industrial electron accelerators and pdf

This paper addresses the industrial applications of electron accelerators for modifying the physical, chemical or biological properties of materials and commercial products by treatment with ionizing radiation.

Industrial applications of electron accelerators

1 Industrial Applications of Electron Accelerators Marshall R. Cleland Ion Beam Applications IBA Technology Group 151 Heartland Boulevard Edgewood, New York 11717

Industrial Applications of Electron Accelerators

Industrial Accelerators Direct Voltage – Voltage gradient used to accelerate charged particles (electrons or ions) Van de Graaff – Use a charge carrying belt or "chain―. Energies range from 1 to 15 MeV at currents from a few nA to a few mA. Dynamitron & Cockcroft Walton generator – Basically voltage multiplier circuits at energies to up to 5 MeV and currents up to 100 mA.

Review of Industrial Accelerators and Their Applications

New industrial accelerator with electron energy up to 5 MeV, and average beam power of up to 300 kW was designed basing on experience of work with the ILU accelerators [2]. The design of its accelerating system is shown in Figure 4. The accelerating structure consists of ... Industrial electron accelerators type ILU

Industrial electron accelerators type ILU - JACoW.org

Figure 2: ILU-10 accelerator. 1 â€" vacuum tank, 2 â€" copper toroidal cavity, 3 â€" magnetic lens, 4 â€" ion pumps, 5 â€" electron injector, 6 â€" beam

INDUSTRIAL HIGH ENERGY ELECTRON ACCELERATORS TYPE ILU - CERN

ILU industrial electron accelerators. Aleksandr Bryazgin Budker Institute of Nuclear Physics Novosibirsk, Russia Electron energy, ... Accelerator Production City, Country Year of start ILU-6 Sterilization raw material (medecinal

ILU industrial electron accelerators. Aleksandr Bryazgin

STATUS OF INDUSTRIAL ELECTRON LINAC DEVELOPMENT PROGRAMME AT BARC, INDIA K.C. Mittal Electron Beam Centre, Accelerator and Pulse Power Division,

STATUS OF INDUSTRIAL ELECTRON LINAC DEVELOPMENT PROGRAMME

A few microwave electron linear accelerators (called linacs) are in use, for irradiation of medical disposables, thick-walled plastic components and tubing, food, and color enhancement of gems.

Present and Future Applications of Industrial Accelerators

Calorimetry has been applied as routine dosimeters at industrial electron accelerators with energies between 6 and 10 MeV for several years 13-51. The high rate of energy deposition of an electron accelerator is an advantage here, making the thermal isolation less critical.

Calorimetry at industrial electron accelerators | András

10 MeV 25KW INDUSTRIAL ELECTRON LINAC Y. Kamino Mitsubishi Heavy Industries, Ltd. Nagoya Aerospace Systems ... initial part of the accelerator guide where the electron beam energy is low. In CG type accelerator guide, HEM11 modes ... 10 MeV 25 KW Industrial Electron Linac Author: Y. Kamino Subject:

10 MeV 25 KW Industrial Electron Linac - CERN

Industrial electron accelerators operate between 70 keV and 10 MeV, accelerating electrons, which have mass and charge, well beyond the ionization potential for organic or polymeric materials, ~10 eV.

PROSPECTS AND CHALLENGES FOR THE INDUSTRIAL USE OF

Electron beams could treat flue gases ... The market for medical and industrial accelerators currently exceeds \$3.5 billion dollars a year, and it is growing at more than ten percent ... 6 6 Accelerators for America's Future. Since the days of cathode ray tubes in the 1890s, particle accelerators have ...

Accelerators f or America's F uture

The Rhodotron ® is a unique continuous wave E-beam accelerator combining high-power and high energy. The Rhodotron ® can provide one or several beam outputs from 2 to 10 MeV and operate at power levels up to 560 kW.

Accelerators | IBA Industrial

The electron industrial accelerators, on the basis of linacs, consist of an electron injector with electron gun, a linear accelerating structure, a power supply system for accelerating structure, a scanning electron beam system, and a system for output electron beam from vacuum chamber to air or chamber for irradiation, vacuum and control ...

Critical analysis of industrial electron accelerators

The applications of over 1000 electron beam (EB) accelerator processors used recently worldwide span technological fields from material modification to medical sterilization and food processing.

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