Energy Resolved Photon Counting Detector (ERPCD) and Material Decomposition System: Xprism®

Product Introduction

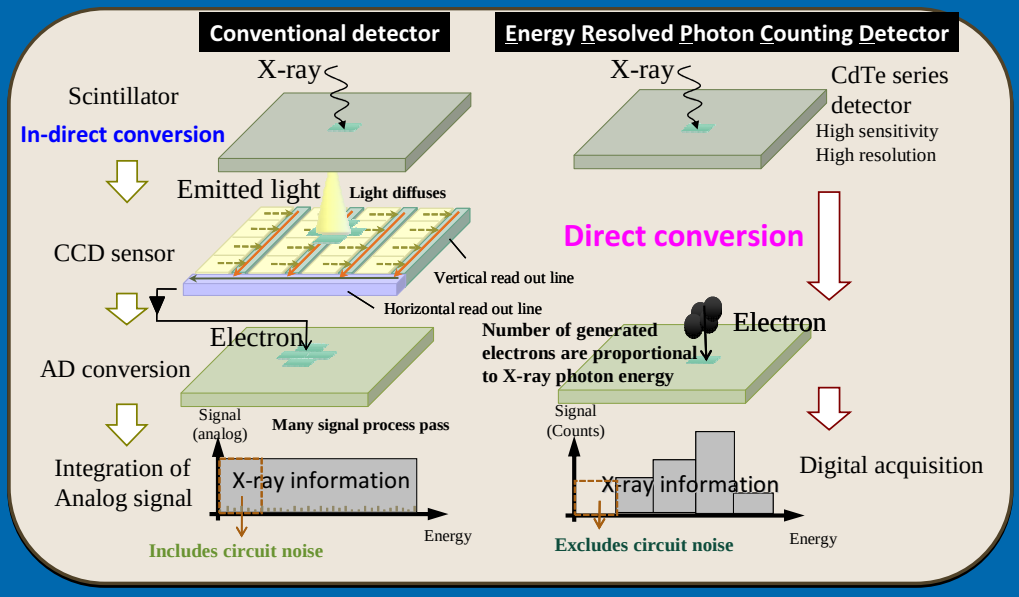
Please note that this device is still under the development and therefore the specifications in this document are subject to change without prior notice.

15th June 2018

JOB CORPORATION

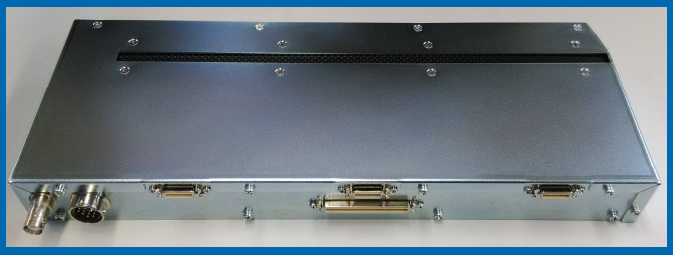
Energy Resolved Photon Counting Detector (ERPCD)

ERPCD opens a new era of X-ray imaging



Left: Comparison between conventional X-ray detector and Energy Resolved Photon Counting Detector (ERPCD). Low electric noise leads higher imaging contrast even at low X-ray dose rate. Multiple energy bins enable material decomposition.

Right: ERPCD prototype (30cm sensor length). Various sensor length can be configured by changing arraigned detector number. This unit is used with a data transfer unit which includes power supplies.



Item	Specification	
Detector material	Cadmium and telluride based compound semiconductor detector	
Detector thickness	1.5mm	
Detector size (/module)	16mm x 4mm (Pre-amp ASIC for ERPCD is mounted just under detector)	
Pixel size	200 μ m x 200 μ m	
Pixel number per module	1600	
Applicable energy range	Low energy range	15keV～50keV
	middle energy range	20keV～100keV
	High energy range	25keV～150keV
Energy bins	4 (Each threshold can select one from 128ch)	
Count rate characteristic	400kcps/pixel (10Mcps/mm^2) at 1% count loss	
Data transfer to a PC	Currently, CameraLink (base configuration)	
Acquisition frame rate	Up to 6600 FPS	
Power consumption	Less than 120mW/module	

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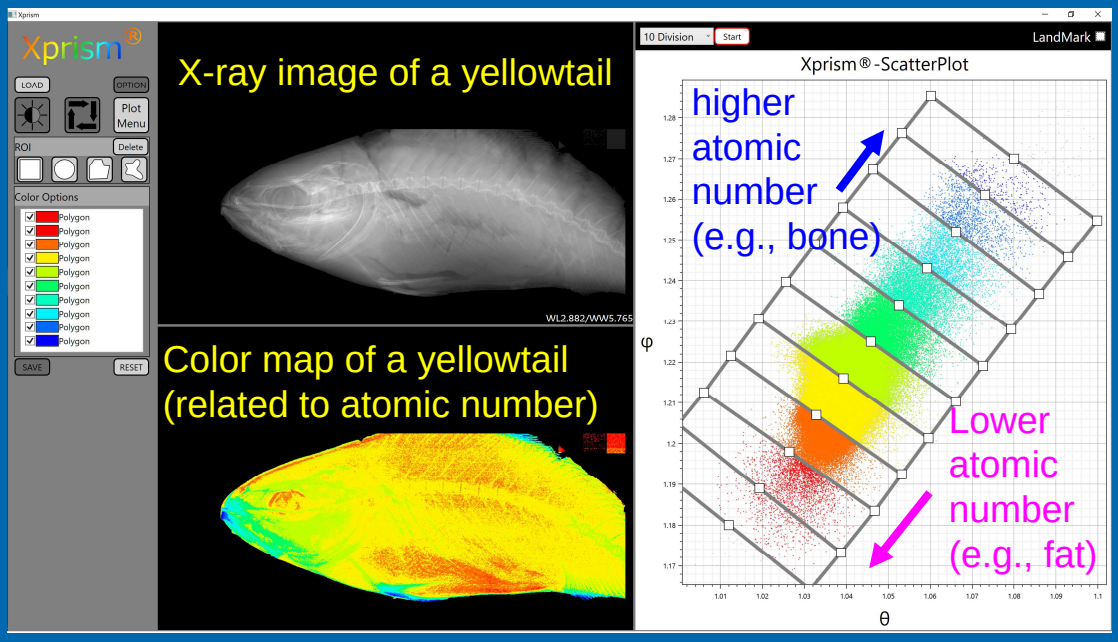
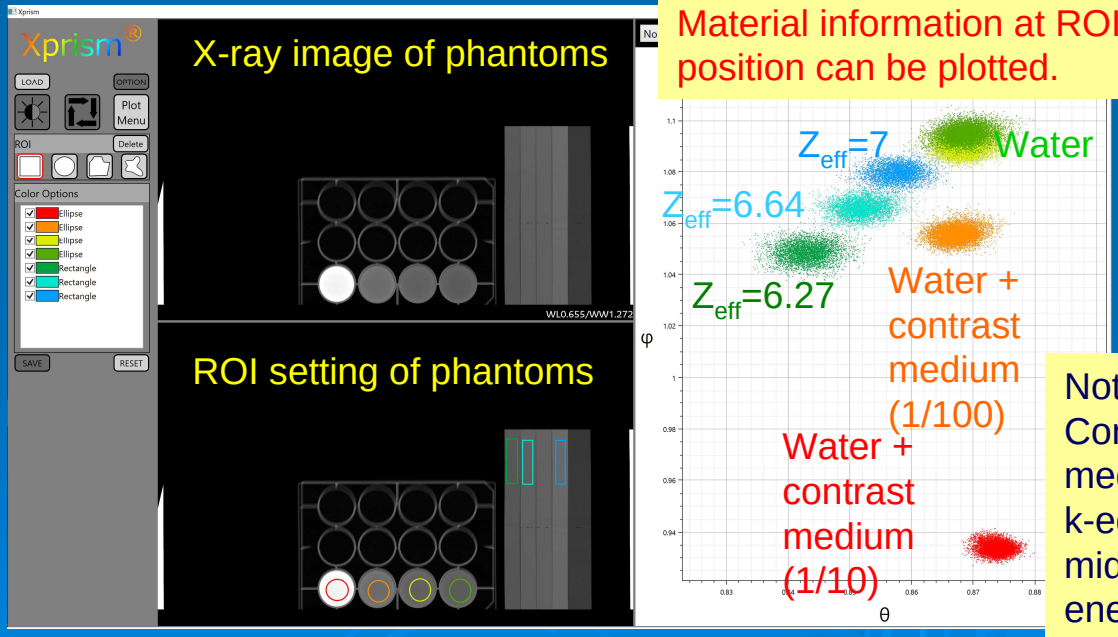
Material Decomposition System: Xprism®

Xprism® evaluates three linier attenuation coefficients of an imaging object by using 3 energy bins, respectively. Effective atomic number of the object can be determined. (Namely material decomposition can be performed.)

End user Xprism® Software is now under development.





Note: Contrast medium has k-edge in a middle energy bin.

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