



# Electron Beam Innovation in Industry

## Food & Agriculture



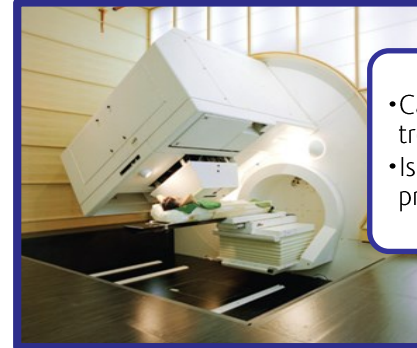
- Food irradiation
- Food packaging sterilisation

## Energy & Environment



- Controlling power plant emissions
- Wastewater treatment

## Health & Medicine



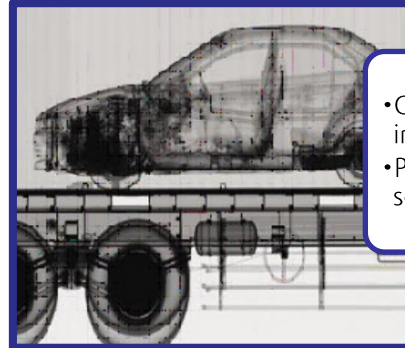
- Cancer treatment
- Isotope production

## Industrial Applications



- Polymer crosslinking
- Ink curing on packaging

## Security Applications



- Cargo inspection
- Passenger scanning



# VELA – Security R&D

## The Challenge

Rapiscan Systems wanted to test their theoretical assumptions for generating 3D X-ray images before committing to longer-term investment in this innovative technology.

## The Solution

ASTeC's unique test environment with VELA's high energy and short pulse widths, combined with expert staff, enabled Rapiscan Systems to perform proof-of-concept experiments.

## The Benefits

Reassurance for long-term investment into this strategic product development programme supporting Rapiscan Systems in maintaining its position as a global market leader.





# Tetra Pak ® beverage carton packaging sterilisation using electron beams

## Reduced Operational Costs

- More than 60% increase in capacity compared to traditional system
- Opportunity to save up to 20% in operational cost due to improved efficiency

## Better Environmental Performance

- Use of electron beam instead of hydrogen peroxide ( $H_2O_2$ ) means fewer chemicals
- Electricity saving from  $H_2O_2$  preheating, heating and drying can be up to 33%



ebeam



# Electron Beam Innovation at Daresbury Laboratory

## What we offer...

- A network of experts in electron beam system design and their applications
- Access to electron beam test facilities through commercial contracts and research collaborations
- Radiation shielded enclosures for product development and testing of electron beam and x-ray systems
- A partner for industrial organisations developing applications of electron beams in manufacturing and processing

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