Title (en)

GAMMA-RAY MICROSCOPY METHODS

Title (de)

GAMMASTRAHLEN-MIKROSKOPIEVERFAHREN

Title (fr)

PROCÉDÉS DE MICROSCOPIE PAR RAYONS GAMMA

Publication

EP 2992533 A1 20160309 (EN)

Application

EP 13730668 A 20130429

Priority

US 2013038708 W 20130429

Abstract (en)

[origin: WO2014178823A1] This invention teaches a method of performing gamma-ray microscopy and how to build a gamma-ray microscope as well as its equivalent X-ray microscope, and neutron microscope. The method uses projection microscopy with a single-point source of radiation projecting the image of a sample onto a detector array like a film being projected onto a big screen in a movie theater. The advancement here is the creation of point source of radiation small enough to be significant because the size of this point source determines the best resolution possible. The point source of gamma rays is created by crossing a beam of electrons or just ions and a beam of positrons where both beams can be focused to be as small as their De Broglie wavelength. Similarly, a point source for X-rays is generated by crossing a beam of electrons and a beam of ions. A point source of neutrons can be created by crossing a beam of electrons and a beam of protons with sufficient energy, or a beam of protons knocking neutrons out of a beam of mercury ions. Methods for sourcing positrons and ions are taught as well as other features that are necessary to perform these microscopy methods.

IPC 8 full level

G21K 7/00 (2006.01)

CPC (source: EP)

G21K 7/00 (2013.01)

Citation (search report)

See references of WO 2014178823A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2014178823 A1 20141106; EP 2992533 A1 20160309

DOCDB simple family (application)

US 2013038708 W 20130429; EP 13730668 A 20130429