Title (en)

MICROWAVE DEVICE FOR ACCELERATING ELECTRONS

Title (de)

MIKROWELLENVORRICHTUNG ZUR ELEKTRONENBESCHLEUNIGUNG

Title (fr)

DISPOSITIF HYPERFREQUENCES D'ACCELERATION D'ELECTRONS

Publication

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Application

EP 10745594 A 20100819

Priority

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Abstract (en)

[origin: WO2011020882A1] The invention relates to a microwave device for accelerating electrons, comprising an electron cannon (50) that provides an electron beam (54) along an axis ZZ' in a microwave structure (60) for accelerating the electrons of the beam, having, at one of the ends (62) thereof, on the electron cannon side, an input (66) for the electron beam, at the other end (64), an output (68) for the accelerated electrons, between the two ends of the structure, a series of n cavities C1, C2,... Ci,... Cx,... Cn coupled, along said axis ZZ', to a central resonance frequency fO, an input (74) for a microwave signal Urf for exciting the microwave structure by means of one of cavities C1 of the series of n cavities, a radiofrequency generator (76) providing the microwave excitation signal Urf to the microwave acceleration structure, a central processing unit UC (90) configured to control the energy variation of the electrons exiting the microwave structure. The radiofrequency generator (76) comprises a frequency-controlling input (78) for changing the frequency Fv of the microwave excitation signal Urf around the central resonance frequency fO, the change in the frequency Fv of the excitation signal producing a variation in the energy of the accelerated electrons of the beam exiting the microwave structure (60). The invention can be used for inspecting containers by irradiating photons or for medical radiation therapy.

IPC 8 full level

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CPC (source: EP US)

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