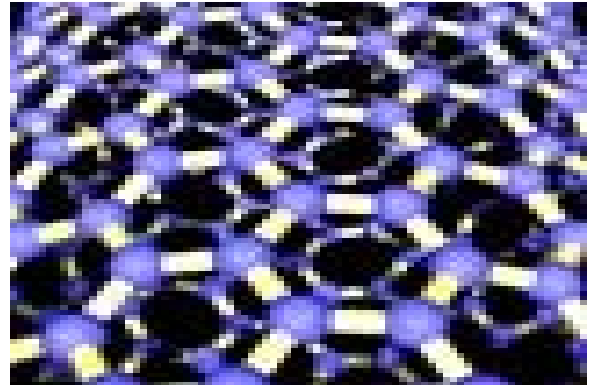


The Opportunity

Researchers at the National Institute of Advanced Industrial Science and Technology (AIST) of Japan have developed and patented a method of producing a nanotube composite surface that is useful as an electron beam electrode.

Field Emission Displays (FEDs) are new and promising flat panel displays with much reduced power consumption compared to PDPs or LCDs.

FEDs feature high brightness and high efficiency for excellent image quality. In addition, they deliver a wide viewing angle and fast response time for videos. In effect, FEDs are thin, flat, and low-power CRTs.



Technology Parameters

The key requirement is for the ion beam to be at an irradiation angle less than 20 degrees with respect to the line normal to the surface.

- Involves irradiating a carbonaceous material with an ion beam powers source.
- Fullerenes are the preferred carbon source material, but graphite or amorphous carbon may also be press molded in a variety of configurations (film, plate, rod, cylinder, block, or any other suitable shape).
- Ion beam may be halogen gas, nitrogen, or gallium, preferably at an ion acceleration voltage of 3,000-10,000 V; ion current of 1-100 mA for 10-30 minutes; and at pressures near vacuum (about 5×10^{-5} Torr or less).

The primary U.S. patent by Yamamoto, Koga, and Fujiwara is described as follows:

US Patent	Features
5,773,834	<ul style="list-style-type: none"> • Formation of carbon nanotube composite on a carbonaceous body. • Produced by irradiating the surface with an ion beam to form a layer of carbon nanotubes on the surface. • Composite is useful as a cathode of an electron beam source element, e.g. in FEDs (Field Effect Displays). • Cited by more than 50 patents.

Intellectual Capital

AIST (National Institute of Advanced Industrial Science and Technology) is Japan's extensive public research organization established in 2001. AIST and its predecessors have advanced technology and supported Japanese industries since 1876.

Although not specifically a government institution, AIST is largely funded by the Japanese government.

Comprised of more than 50 autonomous research units in various innovative research fields and employs about 2500 research scientists and well over 3000 visiting scientists.

AIST Home Page:

www.aist.go.jp/aist_e/about_aist/index.html

For More Information

AIST is seeking to license this technology and provide assistance with its commercialization success to qualified organizations.

Consideration will be provided to a range of financial, strategic, and commercial investment options.

Certain circumstances will warrant consideration for nominal funding from AIST.

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