Radiotherapy Planning Tool That Achieves Multi-Beam Function from Single Beam System

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing software that improves treatment planning for electron radiotherapy.

OVERVIEW

Radiotherapy employs high-energy radiation to treat tumors. Electron radiotherapy is especially useful for superficial cancers, such as skin, breast, head and neck tumors, because the effect of the radiation decreases rapidly as it penetrates the tissue.

The amount and placement of the radiation must be controlled to achieve an effective dose while minimizing damage to surrounding tissue. This control is achieved by varying the beam size and intensity, or by placing a bolus made of tissue-mimicking material over the skin of the patient. An intensity modulated electron beam provides even greater control by dividing the beam into multiple ‘beamlets.’ However, intensity modulated electron beam sources are not available in most clinics.

THE INVENTION

UW-Madison researchers have developed a method of achieving multiple beam function from a standard, single beam radiotherapy system. A user inputs the desired dose based on depth of therapy along the center of the beam. The program determines the optimal beam energy, beam size and bolus thickness needed to provide the desired dose. The results are presented on a graph that plots the depth of each possible combination. The chosen combination then is entered into a traditional treatment system and implemented with successive exposures from a radiation therapy machine.

APPLICATIONS

• Electron radiotherapy for cancer treatment

KEY BENEFITS

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.
• Operates on a stand-alone desktop computer
• Results are displayed simply and intuitively.
• Treatment may be selected from multiple combinations of exposures.
• Provides a comprehensive view of a variety of treatment combinations
• Provides improved dose profiles
• Also may be used with combined electron/photon sources

ADDITIONAL INFORMATION

Publications

Tech Fields
Radiation Therapy - Treatment planning
Information Technology - Software

CONTACT INFORMATION

For current licensing status, please contact Jeanine Burmania at jeanine@warf.org or (608) 262-5733.