board of Trustees of Jamili Science and Technology Foundation
President of Young Scientists Festival Policy-Making Council

The impact of basic sciences in people's daily life



March 2023
The Sixth Young Scientists Festival

Human tend to invent new methods and approaches for exploring their environment to advance science. In fact, basic science is the basis of all today's progress in technology scientific, social, industrial and economic fields. Science-based technologies has always been attracting the attention of individuals and society, and all of people follow basic scientific events.

Confronting issues such as unemployment, living costs and cultural issues can be considered as factors in reduction of popularity to study in basic sciences in our country.

Assigning the year 2022 as the international year of basic sciences for sustainable development, was an appropriate opportunity to attract the attention of policy makers in the field of science and technology to the importance of basic sciences. Thus, support of the basic science can provide the basis for the development of sciences-based technologies in the country by presenting possible solutions.

Positive vision is one of the variables that affect

the quality of life and vitality of the people of the society, especially the young generation. When the hope for the future is raised in university students - the future builders of the society - its importance doubles, because the youth are the most precious resources of the society, which are at the peak of creativity, motivation, energy and dynamism.

Following the aims of International Year of Basic Sciences for Sustainable Development, Young Scientists Festival supported the science-based projects in cooperation with the national office of (Basic Science year located at the Shahid Beheshti University).

The YSF society awareness activities can emphasize the role of basic sciences in people's lives.

Moreover, artificial intelligence (AI) was considered as an additional category of support in the sixth Young Scientists Festival, since artificial intelligence has been able to create a huge transformation in all industries.

Prof. Mahmoud Kamarei | Chairman of the Board of Supporters Foundation of University of Tehran
President of Young Scientists Festival



Educating and training of the young generation *with the approach of nurturing, creativity and entrepreneurial personality traits*



March 2023
The Sixth Young Scientists Festival

One of the most important missions of the universities are educating young generation with the approach of nurturing the creativity, and entrepreneurial personality traits. In today's world, knowledge and science play a decisive role in the comprehensive development of countries and increasing the quality of people's lives in society. In this path with all ups and downs, organizations which consider themselves responsible in supporting the knowledge, university, and scientists have a great dignity as they use their resources in a very fundamental way.

It is obvious that the main assets of each country are its human source and by supporting the universities as a key player in this field, we can help in educating creative individuals. By encouraging the problem-solving insights in basic science students, other than the progress of science, the value creation in the society can be expected. Basic scientists should carefully examine the needs of the society, develop working groups with entrepreneurial insight and try to identify market opportunities and threats to implement their knowledge to application.

The Young Scientists Festival, which is now in

its sixth round is held with the support of the private sector of Jamili Science and Technology Foundation which has diverse types of support from its establishment aimed at the sustainable development of the society. Jamili foundation has focused on supporting the education of young generation and encouraging innovation, which is considered a vital step in promoting the culture of supporting scientific promotion of the country. In this regard, the focus of the Young Scientists Festival on basic sciences as the basis of sustainable development is an expression of a new attitude in the current atmosphere of Iran which considers basic sciences a critical foundation for scientific developments and advances.

In addition, we are thankful to Eng. Ebrahim Jamili, Chairman of the Board of Trustees of the Jamili Science and Technology Foundation, for establishing this valuable initiative to support young ideators and scientific startups of the country. We will witness this foundation's progress in the coming years in supporting the applied science which is a valuable model for other sectors who are interested in the development of our country.



The International Year of Basic Sciences for Sustainable Development

March 2023
The Sixth Young Scientists Festival



Whenever the world faces a new crisis or challenge; the United Nations names the year based on the challenge that the world is confronting. After assigning the year in the United Nations General Assembly, the agencies of the organization such as UNESCO, UNICEF, FAO and other leading unions and organizations in global affairs try to raise public awareness and implement the necessary measures and start working on it. In fact, the United Nations hereby asks scientists and students, local authorities and political or social leaders and everyone to find solutions to face the upcoming challenge.

The United Nations has proclaimed 2021 as the "International Year of Creative Economy for Sustainable Development" and 2022 as the "International Year of Basic Sciences for Sustainable Development"; but what is "sustainable development" that has drawn the United Nations attention to itself?

Sustainable development means that while we are meeting the human needs by economic, social and environmental development, we should not jeopardize the ability of future generations to meet their needs. The first goal of sustainable development is to end all forms of poverty, so that it invites all countries to improve their own well-being on the one hand, and to protect the planet on the other hand.

Fighting against poverty and hunger everywhere in the world, clean water and sanitation, good health and well-being for all the planet inhabitants, quality education for everybody and gender equality are among the most important goals of sustainable development.

But what is the role of basic sciences in sustainable development? To answer this question, first it's better to have a clear perception of basic sciences. Basic science or fundamental science, as its name suggests, aims to answer the fundamental questions of mankind. Basic sciences include mathematics, physics, chemistry, biology and geology. These sciences help us to predict natural phenomena through observation, scientific methods, experiments by designing the scientific hypotheses and theories, and also to have a better perception of our environment and its governing laws. In this way, Basic science is the underlying foundation of other sciences, and therefore it can be called true science. The basic sciences are the prerequisites in the optimal use of the environment, and also progress and development in the different fields such as agriculture, industry, medicine, economy and communication. What's more, this is the basic science that helps us in facing the crises and vital challenges of the present age such as global warming, air pollution, extinction of rare species, destruction of the ozone layer and reduction of the natural resources.

Visioneering a global perspective for the Young Scientists Festival

In the International Year of Basic Sciences for Sustainable Development



March 2023
The Sixth Young Scientists Festival



The Young Scientists Festival, which is focusing on basic sciences was held at the national level until its sixth year. Young Scientists Festival initiated its activities on a global scale by establishing the international department last year with the support of universities and scientific organizations of the country.

The need to support basic sciences -as the basis of other sciences- inspired the Young Scientists Festival to support knowledge worker of basic scientists working on applied projects. By statics YSF is envisioned as the most important supporter of ideators and start-ups in the fields of basic science from non-governmental sector of the country. By internationalizing the festival, both non-Iranian students living in the country, as well as Iranian experts living abroad can in person or remotely join the festival teams.

Among the international activities of last year of YSF, networking with scientific organization or festivals

of neighboring countries (including Pakistan, Turkey, China and Kazakhstan) can be mentioned. As the only Non-Governmental Foundation (NGO) focused on basic sciences in the country, YSF signing the Memorandum of Understanding (MoU) with universities and scientific festivals or international scientific organizations, including the Eco Science Foundation (ECOSF). Another millstone in the festival international activity is establishing the UNESCO Basic Sciences and Technology Club (BSTC UNESCO). Moreover, preparing the database of international referees for the evaluation of the festival application was another task of the YFS international department.

Considering the importance of the concept of sustainable development and the requirement to link the basic knowledge to technology in our intelligent world, the Young Scientists Festival invites everyone to participate in creating a world formed base on basic sciences.



Prof. Seyed Komail Tayebi | President ECO Science Foundation

Young Scientists Festival



It gives me an immense pleasure to congratulate all the scientific community on the occasion of Young Scientists Festival. Scientists have always played a critical role in the development of this world, and their innovations and inventions have led to significant technological advancements, which have continuously improved our lives.

Today, Economic Cooperation Organization (ECO) region faces enormous challenges, and it will be extremely difficult for us to improve our lives, feed our growing populations, protect our children and environment, if we cannot invest in our young scientists to find efficient, cheaper and smarter ways of manufacturing goods and commercialization.

I count myself, as a President ECO Science Foundation, a strong proponent of science education for youth. Today's child is tomorrow's scientist and entrepreneur if we provide them

with the opportunity to discover and inculcate the concept of inquiry and questioning in them. While planning for the future in this constantly changing world, scientists and entrepreneurs will be at the forefront of most of the challenges in responding to our global future needs.

I truly believe our young scientists

and entrepreneurs have all the potential to create economic and business opportunity to maintain prosperity of ECO region in today's competitive global economy. Our future economic standing and development of our society solely depends on our ability to nurture our future generation of scientists. Therefore, we must inspire our youth to embark on a career in science, technology and entrepreneurship to effectively meet the challenges of the future. At the end, I congratulate the leadership of Young Scientist Festival and its entire team for providing an opportunity to all young researchers in best possible way.

Prof. Dr. Manzoor Hussain Soomro

Member of International Council of the Young Scientists Festival (YSF) Iran
Advisor of Economic Cooperation Organization Science Foundation (ECOSF)
Honorary Professor of Beijing Technology and Business University (BTBU), Beijing China

Clean Energy Production is Critical for Sustainable Development

Clean energy is critical for achieving sustainable development and is at the forefront of the global agenda. Technology plays a key role in promoting sustainability in many areas, including energy and sustainable industrial development. Therefore, a range of challenges in obtaining, adapting and effectively using industrial technologies and building productive capacity



of the South demands prompt solution.

I believe, it is very timely to discuss low carbon industrial development, as aggressive adoption of such technologies will be an essential prerequisite for the countries in the South including Iran and the surrounding countries, to

collectively move closer to the more ambitious target of reducing the GHG emissions



and containing the increase in global temperatures. The impacts of climate change that are occurring with increasing severity and frequency are well acknowledged around the world. In fact, all nations are vulnerable, but the developing countries are even more vulnerable and less resilient with limited resources for both mitigation and adaptation.

in any country requires that capacities of the younger generations are well developed in; science, engineering, technology and innovation (SETI), which play a critical role in overall development and economic progress of nations. To ensure SETI capabilities, the quality education especially in the basic sciences including; science, technology, engineering



This situation calls for an urgent need for us to make more investments in technologies and processes to promote climate-smart solutions for our planet.

Successful transition towards low carbon development would heavily depend on fostering public-private partnerships that can accelerate deployment of technologies, promoting research and development, entrepreneurship and human resource skills development. The critical challenge for us in the region is to enable delivery of our national development visions and goals through low-carbon, climate-resilient or climate-compatible development plans and strategies, whereby the role of science, engineering, technology and innovation (SETI) is overarching and gigantic. It may however, be realized that for a sustainable supply of capable human resource

and mathematics (STEM) disciplines at schools is a must. And STEM education using inquiry-based science education (IBSE) pedagogy, has been proven to be the best worldwide. The OECD countries have emphasized on greater investment in STEM education using IBSE methodology; whereby the focus is on teacher education as the school teachers are the key players in training and grooming the youth and the young scientists.

Engaging youth in healthy training and maker camps and innovative projects competitions, would add value to the capacities of future STEM workforce for sustainable development. I very much hope that YSF will focus on maker camps and youth innovation linked with entrepreneurship for sustainable future socioeconomic development of the countries in the region.



UNESCO Basic Sciences and Technology Club

As an international institution, UNESCO Basic Sciences and Technology Club has started its activity by promoting the role of basic science, technology and creativity in sustainable development. The Basic Sciences and Technology UNESCO club was established in the summer of 2022 with the support of the Jamili Science and Technology Foundation, and with the cooperation of the Young Scientists

Festival, and under the audition of Iranian National Commission for UNESCO and the World Federation of UNESCO Clubs.

This club support the creation of new technologies through basic sciences by strengthening the knowledge-based approach in industries and the product-oriented approach in basic science research centers.



The UNESCO Basic Sciences and Technology Club's Objectives

The activities of the UNESCO Basic Sciences and Technology Club are as follows:

- Identifying and introducing the innovative entrepreneurship capacities of basic sciences researches
- Assisting in strengthen the two-way and constructive interaction of basic sciences research centers with technology-oriented centers and accelerators at the national and transnational level.
- Improving the level of public awareness on the importance of basic sciences research as the root of all advances in medicine and industry for human health and well-being
- Familiarizing individuals with the importance of performing knowledge-based activities as well as contribution to the strengthening basic science education
- Supporting the participation of women in the development of science into business in society

Scope of the UNESCO

Basic Sciences and Technology Club

The UNESCO Basic Sciences and Technology Club works in the following fields to promote the transformation of knowledge into technology and to solve issues related to sustainable development:

- Raising the awareness of the society on the importance of supporting research in the field of basic sciences (mathematics, physics, chemistry, geology, biology)
- Familiarizing the public with the role of data analysis and artificial intelligence (AI) in supporting basic sciences research and the development of new technologies
- Introducing the latest achievements of the developed technologies from basic sciences
- Assisting in interaction creation between basic sciences researchers and entrepreneurs and familiarizing them with the needs of national and international industries.

UNESCO Basic Sciences and Technology Club activities standpoints and approaches:

- Supporting the innovative and technological approach in the fields of basic sciences
- Encouraging the creation of commercial and applied opportunities from practical activities in the field of basic sciences
- Assisting the young basic scientists to develop their knowledge of commercialization of idea in related fields of basic sciences
- Setting up meetings, seminars and festivals to promote innovative and applied projects in basic sciences.



Speeches at the Closing Ceremony of the Sixth Young Scientists Festival



Prof. Dato Lee Yee Cheong

The president of the belt and road international science education consortium

In fact, the whole world, especially developing countries, is focused on achieving the United Nations Sustainable Development Goals by 2030. In my opinion, achieving the 17 Sustainable Development Goals is too comprehensive for developing countries, as they require more resources than the developed countries process. In my opinion, developing countries should focus their attention to achieve the first 5 goals of sustainable development, i.e., absence of poverty, absence of hunger, health, quality education and gender equality.



Prof. Seyed Komail Tayebi

President of eco science foundation

On behalf of ECO Science Foundation, I highly appreciate an increase the Jamili Science and Technology Foundation for organizing this 6th Young Scientists Festival and providing us this opportunity and bringing us altogether to appreciate the role of young scientists in the development of the region. Dear colleagues, as you all know science and technology are central to our world today and they play a crucial role in driving innovation and entrepreneurship, advancing our knowledge and improving our lives. We are responsible for educating and training the young generations to be simultaneously educated researchers, scholars as well as entrepreneurs.



Dr. Sabieh Anwar

The General Secretary of the Khwarizmi Science Society

I think science and Technology and awareness in these fields is a great vehicle for change, this is a real revolution that starts from inside you and then goes to society as a whole because it helps you believe in yourself, it helps you indigenize, it helps you build your own products, and the process of this building and creating, it helps you discover your inside and I think the "Young Scientists Festival" is actually aimed at this process of self-discovery.



Ms. Xin Bing

The director general of CYSCC

Human beings' grasp the rules of the world begins with basic scientific research and it's better to mention that basic research is a prerequisite for sustainable development. Children and Youth Science Center of China Association of Science and Technology has always adhered to the initiative of selecting and cultivating basic research talents. At the same time, I would like to take this opportunity to express my heartfelt congratulations to the Jamili Science and Technology Foundation for joining the Belt and Road International Science Education Consortium.