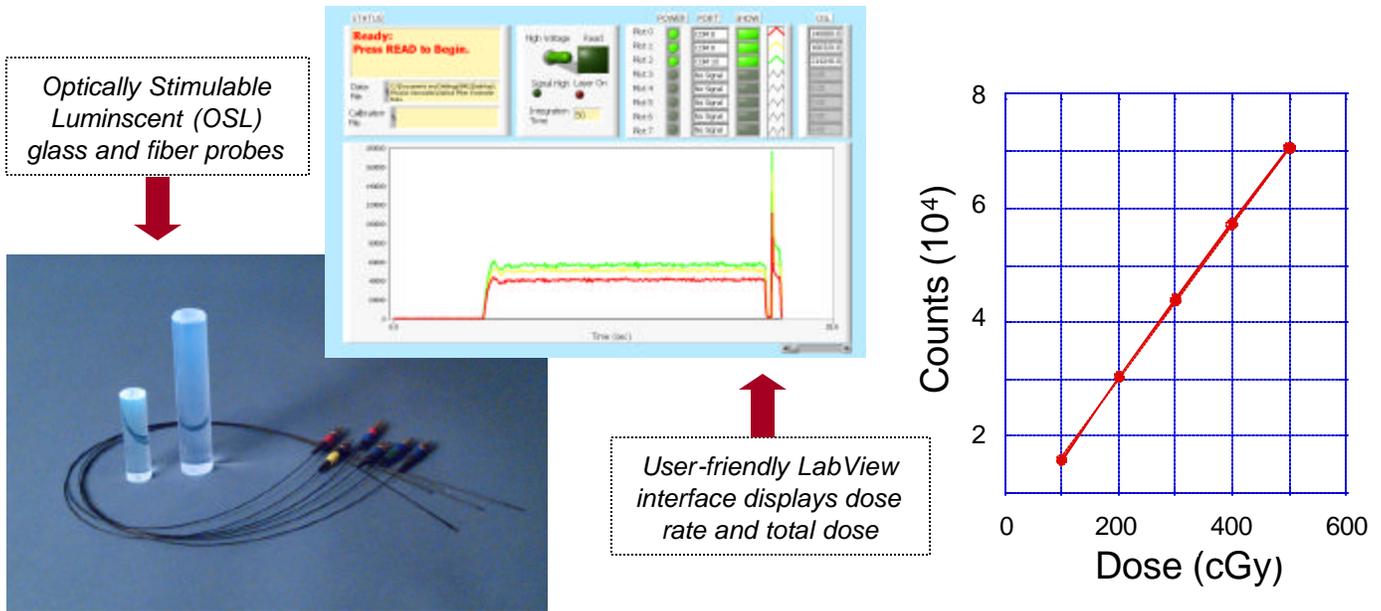


OPTICAL FIBER RADIATION DOSIMETER



The Naval Research Laboratory (NRL) has developed a fiber-optic-coupled dosimeter based on NRL's patented luminescent glass. The glass, when exposed to short-wavelength light or ionizing radiation, emits fluorescence and stores trapped charge. The all-optical dosimeter can perform remote, in-situ, real-time measurements of radiation doses, including in hazardous or inaccessible areas. The charge trapping characteristic allows for dose integration and subsequent read out at any convenient time.

Features and advantages include:

- In situ, real time measurement of dose rate and total accumulated dose
- High sensitivity over a wide range of doses
- Compact, low cost optical probe (can be disposable or may be reused indefinitely)
- All optical → no electromagnetic interference
- Capable of withstanding exposure to moisture, high temperatures and corrosive environments
- No heavy metals; environmentally and biologically friendly
- Easily manufactured in large quantities

Applications include:

- **Medical:** real-time dose monitoring during diagnostic and therapeutic x-ray procedures.
 - In vivo, real-time patient dose monitor for radiotherapy
 - Fluoroscopic procedures (prevent or reduce skin injury)
- **Environmental monitoring:** remote monitoring of radiation in nuclear facilities or in soils or groundwater. Fiberoptic-coupled sensors can be located several kilometers from readout unit.

Licenses are available to companies with commercial interest.

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