

# **The Need for a National Electron Beam Irradiation Facility at NIST and How CIRMS can Help Facilitate its Creation**

**Mark S. Driscoll**

**Chemistry Department**

**Director, UV/EB Technology Center**

**State University of New York**

**College of Environmental Science and Forestry**

# Electron Beam Processing

- 85 billion USD value added in 2010
- For the industry to continue to grow in the United States we need a well educated workforce.
  - Educators will need access to industrial electron beam equipment for educating future operators and researchers.
  - **Students are our future.**

# **Electron Beam Processing**

- **Industrial research and development will need access to electron beam equipment to develop new methods and develop new products.**

# **Electron Beam Processing**

- **Academic and government scientists need access to electron beams to study new applications of electron beam irradiation this includes basic and applied research.**

# **Electron Beam Processing**

- **Commercial electron beam irradiation facilities.**
- **Neo Beam and IBA Industrial.**

# Electron Beam Processing

- **Industrial beam power**
  - **IBA Industrial**
    - **3 MeV, 90 kW**
  - **Neo Beam**
    - **5 MeV, 150 kW**
  - **Rhodotron**
    - **Up to 10 MeV and 700 kW**
  - **Minimum for industrial processing**
    - **10 kW**

# Electron Beam Processing

- **NIST**
  - **MIRF**
    - **1 kW at 10 MeV**

# Electron Beam Processing

- **NIST**

- Has two 10 MeV 17 kW Titan Scans
- Leave one at 10 MeV
- Tune one to 7 MeV and fit it with an X-ray target
- At least one should be setup to irradiate vertically
  - There should be a system so samples could travel under the beam



# **The Need for a National Electron Beam Irradiation Facility at NIST and How CIRMS can Help Facilitate its Creation**

- **Just my ideas**
- **Discussion**