

Field emission cathode gating for RF ELECTRODE GUNS and planar focusing cathodes

The U.S. Patent and Trademark Office recently issued a patent to Argonne inventors John Lewellen and John Noonan of the Advanced Photon Source. Their patent, "Field emission cathode gating for RF electrode guns and planar focusing cathodes," was issued on January 16, 2006. It describes a novel method for gating electron emission for RF electron guns. This method will provide a high brightness, very low emittance beam and MeV-range beam energies in a fashion that does not require the use of either an external drive laser or a hot filament to produce electrons.



Potential uses of the invention include its use in high-power free-electron lasers and terahertz sources. It could also lead the way in the development of compact high-voltage electron microscopes. The inventors also believe that improvements in electron-beam welding, electron-beam lithography, and oncology treatment may be possible due to the quality and size of the beam produced by the invention.

Patent

US 6,987,361B1, January 17, 2006, Field Emission Cathode Gating for RF Electron Guns and Planar Focusing Cathodes, John W. Lewellen and John Noonan.

For More Information

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