



Production of Nano-composite Biodegradable Plastic

Seyed Amir Oliaei, researcher in the Research Center of Agriculture and Natural Resources in Khorasan Razavi and doctoral candidate of foodstuff in Mashhad's Ferdowsi University, says: "Various methods have been introduced for optimizing starch and increasing its efficiency in competition with other polymers used in the packaging industry. One of these methods is adding nano-particles to starch and creating a nano-composite." He continued: "Starch's frangibility is due to its hydrophilic property and low resistance against moisture which restricts its application in packaging. On the other hand, titanium dioxide is a neutral and affordable material, capable of eliminating a broad range of microbes. Adding titanium dioxide to a starch base would create a packaging material able to protect its contents against pathogenic microorganisms, visible and UV light and allergenic compounds." In this project, starch was gelatinized and the nano-particles of titanium dioxide were added to it. Next, the nano-particles were dispersed in the starch base and a nano-biocomposite film was produced through molding method and then characterized through microscopic and X-ray diffraction methods. Finally, the application properties of the obtained film was evaluate in terms of permeability against steam, tensional properties and its resistance against tearing, deterring visible and UV light, and color.

Meeting of Deputies of IAU's Student Formations

Deputies of Student Formations from different branches of the Islamic Azad University will hold their meeting next week. Dr. Hamid Mirzadeh, chairman of IAU, will attend this meeting. According to the PR Office of IAU's Administration of the Islamic and Political Formations, the meeting of IAU's Deputies of Student Formations will be held in the central organization of IAU, on Monday, August 15. The aims of this meeting have been announced as the intellectual cooperation of the students in governing the university and the propagation of the spirit of responsibility among the students; cooperation, help, and improving the student's self-esteem; self-reliance and depending on the students' capabilities in making progress and sustainable development with the help of the ideas and suggestions presented by the student formations. In this congregation, each deputy will present his/her ideas, opinions, and suggestions and educational workshops and specialized commissions will be held for further discussion. The Administration of the Islamic and Political Formations will be supporting this 2-day event and besides Dr. Mirzadeh, the chairman, Hassan Namazi, General Manager of the Islamic and Political Formations in IAU, and several other authorities of the university will also attend this event.

We welcome your views and memos on the related topics. You can contact us through: english@fdn.ir.

33rd Meeting of Ministry of Education's Managers

IAU Offers Financial Support and Facilities to Graduates



Photo by: Reza Hosseini, Farheekhtegan

Ayatollah Hashemi-Rafsanjani

Ayatollah Hashemi-Rafsanjani, head of Iran's Expediency Discernment Council, attended the third day of 33rd meeting and convention of Ministry of Education's managers in Tehran and referring to the important mission of this ministry in training and bringing up the youth in the country, he said: "Childhood and adolescence are the most important parts of each person's life, when the basis of his being is shaped and defined. Thus, managers in the Ministry of Education and teachers, as the prevalent influence in this period, should pay more attention to the mission of shaping the future of the people and the country in general."

He went on: "Islamic community has progressed significantly in the field of knowledge and science and it is clear that lack of these assets results in backwardness and ignorance. People who are educated with the true values and tenets of Islam would not fall in the trap of bigotry, prejudice and hardheadedness and

for the very same reason, those in charge of education and training should have an open mind themselves, ready to embrace new ideas and correct the wrongdoings. Schools and universities are charged with the responsibility of broadening the horizon of their students and this would pave the way towards greatness and power."

IAU's Share in Education

Ayatollah Hashemi-Rafsanjani, also the head of IAU's founding council and its board of trustees, mentioned the development of science workshops in the country and said: "Currently, IAU has 450 branches with more than 7,500 labs and 3,500 workshops which offer their services in the way of training and educating the students. Similar to the universal right to basic education, higher education is also turning into an essential part of this right and based on this principle, IAU has tried to reach all over the country and offer its services to students from all possible backgrounds."

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He continued: "In the recent past, families were worried over the education of their children. Fortunately, IAU has provided a better situation and today, people trust IAU with their children, both for education and overall wellbeing. Also, currently more than 1,000 knowledge companies are active in this university, focused on different fields of science and technology. University has eased their entrance into the market and they could offer their products for the sake of earning an income and becoming independent."

He claimed that IAU supports all of its graduates and said: "IAU has established numerous incubator and research centers in all the fields imaginable and all of this has been done with the aim of commercializing knowledge. In line with this objective, IAU offers financial backing and facilities to its students and graduates. Knowledge and science are the way towards greatness and as such, education system of our country should act up its game and be more efficient and goal-oriented."

Iran's News

Tissue Engineering of 3D Structures



When making a tissue based on engineering methods, it is required to design a scaffold with proper physical properties which is also capable of sticking to cells, cell migration, cell proliferation and differentiation and finally, growing and surrogating the new tissue. Sajedah Khorshidi, doctoral candidate of Amirkabir University of Technology, referred to the purpose of this project as producing a 3-dimensional scaffold with proper microstructure and biologic properties through polymer nanofibers, saying: "In this project, the nano-fibers were produced with a 3-dimensional structure, which significantly increases the electrical conductivity of the scaffold. As

a result, this version offers a higher rate of cell migration compared to its 2-dimensional predecessor." She noted: "In this project, the modified electrospinning process was designed and next, the optimum circumstances for synthesizing the 3-dimensional nanofiber were determined. In the next step, the solution of polyaniline/polyethylene PCL was used for the purpose of producing the scaffold. Finally, the synthesized structure was evaluated in terms of structural and biological properties." The findings indicate that in case of increasing the percentage of polyaniline from 7 to 70, the fiber would transform from its 2-dimensional to a 3-dimensional structure.

Center for Non-Resident Scholars



In order to achieve the long-term scientific goals of the country and to use the science capabilities of Iranian scientists and experts who live in other countries, Isfahan University, with the support of National Foundation of Elites and the Office of International Affairs in the Presidential office's Deputy of Science and Technology, has started establishment of a center for cooperation with the non-resident Iranian scholars. This project started up in order to transfer knowledge, experience, and technologic ideas to the country and will support long-term scientific and research projects such as post-doctorate programs, research opportunities, short-term

and long-term technology projects, and hosting conferences and specialized workshops, all of which will be done for the sake of promoting cooperation between Iranian scientists and experts who live abroad and the country's top research centers. Those interested to cooperate with Isfahan University in implementing this project could visit the address of <http://international.bmn.ir> and register in the Cooperation Tab and choose their own field of preference. Also, those in need of more information regarding the whole project could call through 03137932297, the Office of Education in Isfahan University.



DR. MIRZADEH, CHAIRMAN OF THE ISLAMIC AZAD UNIVERSITY, PRESIDED OVER THE MEETING OF IAU'S COUNCIL IN KHUZESTAN PROVINCE.

IRAN UPDATES

Indonesia-Iran Mull \$8.4 bl. Refinery

Indonesia says it will make a decision on jointly building an oil refinery with Iran amid rising consumption in the Southeast Asian country. The proposal is to build a 100,000-bpd processing facility on the main Java island, director-general of oil and gas at Indonesia's Energy and Mineral Resources Ministry IGN, Wiratmaja Puja, said in Jakarta. According to the head of Joint Iran-Indonesia Refinery's board of directors, Hassan Khosrojerdi, the project is estimated to take \$8.4 billion to be complete over four or five years. Iran is conducting a feasibility study and examining its economic viability, its Ministry of Petroleum said. Puja, quoted by Bloomberg, said the project is at the preliminary stage yet.

Iran-Britain Welcome Advance in Relations



Iran and Britain say relations between the two countries have developed positively since last year's nuclear agreement between Iran and the P5+1 group of countries and that both sides should continue to advance the relationship. In a telephone conversation with British Prime Minister, Theresa May, Iranian President Hassan Rouhani said Tehran welcomes the further development of cooperation with London. Rouhani congratulated the premier on taking office and said Iran and Britain witnessed positive developments after the implementation of the nuclear agreement. "All efforts should focus on accelerating the careful implementation of the JCPOA and strengthening its roots," he added. The British premier, on her part, urged collective cooperation on the campaign against terrorism and said London welcomes cooperation with Tehran in this regard.

Iraqi Kurds Stalling on Iran Deal

Iraq's Kurdistan Regional Government (KRG) is holding back on the conclusion of an oil agreement with Iran, and one source with the knowledge of the matter believes Turkish dealings might be getting in the way. Three months have passed since the KRG undertook to ink an oil agreement with Iran, but it has yet to go the last mile, the website of Rudaw, a Kurdish media group based in the Iraqi city of Erbil reported. It quoted KRG representative in Iran, Nazim Dabagh, as saying that the agreement was to be signed on May 4 but Tehran was still waiting for a response from Kurdish officials. "The Iranian government stepped forward to sign the oil agreement with the KRG and for that they have been waiting for three months. But the KRG has remained silent. The KRG should make their decision known 'with a yes or a no'," Rudaw quoted him as saying.

SPECIAL REPORTS

Inside IAU

Solar Water Heater and Wind Turbine for Rural Houses



Mohammad Nikan, head of Mechanics Research Center of Takestan branch of IAU, says: "We have established the Energy Research Clinic in this center for the purpose of directing the research and master theses focused on energy, in addition to holding national and international conferences in relation with the field of energy."

He referred to the construction of Energy Park and said: "The plans of this center include inaugurating a greenhouse in the park, and building wind turbines according to geographical placement of Qazvin province and Takestan. This center is trying to establish a solar water heater system for villages that do not access to gas network. There is an expensive foreign sample of this device in Iran, but many people do not have the financial power to purchase it. Thus, Takestan branch is working on presenting a similar quality with an affordable price."

Nikan continued: "Manjil is one of the windy regions of Iran, and the next stop for the wind that starts from Manjil is Takestan city. One of the projects of the Energy Research Clinic is to measure the wind's energy and then assess the amount of fossil fuel that equals its power, so that we could be able to rely more on clean energies." He referred to making small wind turbines as another project of this academic branch, which would enable the rural houses to provide part of their electricity through wind force. He noted: "Another research project of this branch is generating energy from garbage which is called biogas. A sample of this work has been built as a part of master project of one of the students enrolled in this branch and we intend to further develop this project."