

Wireless Tracking for Radiation Cancer Therapy

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- Biomedical Engineering

Keywords:

- Biomedical Engineering
- Biosensors
- Cancer
- Cancer Therapy
- Radiation
- Sensors
- Wireless

A serious side effect of radiation therapy for cancer treatment is that it kills healthy cells as well as cancerous cells. To limit the damage to healthy tissue, radiation is directed only to the area around the tumor, which is not easy because of organ movement within the body. Organ movement must be tracked to minimize collateral damage. Wired and wireless tracking systems currently exist, but both have drawbacks. Wired systems require wires to extend through the skin, which increases the risk of infection and can be mentally distressing to a patient. Existing wireless systems use passive transponders and can only track one at a time.

Researchers at Purdue University have developed a novel wireless magnetic tracking system that may include a plurality of transmitting coils each configured to generate a magnetic field when energized by active transponders, which may include at least two magneto-resistive sensors. Multiple transponders can be tracked quickly and accurately. The transponders can also function as dosimeters to measure the radiation intensities at various sites.

Advantages:

- Transponders have integrated sensors
- Multiple transponders can be used

Potential Applications:

- Medical/Healthcare
- Cancer treatment
- Radiation therapy

People:

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Intellectual Property:

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