

Title (en)

THROUGH TRANSMISSION X-RAY SYSTEM WITH ELECTRON MANIPULATION AND METHODS OF USE

Title (de)

DURCHSTRAHLUNGS-RÖNTGENSYSTEM MIT ELEKTRONENMANIPULATION UND VERWENDUNGSVERFAHREN

Title (fr)

SYSTÈME À TRANSMISSION DIRECTE DE RAYONS X PAR MANIPULATION D'ÉLECTRONS ET PROCÉDÉS D'UTILISATION

Publication

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Application

EP 22799636 A 20220505

Priority

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- US 2022027943 W 20220505

Abstract (en)

[origin: WO2022235985A1] A through transmission-ray system with electron manipulation and accompanying methods of use are disclosed. The system may include an x-ray tube for accelerating influenced electrons under a high voltage potential for the purpose of irradiating samples. The x-ray tube may include an evacuated and vacuum sealed housing, a through transmission target anode deposited on the housing, a filament within the housing, and a cathode structure for facilitating manipulation of emitted electrons using a waveform generator, electrostatic poles, lenses, radio frequency signals, and/or magnetic fields. The cathode structure may emit electrons toward the target anode and may facilitate electrostatic and/or magnetic influence of the emitted electrons to generate a plurality of x-ray field shapes and/or patterns. Additionally, the cathode structure may be utilized to adjust the electron trajectories of the electrons to optimize irradiation of samples within range of the x-ray tube depending on the relevant use-case scenario.

IPC 8 full level

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