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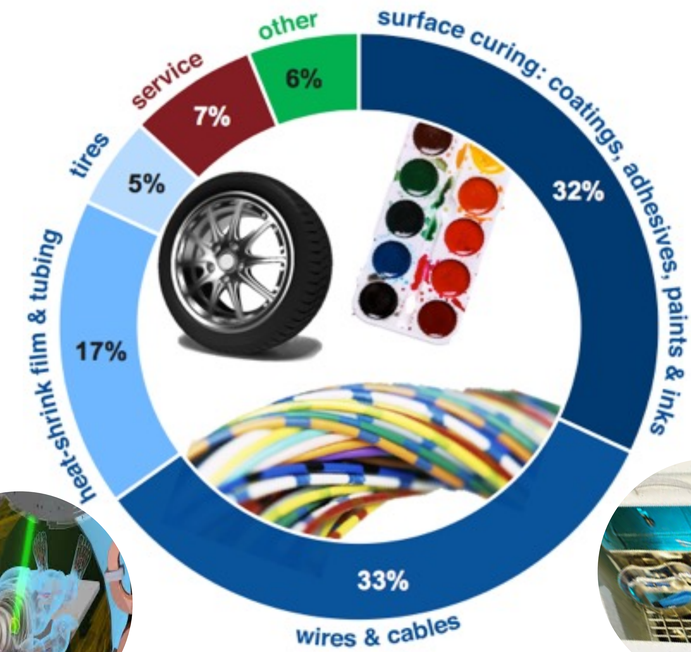
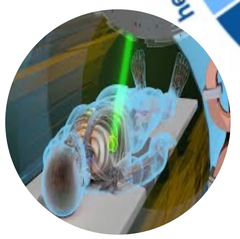
Electron Beam Technology & Industrial Applications

Slavica Grdanovska, *Illinois Accelerator Research Center (IARC)*

E-beam Applications Today

- About 30,000 accelerators are in use worldwide.
- Accelerators touch over $500B/year in products.
- E-beams have shown promise across a range of industrial applications from wastewater treatment to materials processing to advanced manufacturing.
- E-beam processing can be used to either break down contaminants or to link together different materials.
- The overall process is cost effective, environmentally friendly and has short processing times

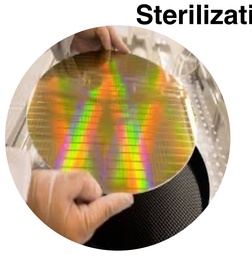




Radiation Therapy

Additive Manufacturing

Food Processing



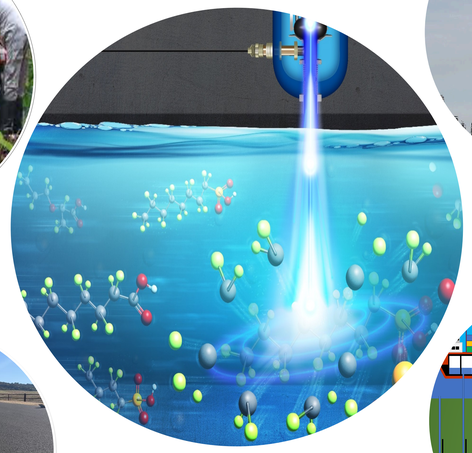
Chip Lithography

Medical Sterilization

E-beam Applications of Tomorrow

- The new capabilities enabled by Fermilab's accelerator technology will expand the market for electron beam accelerators.

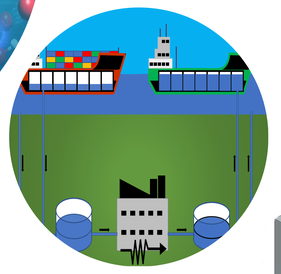
Help DOE/DOD manage legacy waste.



Address one of the biggest contamination concerns in the world, PFAS.

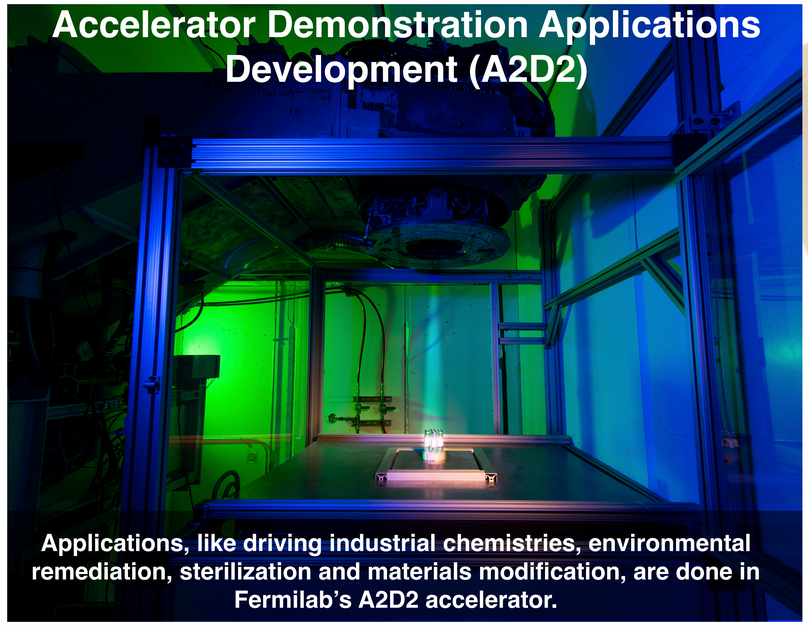
Drive industrial chemistry

Improve pavements



Mitigate invasive species

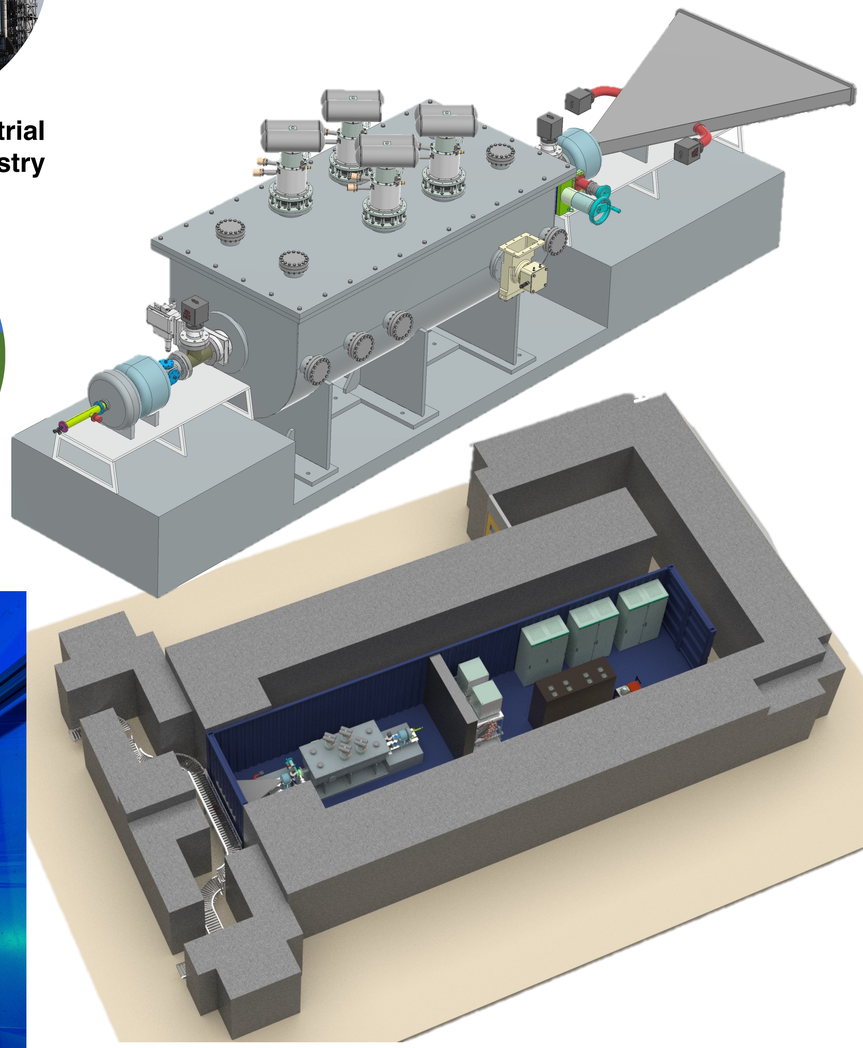
Accelerator Demonstration Applications Development (A2D2)



Applications, like driving industrial chemistries, environmental remediation, sterilization and materials modification, are done in Fermilab's A2D2 accelerator.

Novel Fermilab Accelerator

- Fermilab is a global leader in accelerator technology, with 50+ years of design, commissioning and operation experience.
- Combining new technologies allows for a more powerful and energy-efficient beam and in a more compact and portable footprint.



This accelerator enables more applications of electron beam treatment that will increase the market size of the technology.

Fermi National Accelerator Laboratory

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Fermilab

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