

National Electrostatics Corp. (NEC) is the world's leader in the manufacture of electrostatic ion beam accelerator systems. These systems produce ion beams of essentially all stable nuclei with energies ranging from a few keV to hundreds of MeV.

NEC prides itself on making a wide variety of ion beam systems to meet the specific capabilities required. Although there is a wide range of individual models and customizations available, they can be divided into three distinct classes:

- U-Series Pelletron® accelerators provide **ion beams from 500keV to hundreds of MeV.**
  - For applications involving basic high energy ion beam research
  - Materials analysis and modification
  - Accelerator based mass spectrometry
  - High energy proton microprobes
  - Basic nuclear structure research
- S-Series Pelletron® provide **ion beams from 300keV to 20MeV.**
  - For applications involving MeV ion implantation
  - Surface analysis (RBS, PIXE, HFS, etc.)
  - Proton and helium microprobes
  - Accelerator based mass spectrometry (AMS)
  - Neutron generation
  - Wide range of applications for general science education and advanced research
- Open Air Systems for **ion beams from about 1keV to 500keV.**
  - For applications involving research ion implantation
  - Proton lithography
  - Ion injector systems

All of these ion beam systems are unique. No other manufacturer can offer high energy ion beam systems with an all-metal and ceramic accelerating tube assembly. The NEC accelerating tube has no organic material in the vacuum volume. It can be baked to provide ultra high vacuum conditions and an ultra clean environment for beam/target interaction.

The NEC Pelletron® accelerators utilize the world's most stable high voltage charging system. The metal pellet charging chain has proven itself in **over 230 accelerator systems in 33 countries** to provide long life and low maintenance while providing extremely stable terminal voltage conditions.

NEC also manufactures all of the ion beam handling components and many ultra high vacuum components used for accelerator systems. Positive and negative ion sources, lenses, beam profile monitors, slit systems, Faraday cups and many other components are available in both standard and custom designs.



National Electrostatics Corporation is an independent, employee owned company incorporated in Middleton, Wisconsin. NEC was formed in 1965 and, to date, over 230 Pelletron® systems have been sold or are in manufacture for laboratories in 33 countries throughout the world.

Approximately 95 employees work in the 6,670 square meter complex where NEC has a complete manufacturing facility that includes metal/ceramic bonding, computer and manual machine shops, electronic assembly, component assembly, extensive ion beam system assembly and test areas. The facility also includes research areas for ion source development and a 4MV test Pelletron® accelerator which is used for product improvement and special projects.

Of NEC employees, 6 hold doctorates in fields related to ion beam research and design. There are approximately 70 other professionals with varying skills, including electrical and mechanical engineers, ion beam system technicians and craftsmen.

NEC is located 20 minutes from the Dane County Regional Airport in Madison, Wisconsin and is approximately a 3 hour drive by car north of Chicago, Illinois.



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