ADVACAM

Imaging the Unseen

PHOTON COUNTING DETECTORS FOR SCIENCE & RESEARCH

Who We Are?

ADVACAM
Imaging the Unseen

THE COMPANY

ADVACAM designs, manufactures and sells digital material resolving color X-ray imaging cameras that represent the next generation of high-resolution and sensitivity imaging detectors.

We also offer professional consulting and application solutions in the area of X-ray technology.

TECHNOLOGY ADVANTAGES

High-tech spin-off company of an academic institutions.

20 years of experience in photon counting detectors.

Strong R&D team, consist of renowned scientists, engineers and programmers.

Leader in development of new technology and application solutions.

ADVACAM Group	Imaging Technology leader
ADVACAM cameras	ADVACAM semiconductors

Partners

- \+ Radalytica — Robotics systems
- \+ IEAP — Institute of Experimental and Applied Physics
- \+ INSIGHT ART — Art inspection
- \+ CERN — License of Technology

Company Highlights

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„Scientists For Scientists“
APPROACH

Top experts as part of team

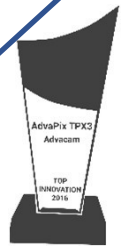
- Our scientific team consists of recognized scientists
- Excelent engineering skills
- Strong technology development

17 members
6 senior scientists
With 500+ publications

Global customer base

- Advacam cooperates with companies all around the globe
- Since 2016 we have branch in USA
- It is our priority to reach customers personally

Convenient customers in
12 countries
87% foreign resale



Best technology application

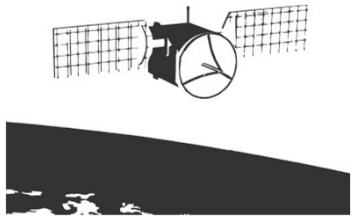
- World unique products and imaging methods
- Technology challenge winner 9sigma
- InVision magazine
- X-Mine EU Innovation Award

We hold
10+ patents
worldwide

Growing tendency

- Advacam is reaching more customers each year
- Technology export is getting Advacam a stable position on the market

4.5 mil €
turnover
With + 25 % av. growth

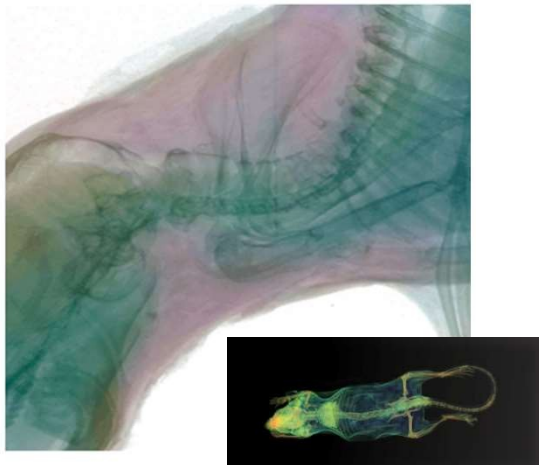


- NASA certified supplier
- Our detectors are capable of recording dangerouns environment in space
- Perfection of manufacture for space is standard to us

11 detectors
Already on the orbit

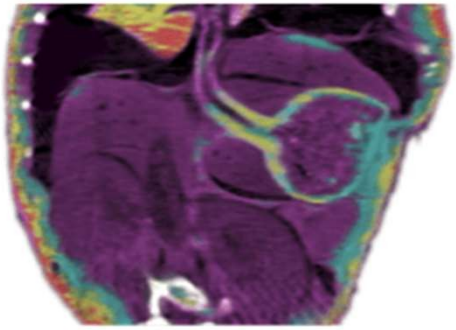
Application Fields

Biology Spectral Imaging



Spectral Radiography

The high sensitivity of photon counting detectors to low energy photons makes them useful for imaging low X-ray attenuating objects (i.e. light objects, such as tissue.) Thus these detectors are ideal for bio-related applications. The l X-ray energy sensitivity (starting from ~3 keV) together wi the high dynamic range reveals features in samples that remain hidden to other types of X-ray imaging detectors.

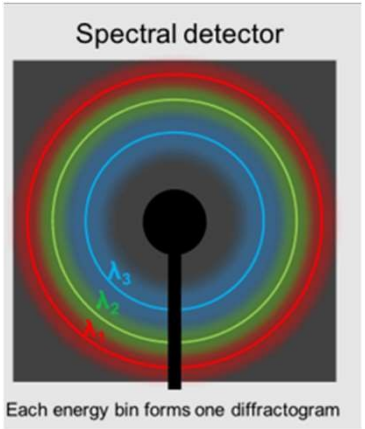


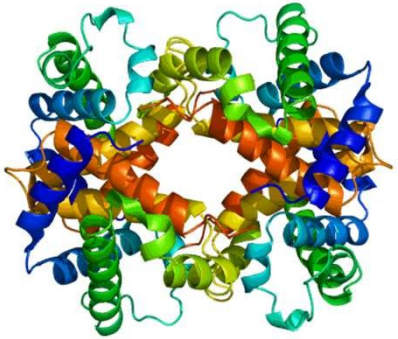
Spectral Computed Tomography

The spectral radiography can be extended to 3D by means computed tomography. This makes it possible to recognize different types of tissue in real form. Again, this level of information is can be incredibly helpful for cancer treatme research, as it gives better data for irradiation planning.

Application Fields

XRD/Crystalography





X-ray diffraction

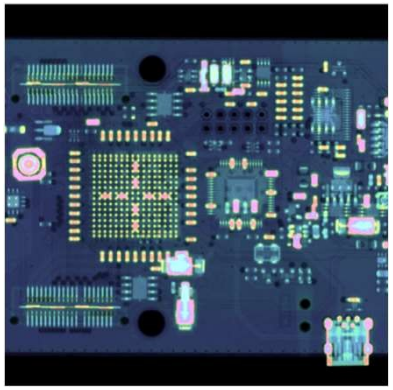
ADVACAM's spectral detectors based on Timepix3 chip with high resolution makes the diffraction system fast and compact. The sample analysis can be performed 100 times faster compared to the conventional systems. Due to fast speed of the analysis large areas of the sample can be analysed by scanning.

Crystallography

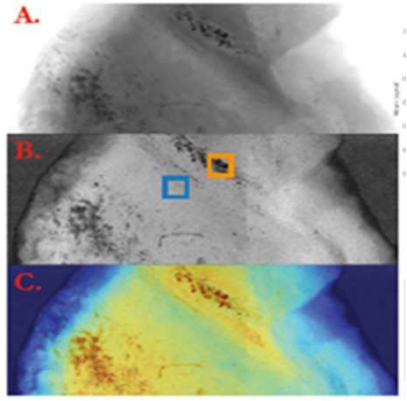
X-ray crystallography is used to study detailed atomic or molecular structure of the sample at synchrotrons. High frame rate PIXAQUAD is specially designed for combined Wide Angle X-ray Scattering (WAXS) and Small Angle X-ray Scattering (SAXS).

Application Fields

NDT/Material Analysis



The spectral NDT X-ray imaging based on photon counting provi
additional material information of the samples together with a
superior contrast and high spatial resolution. The spectral mater
information is used to discriminate different materials and ident
the materials of interest. The spectral image taken with WidePIX
5x5 CdTe of a PCB unveils different components in different colo

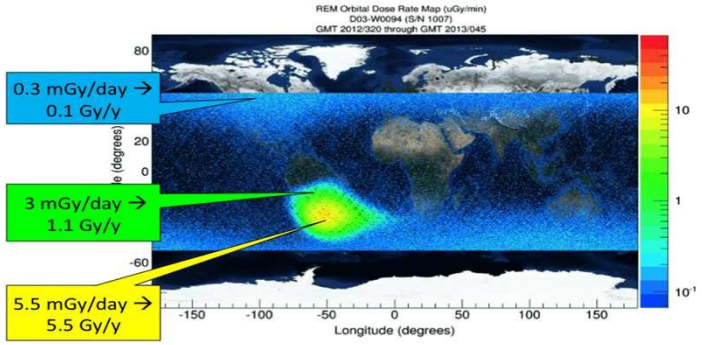


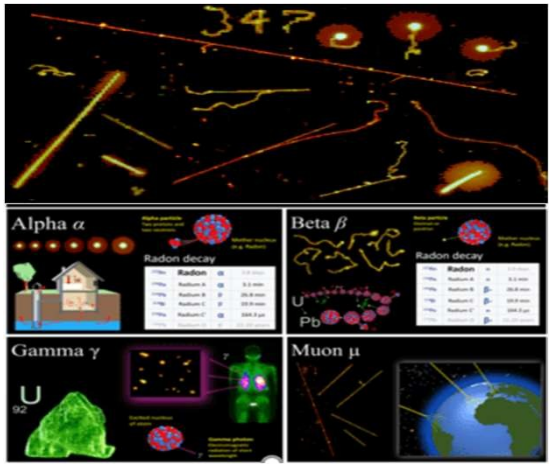
Iron ore with high density intrusions. Acquired at COMEX laboratory (COMEX SP. Z O.O., Poland)

Material Analyses

The energy sensitive photon counting detectors can help in this
area thanks to the option of material identification in images.
Online monitoring of technological processes during mineral
processing is another very important area where X-ray material
resolved imaging plays an important role. It helps to increase
effectivity of processing and reduce energy consumption leading
not only to reduced costs, but also to lower environmental effec

Application Fields





Charge particle tracking and space dosimetry
ADVACAM cameras are usedin the International Space Station (ISS) to track charged particles and measure their energy deposited to study and surveil the radiation exposure that astronauts face in space.

Education
Students can explore variation of the air radioactivit during the day, hunt for cosmic muons and check their directions, see how altitude affects presence o radiation types. They can construct shielding and check the laws of radioactive decay. Students can directly observe how different radiation types interact with matter and what happens then.

ADVACAM Detectors Product Portfolio

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https://advacam.com/advapix

WidePIX 5x5

WidePIX L 1(2)x5

WidePIX L 1(2)x15

WidePIX 1(2)x5

WidePIX L 1(2)x10

Single Photon Counting Technology_principles of detection

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Technology based on CERN CMOS chips Medipix3/Timepix3

Advantages:

Direct conversion: Radiation quantum => electric pulse => digital count

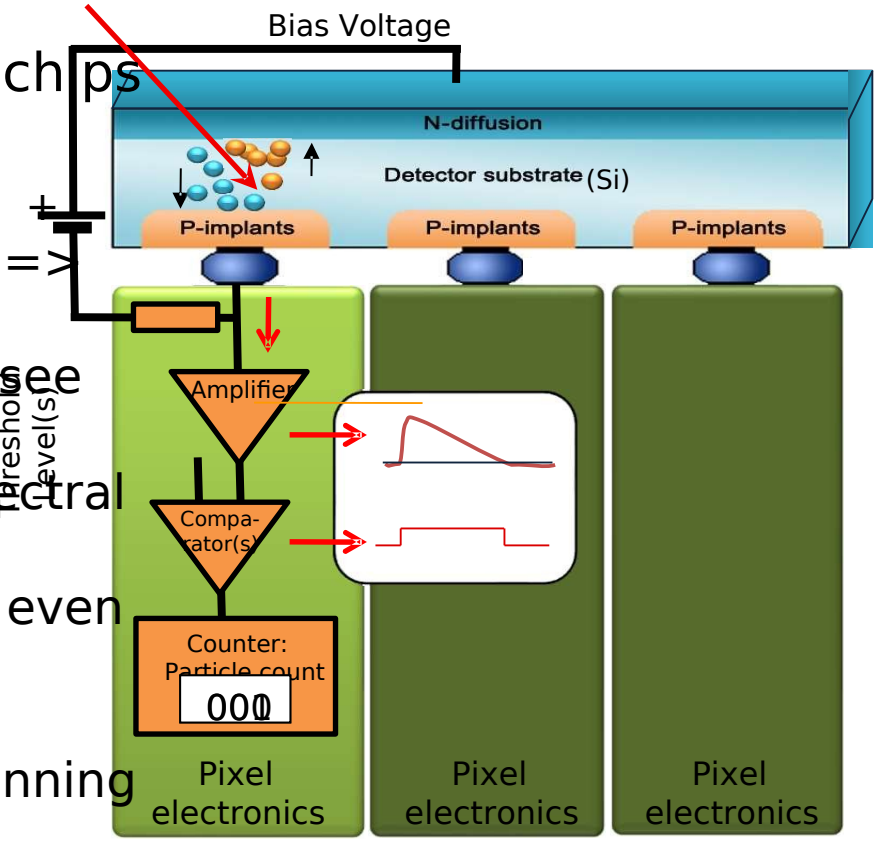
High resolution: 55 microns (or better see later).

Provides energy sensitive imaging (spectral too)

Very high SNR (~800) and CNR (SNRn even higher)

High speed (up to 1700 fps).

TDI mode for continuous industrial scanning implemented in hardware



Operating Software PIXET PRO

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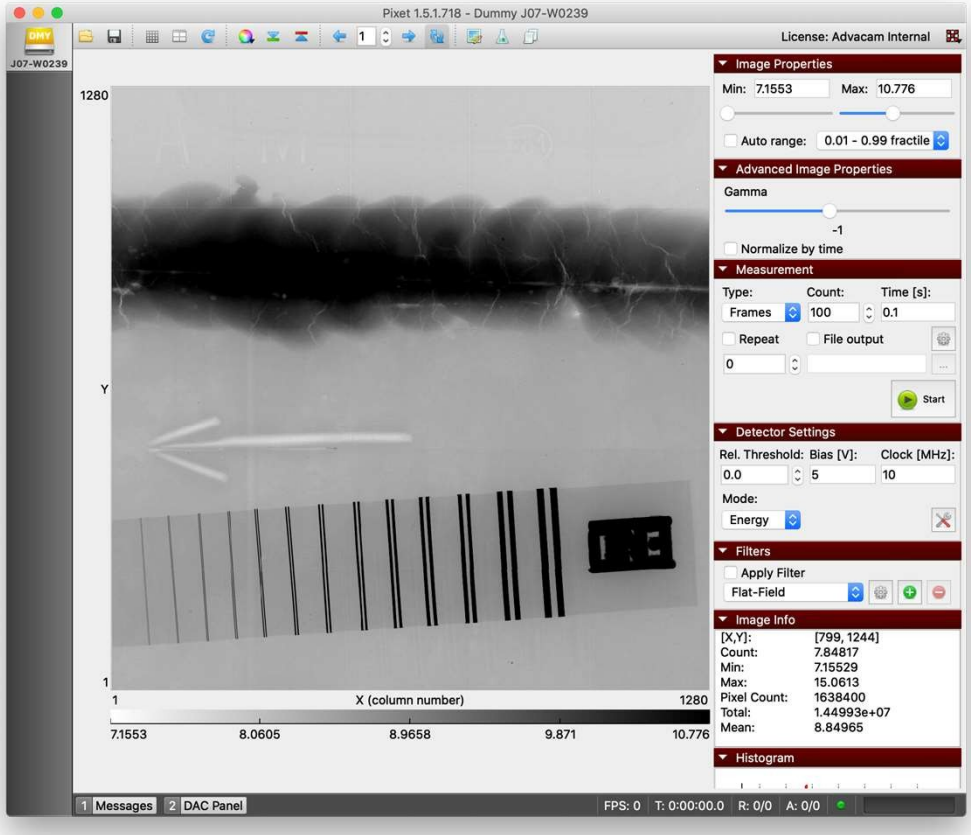
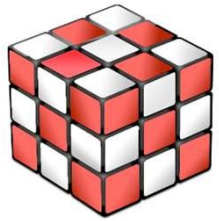


- Complete UI for detector setup and control
- Open for integration of additional HW
- Python scripting

- SDK with complete detector API
- LabView integration



TOP 50 Reference Customers Science & Research

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