lexsygsmart

the most sensitive TL/OSL reader

Applications

Luminescence dating | Material research | Authenticity testing
Accident dosimetry | Radiation protection | Food irradiation
Solid state dosimetry | Bioluminescence and more

Features of **lexsyg**smart

Compact design

Provides thermal and optical stimulation for up to 3 different wavelengths

No crosstalk

Independent operation of measurement chamber and sample changer ensures absence of stimulation and radiation crosstalk

Flexibility

Software controlled switch of detection filters within a measurement sequence

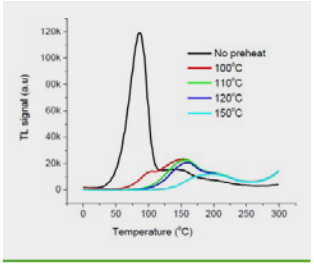
Homogeneity

Highly homogeneous and stabilized optical stimulation provides identical measurement conditions

Accessibility

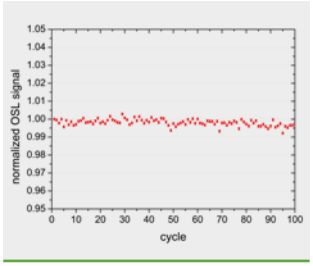
IP based system allows remote operation and technical support from anywhere in the world

Dosimetry



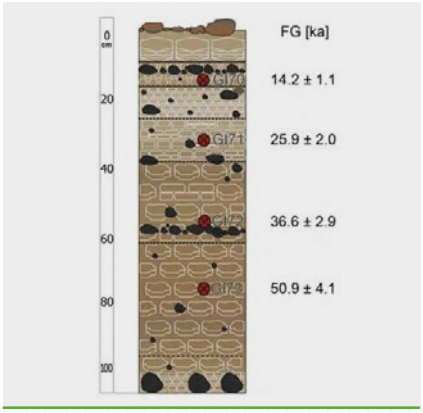
Preheat tests for thermoluminescence analysis (from Ademola et al., 2017).

Reproducibility

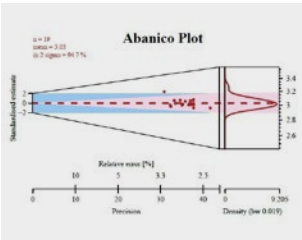


Normalized 1st second OSL response of Al_2O_3:C to 100 cycles of identical beta irradiations (Richter et al., 2015).

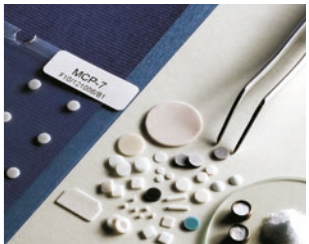
Luminescence dating



Sediment profile with sampling positions and results of fine grain quartz OSL dating (redrawn after Fuchs et al., 2015).



Analysis of equivalent doses of quartz OSL



TLD elements

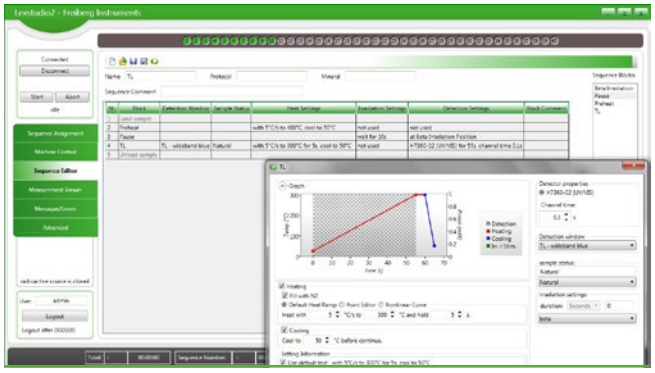
Authenticity testing of clay statues, pottery and ceramic objects

MS 5000 ESR spectrometer for ESR dating of tooth enamel, quartz and more

LexStudio – Operating Software

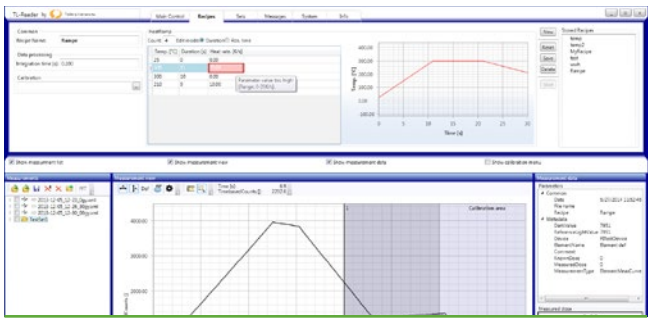
User-friendly and advanced operating software with:

- Multi-level user account management
- Automated SAR sequence generation (SARPI)
- Almost free parameter definition (individual/variable duration of stimulation, detection and heating)
- Data acquisition and storage of actual heater temperature
- Data export (ASCII-, bin-, binx-, XSYG- formats)
- LexEva – Data Evaluation Software



TLStudio – Software for routine TL dosimetry

- Intelligent parameter selection
- Live data visualization
- Easy programming of customized and standard measurement sequences
- Data acquisition, storage and export (xml- format)
- Automated background subtraction (optional)
- Storage of calibration values for individual dosimeters and automated processing of results



Configuration options

- Beta, Alpha or X-ray radiation sources
- Automated detection filter changer (incl. filters)
- Thermal stimulation up to 710 °C
- Other user-defined configurations available on request

Accessories

Aliquot preparation kit, LED head lamp, filters, sample cups/discs (Al, Ni, SS) and other sample preparation tools for luminescence laboratories

Technical specifications

Sample	automated 40-position sample changer
Sample carousel	two exchangeable sample carousels with 40-positions each
Thermal stimulation	up to 500 °C (default) 0.1 – 20 °C/s (@Tmax = up to 710 °C)
Optical stimulation	up to 3 wavelengths per OSL unit **Available stimulation wavelengths (LED/laser diodes)** UV (365 nm), Violet (405 nm), Blue (458 nm), Green (525 nm), Yellow (590 nm), IR (850 nm) **Modes of OSL operation:** · Continuous Wave OSL (CW-OSL) · Linear Modulated OSL (LM-OSL) · Pulsed OSL (POSL)
Detection unit	UV-VIS PMT (default), Optional: Red sensitive PMT, near-IR PMT
Laptop or PC requirement	Windows 7 or latest with 2 Ethernet ports
Power requirement	110 – 250 V AC, 4 A
Dimension	300 x 420 x 350 mm
Weight	up to 50 kg
Certification	manufactured under ISO 9001 guidelines, CE conform

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