The Core Technology

Accurate radiation exposure and protection of normal tissue are important considerations for a patient undergoing radiation therapy. Commonly the skin surface may receive a significant dose during procedures external beam therapy and HDR Brachytherapy. Novel to the MO Skin technology is the development of a real time dosimeter with a reproducible effective depth of measurements close to 0.070mm. This is equal to the ICRP recommended depth of the first important radiosensitive layer of the skin for radiation skin damage.

Current commercially available solutions based on MOSFETs devices use wire bonding and an epoxy bubble to encapsulate the sensor, the epoxy bubble making measurements at equivalent depths of 0.070 mm difficult to reproduce from one to another sensor.

MO Skin, a new MOSFET-based detector designed by the Centre for Radiation Physics takes advantage of a novel packaging design enabling reproducible depth of measurement. The design diversifies the use of MOSFETs for dosimetry in radiotherapy and radiation protection.

Applications

Initial product developments have focused on creating a technologically advanced ‘Prostate Immobilizer Balloon System’, which supports adaptive radiation therapy for prostate cancer patients, by incorporating a MOSkin sensor for real-time in vivo dose measurements at the rectal wall. UOW licensed the real time dosimetry technology to US Texas company Radiadyne for its Prostate Immobiliser System.

MO Skin clinical dosimetry system have been validated for accuracy within commercial treatment planning systems (TPSs) in the rectal cavity for both external beam radiotherapy and HDR Brachytherapy.

- MO Skin clinical dosimetry system can be applied to general Real-Time Dosimetry applications
- MO Skin clinical dosimetry system has been applied for dose verification during IMRT of nasopharyngeal carcinoma patients and a custom mouth piece designed to house the MOSkin detector.

Advantages of MOSkin dosimetry systems:
1) Sensor: Small size, Temperature independent, and Disposable or multiuse.
2) Real time dosimetry
3) Almost tissue equivalent, and
4) Excellent tool for skin and surface dosimetry.

The Market

Moskin has a broad base of clinical applications especially where skin dose is of concern, providing Real-Time Dosimetry in adaptive radiation therapy.

IP Position

A number of international patents have been registered.

Commercialisation Strategy

UOW has in place a licensee for the MOSkin technology for use in balloon applications only, and we consider expressions of interest from licensees for the range of applications for which MOSkin is suited in clinical dosimetry systems.

MORE INFO:

To discuss your options, contact one of our Managers of Innovation and Commercialisation (MIC).
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