lexsygresearch

the most advanced 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**research

Modular design

Interchangeable OSL stimulation units (up to 3 wavelengths per OSL), accommodates up to 4 detection units and up to 2 irradiation sources

No crosstalk

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

Nonstop operation

Ability to load and unload samples while another sample is undergoing analysis/treatment inside the measurement chamber

Flexibility

Software controlled switch of detection filters within a measurement sequence

Homogeneity

Highly homogeneous and stabilized optical stimulation provides identical measurement conditions

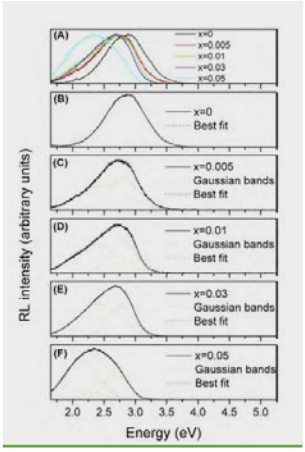
Accessibility

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

Easy upgrade

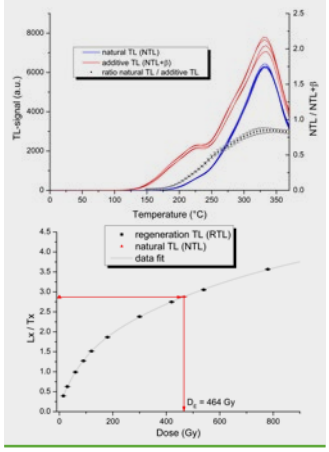
Modular design allows future expansion of device capabilities by easily adding components

Material research



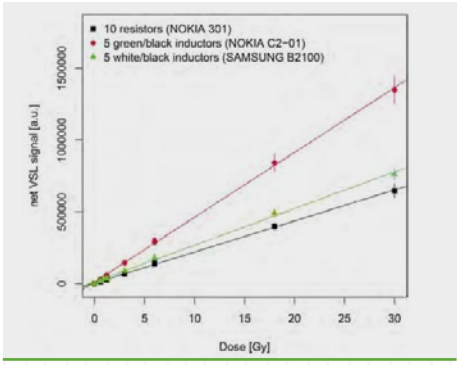
Radioluminescence investigation of Ce incorporation in LiLaZr (from Trofimov et al., 2017).

Luminescence dating

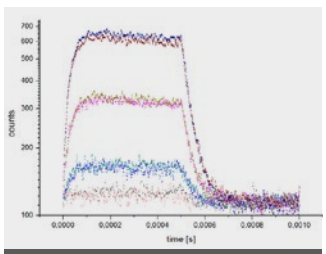


Thermoluminescence (orange-red TL) measurements of heated clay and SAR dose response curve measured with a red sensitive PMT (modified after Richter et al., 2017).

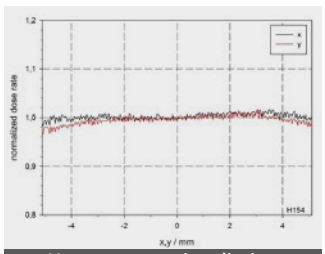
Dosimetry



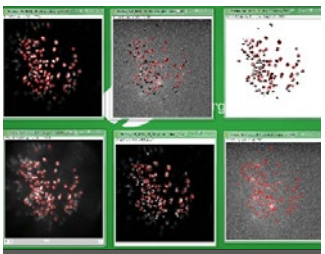
Violet-OSL (VSL) dose response curves for resistors and inductors (from Bassinet et al., 2017).



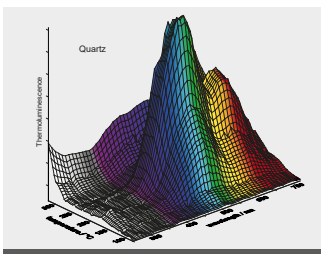
Pulsed OSL/Time resolved luminescence



Homogeneous irradiation with beta ring source (recommended for RF analysis)



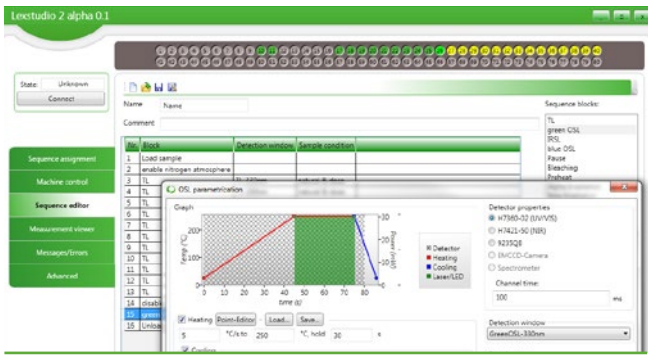
Spatially resolved single grain analysis using EMCCD



Spectral studies of luminescence

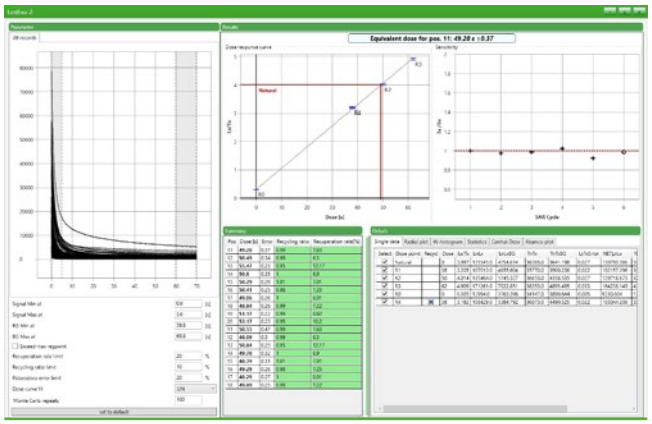
LexStudio – Operating Software

- 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-, XYSG- formats)



LexEva – Data Evaluation Software

- Based on *R-package Luminescence*
- SAR analysis (Radial plot, Abanico plot, etc.)
- Multiple aliquot regression analysis
- Reporting function (Print/PDFs)
- Automated background subtraction (optional)
- Data import (bin-, binx-, XSYG- formats)



Configuration options

- Beta, Alpha or X-ray radiation sources
- Automated detector changer (4 positions)
- Automated detection filter changer (incl. filters)
- Spatially resolved single grain analysis using EMCCD
- CCD based high sensitive spectrometry detection unit (UV/IR spectroscopy)
- LED-based bleaching unit (solar simulator)
- Sample camera
- Ultra-fast pulsing (< 10 ns); Time resolved luminescence
- Peltier cooling for for radiation defect characterization
- XRF add-on for element analysis of quartz and feldspar

Technical specifications

Sample	automated 80-position sample changer
Thermal stimulation	up to 710 °C 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), Red sensitive PMT, near-IR PMT, EMCCD, Spectrometer
Laptop or PC requirement	Windows 7 or latest with 2 Ethernet ports
Power requirement	110 – 250 V AC, 10 A
Dimension	716 x 1033 x 850 mm
Weight	up to 200 kg
Certification	manufactured under ISO 9001 guidelines, CE conform

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