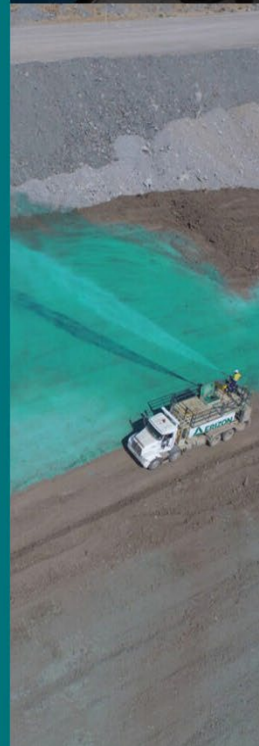




**Radiation Application
Development Co**

Products of Iran Radiation
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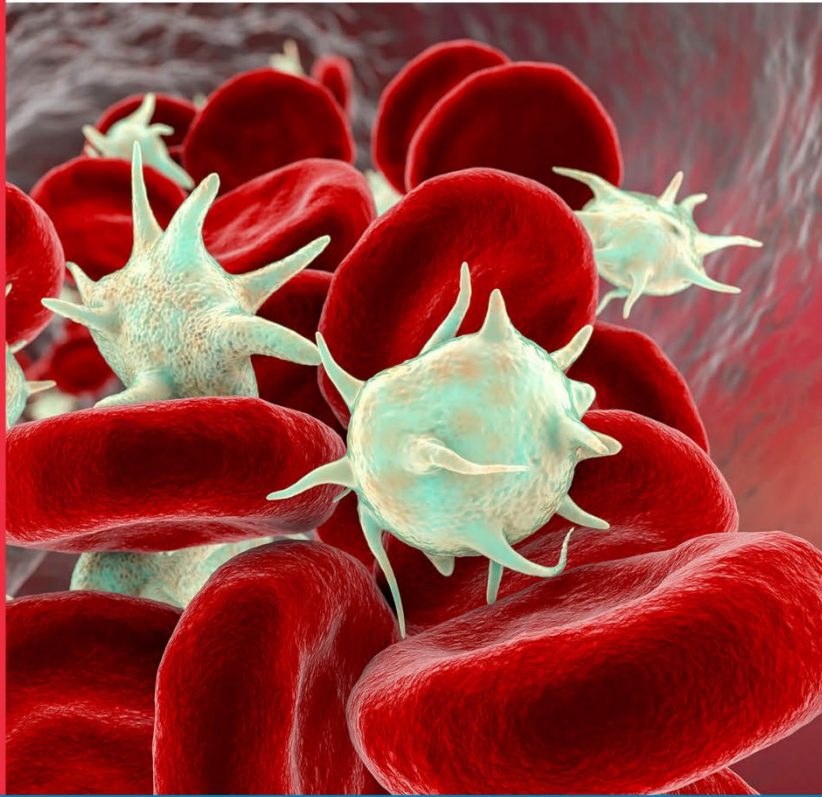


Hydrogel Wound Dressing

Hydrogels are hydrophilic polymeric mesh which can serve as a people health. Advantages of Hydrogel wound dressings compared to traditional products such as gauze and bandages are as follows:



- Maintaining the moisture of the surface and resist drying of the wound
- Easy to remove from the wound
- Proper transparency to observe the healing process of the wound without removal of dressing
- Protect the wound area from contamination and further injuries
- Cool the wound due to surface evaporation and as a result reduce pain
- Accelerate burn wound healing
- Injectability and easy drug loading through the surface without removal of dressing



Hemostatic powder

Hemostatic powder (blood stop powder, can be applied for different types of bleeding) are among the most common, fastest, easiest, and most accessible methods for surgeons to stop bleeding. This hemostatic powder is produced based on the modified biopolymers by electron irradiation method. Here are some of the top advantages of Hemostatic powder:

- Stop bleeding fast
- Lack of adhesion of internal body tissues
- Degradable after a month
- Without applying chemicals in the manufacturing process compared to commercial products in the market
- No skin inflammation and allergy
- More economical than the other similar products

Self-Shielded Gamma Irradiator

Insects are one of the main sources of pests on grains and legumes and cause a lot of damages. Food irradiation technology is a reliable, safe and highly effective method in regard to eliminate the insects and pathogens. In this respect, various irradiators such as gamma and electron irradiators are used in the worldwide. Self-shielded gamma irradiators with the capability of irradiating bulk products of grains, legumes and cereals at low doses, cause disinfection, sprout inhibition, insect pest control and shelf-life extension in the stored products through elimination or reduction of pathogenic micro-organism. The significant advantages of irradiation method over other pest control methods such as chemical poisons and pesticides are as follows:

- Safety and reliability
- Permeability
- Easy to use and operate
- Fast and continuous process execution
- Irradiation of products and equipment in packaged form
- Without harmful residual risk after the process

IRAD Co. has succeeded to design and manufacture the first localized self-shielded gamma irradiator, aimed at increasing food security. Moreover, IRAD Co. has the capability to construct the irradiators for agricultural products with custom features that meet the exact needs of the clients.



Agricultural Superabsorbent

Hydrophilic superabsorbent are three-dimensional polymeric mesh which have a high capacity of water absorption and retention. Here is a look at some of agricultural superabsorbent's advantages:

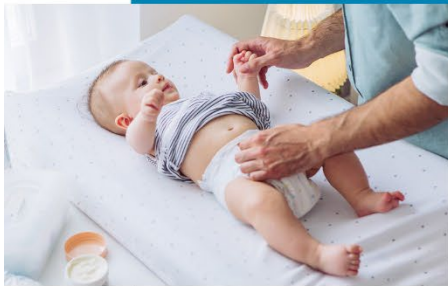
- Reduce water consumption in agriculture
- Improve nutrients uptake through the root
- Stimulate rooting and promote root growth
- Increase fertilizer efficiency
- Increase soil moisture
- Minimize soil erosion impacts
- Prevent desertification
- Increase revenue due to an enhancement in both quality and quantity of the product



Sanitary Superabsorbent

The Sanitary Superabsorbent is designed based on a natural and acrylate polymer composites, which creates super porous polymer structure by utilizing irradiation techniques and natural foaming compounds (in the form of micelles) during the polymerization and cross-linking process. This super porous absorbent structure has increased the speed of absorption and biological liquids retention compared to agricultural Superabsorbent polymers. Sanitary Superabsorbent is mainly used in preparing and making sanitary napkins (pads) and baby diapers. The following are the advantage of sanitary superabsorbent:

- No using of common organic and mineral chemical additives in polymerization processes (such as initiators and crosslinkers)
- Biocompatibility
- Non-allergic and less toxicity for healthcare consumption





Lead Cell and Hot Cell

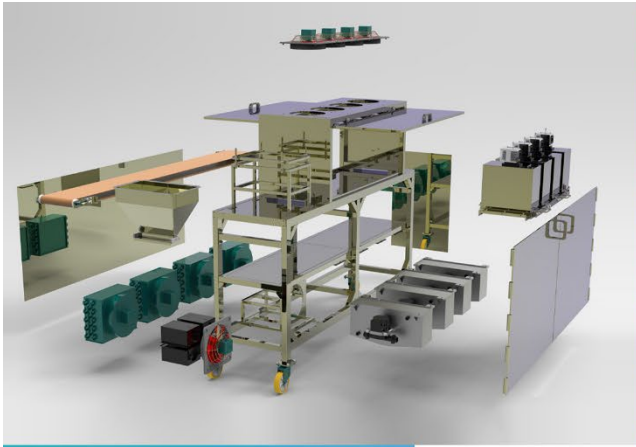
Enclosing radioactive sources is one of the most important methods of controlling environmental health risks to prevent the possible harm to humans. Lead cell and hot cell are usually applied to enclose radioactive sources. They are shielded containment chambers which are constructed of walls of lead bricks and/or of reinforced concrete to prevent the release of radioactive material to the environment. These chambers are used for compliance with radiation production principles and restriction of the external radiation exposure to the personnel. They are utilized for activities such as cutting fuel plates, working with radioactive sources including Cobalt-60 and Cesium-137, producing medical radioisotopes, etc. So far, IRAD Co. has designed and manufactured several lead cells and hot cells for the public and private sectors. Several other devices are scheduled for designing and manufacturing as well.



Essential Oil Extraction Device

Microwave Extract Essential Oil is equipped with an optical sensor, practical tools in chromatography, which in addition to producing essential oil, monitors the quality of particles coming out of the machine in order to increase purity. Monitoring the output particles by optical tools will increase the use of these precise sensors in medicinal plant science and chromatography research. The design of Pars Microwave Extract Essential Oil is environment-friendly. The microwave-assisted extracted essential oil of medicinal and aromatic plants has high purity due to the utilizing of optical sensors. In addition, the smell and chemical properties of the plant are completely preserved without any additives.





Arvan Parto Microwave

The design and manufacture of this device is based on the technology of non-ionizing waves. It is able to disinfest and dry all kinds of food (rice, pistachios, dates, grains, beans, figs, etc.). Arvan Parto is a new, fast and safe method and is considered as one of the most reliable methods of disinfestation and drying. It does not need a thermal reservoir/ heat source, because microwave energy directly affects the molecules of the target material and produces heat, thus there is no energy dissipation. Arvan Parto microwave device covers a range of industrial applications in different industries such as food, wood, paper, medicine, ceramic and pottery, wire and cable and can be customized the features that meet the exact needs of the clients. Quality in designing and manufacturing of Arvan Parto Microwave Insect Disinfestation Device is unique and compete with other global brands. The advantages are as follows:



- Disinfestation and elimination of insect pests in just a few minutes
- High speed and uniformity performance
- Safe and healthy
- Easily operated
- High energy conversion efficiency
- High speed / fast heating rate
- Suitable for installing in small and large factories/ Suitable for factories with small or large space
- Having multiple product options

Hydromulch

Hydromulch is a special form of organic mulch, which is usually a mixture of water, organic materials (wood fibre, paper, flax, sugarcane, etc.), compostable tackifier adhesive substance, preservatives and hygroscopic substance, fertilizer and plant seeds. It is used for the protection of slop and erodible land like roadsides, rivers and dams from erosion and provide fast and efficient revegetation. The main limitation of using organic polymer hydromulch is the tackifier in its formulation, which has some disadvantages such as lack of hydrogel properties, low adhesion and resistance to biodegradation. IRAD Co. has succeeded to remove all these barriers and limitations and produce efficient and economic hydromulch by utilizing gamma radiations. Advantages of hydromulch include:

- Protecting the soil from the wind and rain
- Preventing soil compaction and crusting and facilitating rain penetration
- Improving soil fertility
- Providing organic matter and nutrients for the rapid planting in the surface layer
- Long-term controlling of soil erosion



Area Gamma Monitor

Environmental radiation monitoring is one the fundamental radiation protection and safety for the continuous monitoring. Area Gamma Monitor which is certified by secondary standard dosimetry laboratory of Iran (SSDL), can be used for X-ray, radiology and radiotherapy rooms, nuclear and accelerators sites. The distinguished features of area gamma monitor are easy operation, real time viewing data, online adjustment of alarm threshold, viewing data on charts and SQL server database.



Lead Free x-ray shielding

Due to the type and optimal combination of materials used in its inner layer, apron model of vest/skirt Rayposh brand has high flexibility, lighter weight compared to lead samples and low price compared to imported non-lead samples. Because of this feature, the user is able to move, sit or bend while wearing it without any damage to the middle layer. Covering a wide range of energy, being washable, surface/area density of 2.5 kg are among the outstanding technical features of X-Ray lead free protective shield, it also obtained licenses such as ISO13485:2016, IEC_61331_1:2014, IEC_61331_3:2014, CE.

