
Unveiling of Four Iranian Devices in Cancer Diagnostics and Treatment at the Iran Lab Expo

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Four devices of Nano Hesgar Sazan Salamat Arya Company were unveiled at the Iran Lab Expo. Breast Cancer Detection Probe (CDP) for diagnosis of infected margins and lymph nodes, Impedance Tumor Detection Probe (ITDP), real-time ROS detection system (RDSS), and Positive Electrostatic Cancer Therapy (PECT) for malignant tumors designed and built by Dr. Abdulahad's research team, can be used to diagnosis and treat cancer.

According to Dr. Abdolahad, the first device is the Cancer Diagnosis Probe, a device for identifying cancer-infected margins and lymph nodes involved in cancer, which is designed to detect tumors in areas inside the patient's body and can be used to clean inside space of the body after tumor removal. This device has also received a license from the Ministry of Health. This device also has an accessory for involved lymph nodes diagnosis.

The second device is a probe for impedance diagnosis. This device helps the radiologist determine the mass's condition in the patient's breast and determine its risk to the patient. In this method, a probe is placed on an ultrasound machine and the probe contacts the skin surface to collect the necessary signals, and the radiologist can judge the risk of the tumor. This information helps doctors make the best decision when in doubt about a biopsy.

The third device is a device that detects the amount of reactive oxygen species in the blood that is used for breast cancer. When a lump in breast cancer becomes malignant, the amount of active oxygen in these cells decreases. Therefore, this device can measure the amount of active oxygen in the blood in the cancerous mass, to show that the amount of active oxygen is reduced compared to standard samples, and if the concentration of active oxygen decreases, notification or warning is issued that the tumor is malignant. It is noteworthy that there is more active oxygen in benign tumors than in malignant tumors.

Dr. Abdolahad adds that the fourth device is the electrostatic cancer therapy for malignant masses. This device has a patch placed on the patient's body and because of its high electrostatic charge, it disrupts the proliferation and growth of cancer cells. Another application of this device is that drugs that have a high electrostatic charge with the help of this device can move to the cancerous tumor and reach these cells in a targeted manner. So, thanks to this technology, many drugs can be injected into a cancerous tumor.

Dr. Mohammad Abdolahad received his Ph.D. in nanoelectronics engineering from the Electrical and Computer Engineering Faculty, [University of Tehran](#). Over the years, he has patented more than 20 patents in the [United States](#) and published more than 50 articles in the world's most prestigious scientific journals, most of which are related to cancer diagnosis methods.

[Nano Hesgar Sazan Salamat Arya](#) works with advanced technologies in design and manufacturing of medical equipment and products to diagnose and treat cancer. Leading groups of elite and educated people in various fields including electronic engineering, chemical engineering, biology, and polymer engineering, work together with renowned surgeons in the field of cancer and pathology to achieve this important goal. The main objective of the company is to produce and commercialize innovative and knowledge-based products in medical equipment.

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