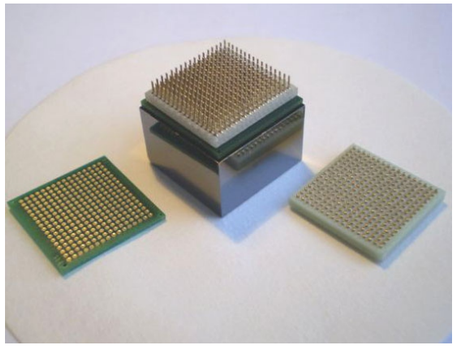
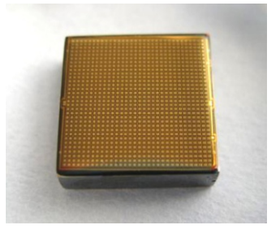
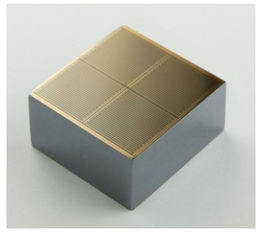
CdZnTe/CdTe detectors

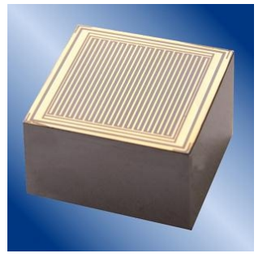
and associated electronics

CdZnTe/CdTe is a room temperature semiconductor which allows to create X- and gamma-ray detectors with comparably high energy resolution and high count rate capability without cooling. Detectors performance allow to use CdZnTe/CdTe detectors successfully in Nuclear Industry and Medicine, Safeguard and Homeland Security, many others industrial and laboratory applications.









Baltic Scientific Instruments develops and fabricates detectors based on CdZnTe/CdTe and accompanying electronics for them base on general electronic components and ASICs.
We are flexible in our technological processes and provide engineering design service and custom fabrication of small and medium volumes of devices.

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BALTIC SCIENTIFIC INSTRUMENTS

µSPEC
Gamma-Radiation CZT Micro Spectrometer

Gamma CZT Micro Spectrometer µSPEC is a high performance device based on room temperature CdZnTe semiconductor detectors and MicroMCA527. The µSPEC allows measuring, storing and processing gamma-radiation spectra in a PC through the USB port. The Spectrometer has changeable CdZnTe quasi-hemispherical detectors of different volumes of 60 mm^3, 500 mm^3 or 1500 mm^3.

Detector type	CdZnTe
Detector volute	60-1500mm^3
Energy range	20keV - 3.0MeV
Energy resolution at 662 keV	
µSPEC60, µSPEC500	<2.5%
µSPEC1500	<3.5%
Maximal throughput	<100 kcps
Number of channels	128, 256, 512, 1k, 2k
PZC adjustment	automated
Connector	Micro USB
Dimensions, mm	25 x 25 x 70
Weight, gram	80

y-Tracer GT2-1
Personal Radiation Detector (PRD)

y-Tracer is a portable hand-held device with an inbuilt room temperature operated CZT detector. y-Tracer can be used as a dosimeter and for detecting and searching gamma-radiation sources. y-Tracer is an energy-compensated device allowing accurate evaluation of the dose rate and dose equivalent of the X-ray and gamma radiation. It automatically monitors environment and alerts user in case of the radiation threat.

Detector type	CdZnTe
Detector volume	400mm^3
Energy range	30keV - 3.0MeV
Dose rate	0.05µSv/h - 100µSv/h
Dose	0.05µSv/h - 10Sv
Sensitivity for 137Cs	15 s^{-1}/(µSv/h); 0.15 s^{-1}/(µ/R/h)
Alarm type	LED, audio, vibration
Data recording	up to 3000 events
Connector	Micro USB
LCD type	monochrome
Environmental protection	Ip65
Operating time	up to 500h
Dimensions, mm	122 x 69 x 33
Weight	200 gram

SDP500, SDP1500, SDP4000
Spectrometric Detection Probes

Spectrometric Detection Probes SDP310/Z, SDP500S, SDP1500 and SDP4000 are room temperature operating portable devices with large volume CZT detectors. The detection probes are designed for application in equipment for recording and analysis of gamma-radiation energy spectra. The detection probes consists of the CZT detector and charge sensitive preamplifier.

Detector	Probe head dimensions, mm	Detector volume, cm^3	Bias Voltage, V	Energy Resolution at 662keV, %	Peak/Comptor at 662keV
SDP500	Ø24 x 58	0.5	≤ 1500	< 2.5	> 4.0
SDP1500	Ø32 x 58	1.6	≤ 2500	< 3.5	> 4.0
SDP4000	Ø40 x 58	4.0	≤ 3000	< 4.0	> 4.0