

RADIATION DETECTORS BASED ON LUMINESCENCE OF LITHIUM FLUORIDE THIN FILMS

Innovations and Benefits -

- sensitivity to ionising radiations (X rays, γ rays, protons, ions, neutrons);
- high spatial resolution (up to 50 nm);
- wide field of view ($> 1 \text{ cm}^2$);
- efficient readout optical process;
- easy handling;
- versatility.

Uses - Dosimetry and X-ray imaging for scientific, bio-medical and industrial applications. Nuclear and radiation protection detectors.

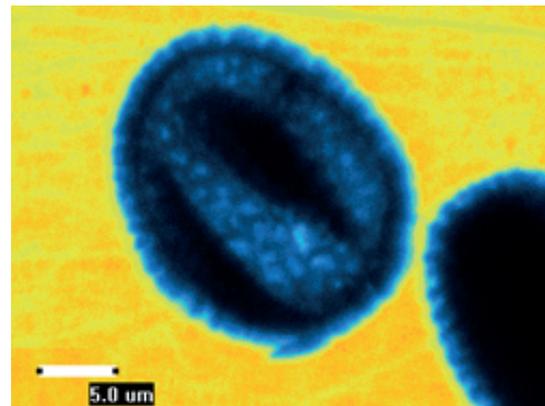
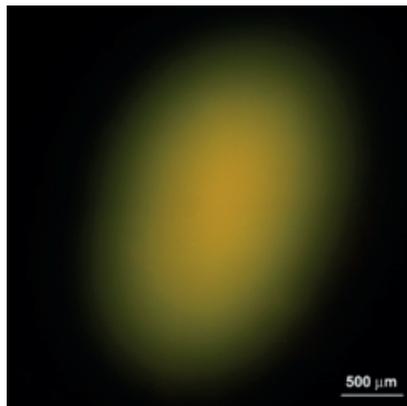
Past and Present Activities - Study and calibration of LiF based detectors for clinical dosimetry and X-ray imaging. R&D of LiF thin film-based detectors with enhanced sensitivity by optimization of their thickness and optical and structural characteristics.

Advanced diagnostics of proton beams, X-ray microradiography of cells, even for in vivo specimens.

Growth of LiF films, enriched in ^6Li , for thermal neutron detectors.

In progress experimental tests:

- CNAO - National Center of Oncological Hadrotherapy for the treatment of tumors, Pavia.
- Elettra - Sincrotrone Trieste S.C.p.A.



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