



# Electron Beam SDN BHD

## E-beam Sterilization: the Logical Choice

Customer Success Story - June 2010

### INTRODUCTION

**ELECTRON BEAM SDN BHD** is Malaysia & South East Asia's first ever commercial supplier of contractual electron beam processing services. ELECTRON BEAM is located in West Port, Port Klang, Malaysia's premier port. The facility's 5,000 m<sup>2</sup> construction lays on a 17,000 m<sup>2</sup> plot and includes dedicated areas for processing and warehousing. The company has started operations with an initial capacity of 96,000 tons a year but capacity will increase to 160,000 tons per year from the second year onwards.

### E-BEAM STERILIZATION: THE LOGICAL CHOICE

In 2007, ELECTRON BEAM gave the kick-off to a feasibility study concerning the operation of a new irradiation facility in Malaysia. The target market was mainly the Medical Device Sterilization market. Two technologies were evaluated: E-beam and Gamma.. The initial step in such an evaluation is reviewing compatibility between the products and the selected sterilization technologies. ELECTRON BEAM contacted IBA to support them in the assessment process of the compatibility of products with E-beam.

"The outcome of our feasibility study outlined that E-beam was far superior to traditional gamma Sterilization. At the same time, with E-beam we get rid of all Cobalt transport and availability issues", says Brian Wong, Managing Director at Electron Beam. "Additionally, countries such as the US and Europe already approve exportation of products sterilized with E-beam."

ELECTRON BEAM's customers and prospects are experienced in Gamma and ETO sterilization technologies. IBA helped ELECTRON BEAM to develop expertise in E-beam technology by supporting them through several services such as:

#### ► Irradiation simulations:

The first step in the analysis is to simulate E-beam irradiation on specific customer products. The outcome allows customers to irradiate their products in the most optimal way increasing operation efficiency. Such simulations are done thanks to a method of mathematical models called "Monte Carlo".

#### ► Sample irradiation:

Monte Carlo simulations enable you to choose the best method to irradiate customer products. Once this is determined, sample irradiation tests are performed in order to validate the theory. Such sample testing is called "Dose mapping".

#### ► Turnkey project:

Even if knowledgeable in the required expertise in civil works, customers rely on IBA to provide them with construction drawings, conveyor solutions, Process Control Supervision and safety systems. The Process Control Supervision provides detailed reporting possibilities and history logs allowing customer to comply with regulations.

#### ► E-beam training:

IBA not only trained the ELECTRON BEAM staff on Electron Beam principles but also on Rhodotron and conveyor maintenance, treatment process control and Dosimetry. IBA helped ELECTRON BEAM to start relationships with key companies in the E-beam industry.



### ► **Operation license support:**

Operating an E-beam facility requires licenses from local authorities. IBA supported ELECTRON BEAM by providing necessary simulations and measurements thus enabling a smooth and successful license application process.

“IBA’s team is made out of multiple experts specialized in different E-beam fields. They really supported us in developing our E-beam expertise, defining the best facility configuration for our specific needs and providing us with data requested by local authorities” said Mr Wong.

## **IMPLEMENTING AN E-BEAM FACILITY**

The heart of the ELECTRON BEAM SDN BHD Sterilization center is IBA’s E-beam high power accelerator: the Rhodotron. The Rhodotron is the market’s most powerful electron beam accelerator allowing high product throughput in very short turnaround periods. “One of the biggest differences in IBA’s Rhodotron compared with other accelerators is the possibility to start with a “small” capacity facility and upgrade to higher capacity when the need is there.”, Mr Wong stated.

In less than 4 months after the customer building was completed, a qualified sterilization center was ready for customer product validation.

“When I look back, I’m very happy that we selected IBA. The design of our service center is adapted to our processes and IBA provided us with valuable support, even outside of their scope.”, Mr Wong recalls. “We are now in support mode and the after sales services we get are extremely reactive and of very high quality.

## **ELECTRON BEAM SDN BHD**

ELECTRON BEAM offers a wide range of E-beam services of which, among others, medical device sterilization, Bioburden Reduction, crosslinking and Material enhancement but also associated professional services helping customer make the appropriate choices. In five years, Electron Beam hopes to be the leading E-beam sterilization company in Asia and to be able to participate in research and development projects with universities and manufacturers in ways to sterilize and improve products.

### **ELECTRON BEAM SDN BHD**

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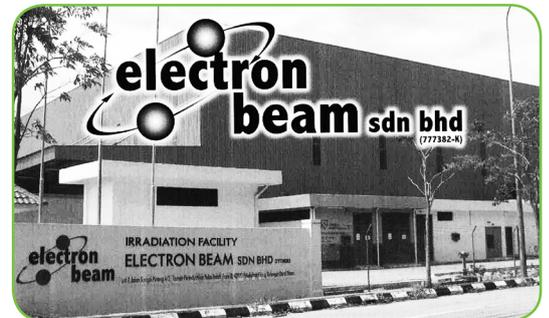
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## **ION BEAM APPLICATIONS**

IBA Industrial is the world leader in electron and proton accelerators for industrial applications. IBA’s unique E-Beam, X-ray and Proton treatment solutions are used across the world in many different applications such as medical device sterilization, food pasteurization, property enhancement for various materials, safety and detection, crystal modification, etc.

Over 250 IBA Industrial accelerators are used in the world today, some for more than 50 years.

### **ION BEAM APPLICATIONS**

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