System And Methods For Acoustic Monitoring Of Electron Radiotherapy

Tech ID: 34022 / UC Case 2024-929-0

BRIEF DESCRIPTION

A novel technology for real-time, non-invasive monitoring and adaptive control of electron radiotherapy treatments using acoustic signals.

FULL DESCRIPTION

This technology uses an ultrasound transducer array to monitor electrotherapy treatments in real-time. By administering ultra-short electric pulses for therapy, an electric field is generated, inducing acoustic signals. These signals are detected by the transducer array and used to construct tomographic images representing the electric field, enabling real-time imaging and dosimetry during electron beam radiotherapy.

SUGGESTED USES

- Adaptive radiotherapy systems for cancer treatment.
- Real-time imaging and monitoring devices for medical physics and radiology.
- Medical devices for precision medicine, specifically in oncology treatment planning and execution.

ADVANTAGES

- Real-time, in vivo dosimetry and monitoring of electron beam radiotherapy.
- Non-invasive and does not require additional radiation exposure for the patient.
- Capable of individual pulse monitoring for precise dose mapping and adaptation.
- Utilizes a matrix array for 3D imaging and dose deposition from single pulse irradiations.
- Improves the precision of radiotherapy treatments, potentially reducing adverse effects.

PATENT STATUS

Patent Pending

RELATED MATERIALS

- System and method of electric-induced acoustic tomography for electrotherapy monitoring

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OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
  - Health
- **Imaging**
  - Medical
- **Medical**
  - Devices
  - Disease: Cancer
  - Imaging

RELATED CASES

2024-929-0

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