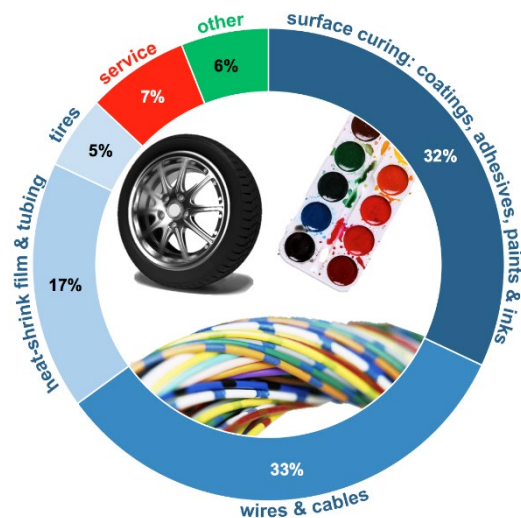


## E-Beams for Industry - Today

Electron beam technology is already used in many industrial applications,



*Distribution of industrial applications using e-beam process technology.*

## Typical Benefits

- Improve material properties
- Reduce oxidative damage, color change
- Reduce use of process chemicals
- Shorten processing times
- Destroy pathogens and contaminants

## E-Beams for Industry - Tomorrow

New accelerator technologies that are being developed at Fermilab and other National Laboratories will enable new industrial applications, where higher power and higher energy are key.

## About Us

### About Fermilab

Fermi National Accelerator Laboratory is an international hub for particle physics located 40 miles west of Chicago, Illinois.

Fermilab's employees and users drive discovery in particle physics by building and operating world-leading accelerator and detector facilities, performing pioneering research with national and global partners, and developing new technologies for science that support U.S. industrial competitiveness.

### About IARC

The Illinois Accelerator Research Center was established to facilitate Fermilab partnerships with industry, universities, and other federal laboratories to promote the development of accelerator-based technologies and applications, leading to new products, capabilities, and businesses. IARC's buildings and equipment provide a unique setting where accelerator-based technologies for industry can be researched, developed, and demonstrated.

### Contact IARC

Illinois Accelerator Research Center  
Fermi National Accelerator Laboratory  
PO Box 500, MS 312  
Batavia, IL 60510

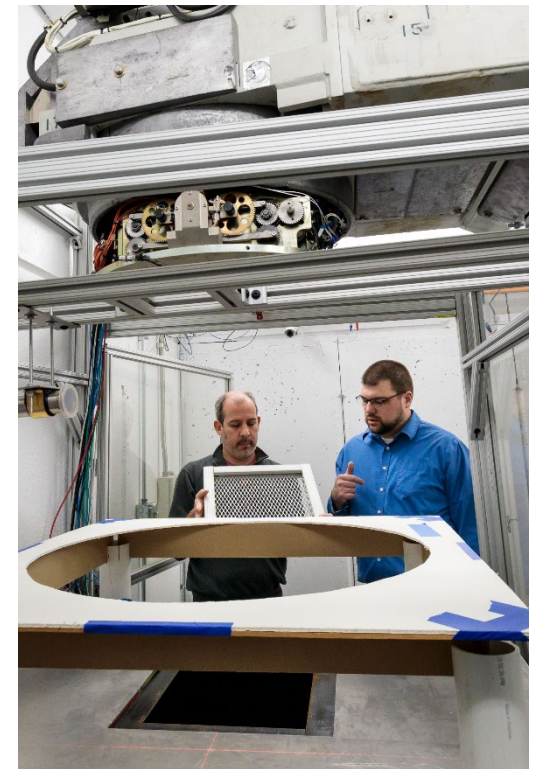
**Phone:** 630-840-6966

**Email:** [iarc@fnal.gov](mailto:iarc@fnal.gov)

**Website:** [iarc.fnal.gov](http://iarc.fnal.gov)

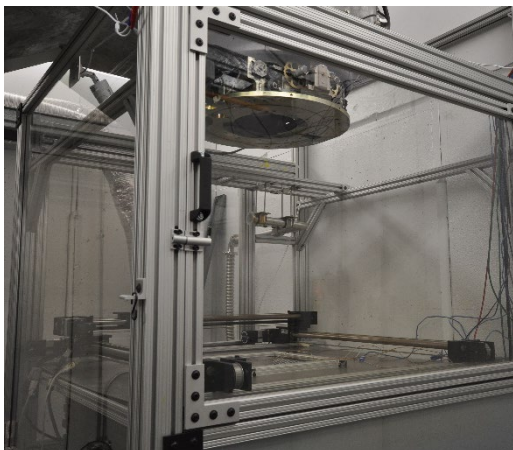


A national laboratory funded by the  
Office of Science of the Department of Energy



## A2D2 Accelerator Applications Development and Demonstration

*An Applications Research  
Accelerator located at the  
Illinois Accelerator Research  
Center at Fermilab*



## A2D2 System Specifications

<b>Beam Energy</b>	9 MeV
<b>Nominal Beam Power</b>	1.2 kW
<b>Beam Orientation</b>	Vertical
<b>Dose Rate</b>	0.2 to 1.2 kGy/sec

**We can accommodate a wide variety of sample containers and flat stock. Typical sample size container is 3.5 x 2in (Dia. x H).**

**The A2D2 team will work with you to develop a Sample Treatment & Testing Work Plan that is specific to your research needs.**

## What is A2D2?

A2D2 is a research tool that accommodates proof-of-concept studies for research into new applications and validation of existing applications using e-beam technology. It is available for use by industry, universities, and other federal laboratories.

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## *Explore the power of e-beam technology for industrial applications at A2D2.*

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### Current Studies

- Environmental Remediation (water & soil)
- Coatings
- Medical Device Sterilization
- Phytosanitation
- Additive Manufacturing
- Invasive Species Management

### For more information:

To discuss if A2D2 is suitable for your research needs, or to request a budgetary estimate, contact:

Michael I. Geelhoed  
Engineering Physicist  
630-840-2468  
[geelhoed@fnal.gov](mailto:geelhoed@fnal.gov)

## Access to A2D2

The two primary partnering mechanisms used to facilitate work with Fermilab are:

### **Strategic Partnership Project (SPP)**

SPP agreements provide an excellent way for companies, universities, and other institutions to access the unique facilities, technologies, and expertise available at Fermilab on a project-specific basis. Under an SPP agreement, a partner can pay full cost recovery for unique laboratory services and receive these benefits:

- Retain right to elect title to Subject Inventions
- Protect generated data as proprietary
- Opt for a limited government R&D license (certain restrictions apply)

### **Cooperative Research and Development Agreement (CRADA)**

Under a CRADA:

- Fermilab and the partner may share costs or the partner may pay 100% of the costs
- Fermilab and the partner may elect title to their own inventions
- The partner has the right to negotiate an exclusive license to Fermilab's inventions
- Generated data can be protected up to five years

**For more information about partnering with Fermilab, visit [partnerships.fnal.gov](https://partnerships.fnal.gov)**