Micro Miniature X-ray Source

NEW

MiMi-X

Application

Micro Miniature X-ray Source

Medical	■Radiation Therapy ■Tunica Vasculosa Irradiation ■Diagnostic X-ray Source ■Substitution of Isotope Source
Industrial	■Nondestructive Inspection ■Surface Treatment and Surface Analysis ■Sterilization ■Production Process for Semiconductor
Research	■Medical Science ■Biology ■Physics ■Chemistry ■Engineering ■Pharmacy

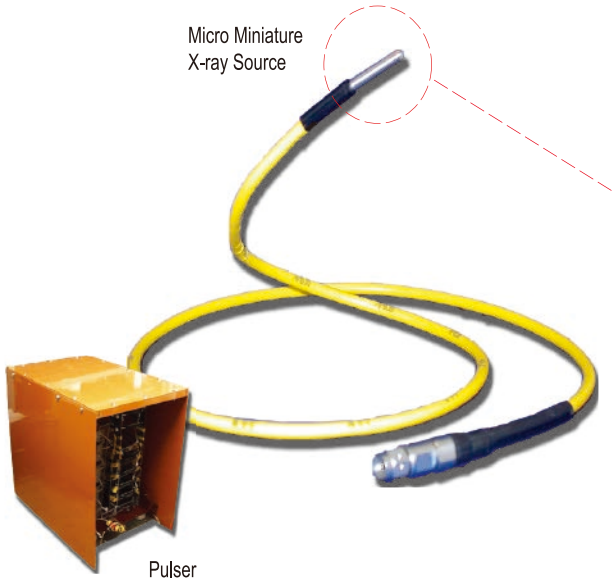
AET

Micro Miniature X-ray Source

The Micro miniature X-ray Source, an innovative technology developed by AET, Inc. can accelerate electron beams in a high-gradient electromagnetic field by a micro miniature X-ray tube, and extract X-rays from a target. It is also possible to extract only electron beams through a vacuum thin film. The micro miniature X-ray source consists of a flexible coaxial cable and the micro miniature X-ray tube with a carbon nano tube cathode, which has been recently developed using high-voltage and ultra-short pulse technology. It has applications in research, industry and medicine, as shown in the table on the front page.

Feature

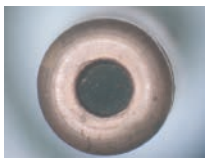
■Easy and safe handling ■Outstanding controllability ■Local irradiation with a small radiation source
■Stable electron emission by using a field emission carbon nanotube ■Reduce waste materials



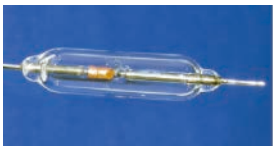
Carbon Nanotube
Yahachi Saito, Sashiro Uemura,
Carbon 38 (2000) 169-182
NORITAKE ITRON CORP.

Micro Miniature
X-ray Tube

Electron Emission
(Cathode)

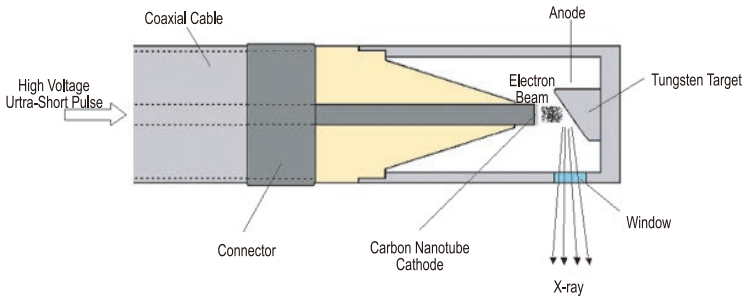


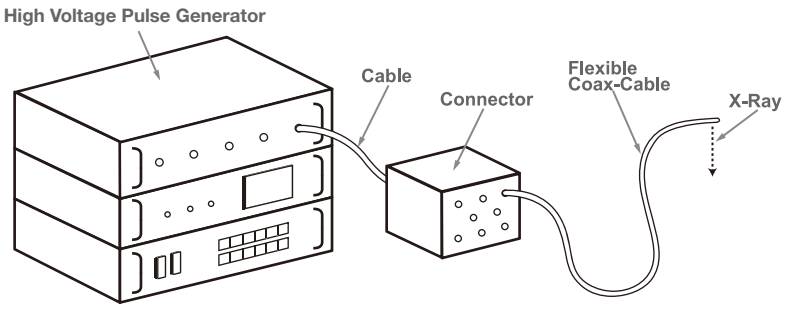
Metal Tube Type



Glass Tube Type

Figure





Specification

Beam Voltage	Continuously Variable (60kV max)
Peak Beam Current	1kA max
Pulse Width	20nsec
X-ray Tube Diameter	＜φ5mm
Dose Rate	＜20Gy/min

＊These devices are under development. ＊Patent No. 3090910 ＊A transmission cable and an electron beam accelerator are consumable supplies.

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