



The unveiling of a knowledge-based product by researchers at the Science and Technology Park of Amirkabir University

The unveiling of a knowledge-based product developed by researchers at the Science and Technology Park of Amirkabir University was attended by the Minister of Science, Research, and Technology.

According to Amirkabir: A meeting of the heads of science and technology parks with the presence of the Minister of Science, Research, and Technology and 54 heads of science and technology parks was held in the martyrs' hall of the Ministry of Science, and on the sidelines of this meeting, the product "blood clotting powder" developed by researchers at the Science and Technology Park of Amirkabir University was unveiled. The product produced by the knowledge-based company Taba Zist Polymer (Trita) located in the Science and Technology Park of Amirkabir University is called "blood clotting powder." So far, 25 million of this



product was imported into the country annually. This product is only produced in the United States, and by producing it, 5 million in foreign currency is prevented from leaving the

country. The price of the Iranian product is 230,000 tomans, and the price of the foreign sample is 425,000 tomans or \$8.50. The demand for this product in the country is 3.5 million tomans

per year, and the sales of this product have been 2.5 billion tomans since the beginning of the current year. This company has spent 20 billion tomans on the production line.

The first joint brainstorming session of female professors at Amirkabir University of Technology was held.

The head of the Leadership Office at Amirkabir University emphasized that women's issues should be addressed by women and stated: "We are holding a series of joint brainstorming sessions for female professors to address the issues in this area."

Hojjat al-Islam Rouhallah Rajabi, in the first joint brainstorming session of female professors at Amirkabir University, considered Hazrat Fatemeh (SA) as a global role model and added: "From the beginning, one of the issues of the Islamic Revolution has been the issue of women, because the pure thought of this revolution believes that women should be liberated from all historical constraints and oppressions imposed by tyranny and materialistic ideologies, so that they can grow in real areas, including scientific and spiritual growth."

He expressed that the Islamic Revolution has something to say in this

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regard, and stated: "We want the voice of the Islamic Revolution to be heard. According to the statements of the Supreme Leader regarding the issue of women, we have objections to the West, and it is the West that should defend itself, as it has oppressed women and hindered their growth in society."

The head of the Leadership Office of the Supreme Leader's Representative at Amirkabir University, referring to the emphasis of the Supreme Leader that women's issues should be addressed by women, recalled: "The issues related to demands, their scientific work, and problem-solving have become areas

where educated women are pioneers."

Rajabi added, "They also announced that even in some jurisprudential areas, knowledgeable women can extract the main opinions with scientific theories and present them to men."

The head of the university announced; Amirkabir University of Technology's plan to allocate a space for female students to rest in the faculties.

The head of Amirkabir University of Technology announced the university's plan to allocate a space for female students to rest in all faculties and said: "I welcome all proposals from women in the welfare field and will consider them."

Dr. Alireza Rahaei, in the first joint brainstorming session of female professors at Amirkabir University, congratulated the birth anniversary of Hazrat Fatemeh (SA) and Women's Day, and referred to the position of women and the special attention to this issue after the victory of the Islamic Revolution, saying: "Perhaps a sign of this special attention to women is that a

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large number of Iranian women have been present in various scientific fields with titles such as researcher, scientist, artist, etc. after the revolution, and this volume of Iranian women's presence in various sectors around the world is unparalleled."

The head of Amirkabir University of Technology, stating that 50% of the admissions in some fields of this university are women, pointed out: "In 1994, there was a discussion about the increase in the number of female students at the university. This was at a time when we did not even have female students in some fields, or in some fields, one or two of the admissions were female. But when the trend of women entering the university increased, we needed to have female colleagues, female faculty members, in proportion to this increasing number of female students."

Rahaei also stated about supplementary insurance, marriage, and the rights of the children of female university staff: "This issue will be put on the agenda of the university's board of trustees for review. Also, if any proposals are made in the public welfare facilities for women, we will follow up on them."

The head of Amirkabir University of Technology emphasized: "In the field of welfare facilities, we plan to consider a space for female students to rest in the faculties, while sports competitions for



female students are also among our programs in line with our attention to women, which we implement diligently."

Dr. Mehrdad Saviz, the deputy of cultural and student affairs of the university, expressed the importance of the cultural issue and the sincere and effective role of female professors as teachers.

In this session, some female professors discussed their perspectives and problems in the field of female professors and students at the university.

Also, in this session, Dr. Izadian, the head of the university's counseling center, discussed some issues, damages, and problems of the university students with the professors.

At the end of the session, a certificate of appreciation and a gift were presented to the professors on behalf of the university presidency.

He said that if we compare the status and position of women with the pre-revolution era, we will see that they have

now achieved a good position in all social, managerial, and executive fields and have demonstrated good ability and capacity. This shows that, contrary to what is claimed in the Western world, this part of society has had a good share in the progress of the country.

Dr. Alireza Rahaei, the head of Amirkabir University, in a meeting with the university's research staff on the occasion of Women's Day and Research Week, emphasized that they will provide better welfare facilities in the university's research sector through every possible means and resources at their disposal. He stated that they hold meetings with the country's planning and budget organization almost every week to secure better allocations in the remaining two months of the year.

He further referred to the most important activities of the university in the research field and stated: "In general, we carry out two activities (educational

and research) at the university. While research activities did not have a special position about 30 or 40 years ago, they are now one of the important and determining indicators at the national and international level. Therefore, if we talk about the position of Amirkabir University at the global level, the main indicators that are considered are mostly research-related."

Regarding the decrease in students' hope compared to the past, he said: "Students who are somehow involved in some research activities have faced various ups and downs in the course of the developments of recent years, and compared to the past, the level of hope among students has decreased, and the vitality and enthusiasm that existed in the past have disappeared. Considering that students are the driving force of the university, based on this, the faculty members, etc., can create this motivation among them."

Rahaei added that there were many budgetary constraints in the current year, but they are making every effort to provide better welfare facilities through every possible means. He also stated that although there were many constraints in this regard in the current year, they hold meetings with the planning and budget organization almost every week to secure better allocations in the remaining two months of the year and have a better perspective for the next year.

The "Nano Gold Colloid" has been registered under the name of the Health Technology Innovation Company, Tadbir, at AmirKabir University of Technology for the first time in the country.

According to AmirKabir, Mustafa Bahmanabadi, the chairman of the board of directors of the Tadbir Accelerator, announced this news and stated: Initial research and studies for the production of nano gold colloid were carried out at the Health Technology Research Center of AmirKabir University of Technology and then commercialized at the Tadbir Accelerator.

Referring to the unique properties of nano gold colloid,

he stated: the use of this effective substance is not only used in the cosmetics and personal care industry but also in the diagnosis and treatment of certain diseases such as gastrointestinal, joint, arthritis, and others. The deputy of the Health Technology Research Center at AmirKabir University of Technology added: This is the first time that nano gold colloid technology is being used in the field of health and beauty in Iran, although similar work

has been done in the world, the technology used in this project is completely new and novel on a global scale. Bahmanabadi concluded by stating: We are striving to, with the collaboration of technologists, produce innovative technological products based on nano gold colloid and, with the approval of the Food and Drug Administration, introduce them into the country's healthcare network.





The Role of University Research Staff in National and International Successes Amirkabir University of Technology



The Deputy of Research and Technology at Amirkabir University of Technology, referring to the scientific, research, and technological rankings of the university in the country and internationally, said: "These successes would not have been possible without the support and backing of the university's research staff." Dr. Mohammad Javad Ameri Shahroubi stated in this ceremony: "The actions taken in the research field would not have been possible without the efforts of the research staff. It is true that students and professors carry out research and industrial activities, but without support and backing, their success would not have been achieved." He stated: "According to the Deputy of Research at the Ministry of Science, Amirkabir University of Technology has implemented the highest number of industrial projects, and the supporting team has played a role in this area." Ameri noted: "In the current year, in the global rankings, among the country's industrial universities, we achieved the first rank in two rankings, Leiden and Shanghai, and we secured the second position in QS and Times rankings." The Deputy of Research and Technology at Amirkabir University of Technology recalled: "In the ISC ranking of the country's industrial universities, Amirkabir has achieved the first rank, and after us, Sharif University of Technology and Isfahan University of Technology are placed, meaning that Amirkabir University of Technology has also had a suitable position in the global research rankings." He added: "Furthermore, in the field of international patent registration, this university has been placed in the first position." The Deputy of Research and Technology at Amirkabir University of Technology said: "In the number of article registrations, this university was in the first position last year; after us, Sharif University of Technology, Isfahan University of Technology, and University of Science and Technology were placed. However, this year, we secured the first position with a slight difference from the University of Science and Technology." Ameri attributed these achievements of Amirkabir University of Technology to the efforts of the research staff and said: "The exhibition held during the Research Week awarded the first rank to the booth of Amirkabir University of Technology, showing that the coordinators are performing their role well." Referring to the grant regulations, he said: "A lot of effort was put into formulating these regulations, and they have been carefully drafted."



The news of science



Researchers at Amirkabir University of Technology have developed a conductive scaffold for tissue engineering applications.

Researchers at the Faculty of Biomedical Engineering at Amirkabir University of Technology have succeeded in designing a conductive scaffold for ion exchange for tissue engineering applications. According to the public relations office of Amirkabir University of Technology, Zahra Daraiinejad, a graduate of Amirkabir University of Technology and the executor of the project "Design and fabrication of a conductive scaffold based on polyaniline/ion exchange polymer for tissue engineering applications," said: "One of the new approaches in tissue engineering is the transmission of electrical signals to cells and the regulation of cellular behaviors.

She stated that the transmission of electrical signals to cells is carried out through conductive substrates, but since conductive scaffolds based on polyaniline are generally accompanied by conductivity instability and some toxicity, they pose a problem for cellular studies. The researcher at Amirkabir University of Technology continued: "Therefore, in this project, a conductive scaffold with excellent biocompatibility and special conductivity properties was designed to provide a suitable platform for the transmission of electrical signals to cells. She said: "In this project, by using an ion exchange polymer as a carrier in the fabrication of conductive nanofibers of polyaniline and using lithium ions, we prepared a biocompatible scaffold with stable conductivity and energy storage capability. Daraiinejad added: "This scaffold maintains its conductivity in cell culture for a long time, it does not have toxicity due to dopant, and with the release of lithium ions, it improves cellular behaviors such as proliferation and differentiation. The graduate of Amirkabir University of Technology added: "The results of this project showed that the simultaneous use of a conductive scaffold, electrical signals, and lithium ions can promote bone formation in the body. She stated: "The conductive scaffold prepared in this project, in addition to all the subfields of biomedical engineering including tissue engineering, drug release, biosensors, and wound dressings, also has applications in chemical and electronic industries such as battery manufacturing. She said that this scaffold can be used as an electrical stimulator and also as a means for the release of biological ion factors, and added: "Based on the studies conducted and the research published in reputable scientific journals, the desired system is a

new one. The

researcher added: "In continuation of this research,

we intend to work on creating conductive scaffolds with battery-like performance for stimulating body tissues, without the need for an external stimulation source. Referring to the features of the design, she said: "In this project, an ion exchange conductive scaffold was prepared for use in tissue engineering. The biocompatibility of the scaffold was evaluated in both extracorporeal and in vivo environments, and it showed very good biocompatibility compared to control samples. She continued: "Additionally, the ability of this scaffold to induce bone differentiation of stem cells derived from adipose tissue in an extracorporeal environment and to induce bone formation in rats was investigated, and very promising results were obtained. Referring to other features of the design, she said: "Furthermore, the effect of external electrical signals on the growth, proliferation, and differentiation of stem cells, as well as the induction of bone formation in rats, was studied. The results showed that the conductive scaffold containing lithium ions, along with the induction of electrical signals, played a very effective role in the growth, proliferation, differentiation of cells, and induction of bone formation in rats. She mentioned the competitive advantages of the design: "In addition to tissue engineering and biomedical engineering in general, the ion exchange conductive scaffold has applications in other industries such as electronics and chemistry.

Daraei Nezhad said: "This research has a wide range of applications in various fields of biomedical engineering. One of its most significant applications is in tissue engineering. In fact, the bioactive conductive scaffold based on polyaniline is used for transmitting electrical signals to cells and regulating cellular behaviors." He mentioned that this scaffold can also be used for the transfer of other ions for engineering heart, nerve, and muscle tissues. He added: "Furthermore, due to the special conductivity properties of this system, it can be used for the construction of batteries and electronic devices as well. It is worth mentioning that the supervisor of this project was Dr. Iman Shaban, a faculty member at Amirkabir University of Technology.

