CPC COOPERATIVE PATENT CLASSIFICATION

G01T MEASUREMENT OF NUCLEAR OR X-RADIATION(radiation analysis of materials, mass spectrometry G01N; counters per se G06M, H03K; electric discharge tubes for analysing radiation or particles H01J 40/00 , H01J 47/00 , H01J 49/00)

NOTE

This subclass covers the measurement of X-radiation, gamma radiation, corpuscular radiation, cosmic radiation or neutron radiation.

Attention is drawn to the Notes following the title of class G01.

G01T 1/00 **Measuring X-radiation, gamma radiation, corpuscular radiation, or cosmic radiation**(G01T 3/00 , G01T 5/00 take precedence)

G01T 1/003 . {Scintillation (flow) cells}

G01T 1/006 . {Total absorption calorimeters; Shower detectors}

G01T 1/02 . Dosimeters(G01T 1/15 takes precedence, measuring exposure time to X-rays H05G 1/28)

G01T 1/023 . . {Scintillation dose-rate meters}

G01T 1/026 . . {Semiconductor dose-rate meters}

G01T 1/04 . . Chemical dosimeters(G01T 1/06 , G01T 1/08 take precedence)

G01T 1/06 . . Glass dosimeters{using colour change; including plastic dosimeters}

G01T 1/08 . . Photographic dosimeters(sensitive materials, processing thereof G03C ; { photometry G01J 1/52 })

G01T 1/10 . . Luminescent dosimeters

G01T 1/105 . . . Read-out devices(G01T 1/115 takes precedence)

G01T 1/11 . . . Thermo-luminescent dosimeters{(thermo-luminescent compositions C09K 11/00)}

G01T 1/115 . . . . Read-out devices

G01T 1/12 . . Calorimetric dosimeters

G01T 1/14 . . Electrostatic dosimeters(construction of ionisation chambers H01J 47/02 ; { electrometers G01R 5/28 })

G01T 1/142 . . . Charging devices; Read-out devices

G01T 1/15 . Instruments in which pulses generated by a radiation detector are integrated, e.g. by a diode pump circuit(pulse rate meters in general G01R 23/02)

G01T 1/16 . Measuring radiation intensity(G01T 1/29 takes precedence; { self-powered detectors G01T 3/006 ; using an ionisation chamber filled with a liquid or solid, e.g. frozen liquid, dielectric G01T 3/008 })

G01T 1/1603 . . {with a combination of at least two different types of detector(see provisionally also G01T 1/16)}

G01T 1/1606 . . { with other specified detectors not provided for in the other sub-groups of G01T 1/16 (see provisionally also G01T 1/16)}

G01T 1/161 . . Application in the field of nuclear medicine, e.g. in vivo counting{(apparatus for radiation diagnosis A61B 6/00)}

G01T 1/1611 ... {using both transmission and emission sources sequentially(SPECT imaging G01T 1/1642 ; PET imaging G01T 1/2985 ; detecting hidden objects, e.g. weapons, explosives G01V 5/0008)}

G01T 1/1612 .... {with scintillation detectors(G01T 1/20 takes precedence)}

G01T 1/1614 .... {with semiconductor detectors(G01T 1/24 takes precedence)}

G01T 1/1615 ... {using both transmission and emission sources simultaneously(SPECT imaging G01T 1/1642 ; PET imaging G01T 1/2985 ; detecting hidden objects, e.g. weapons, explosives G01V 5/0008)}

G01T 1/1617 .... {with scintillation detectors(G01T 1/20 takes precedence)}

G01T 1/1618 .... {with semiconductor detectors(G01T 1/24 takes precedence)}

G01T 1/163 ... Whole body counters{ hand or feet contamination measurement G01T 1/167 ; lung, brain, thyroid, kidney or the like counting G01T 1/16 }

G01T 1/1635 .... {involving relative movement between detector and subject; scanning beds(profile scanning G01T 1/166 ; positioning patients, tiltable tables for radiation diagnosis A61B 6/04)}

G01T 1/164 ... Scintigraphy(radioisotopes G21G 4/00 ; tracers G21H 5/00 ; { measurement of spatial distribution G01T 1/2914 ; apparatus for radiation diagnosis in different planes A61B 6/02 })

G01T 1/1641 .... {Static instruments for imaging the distribution of radioactivity in one or two dimensions using one or several scintillating elements; Radio-isotope cameras}

G01T 1/1642 ..... {using a scintillation crystal and position sensing photodetector arrays, e.g. ANGER cameras}

G01T 1/1644 ..... {using an array of optically separate scintillation elements permitting direct location of scintillations(G01T 1/1645 takes precedence)}

G01T 1/1645 ..... {using electron optical imaging means, e.g. image intensifier tubes, coordinate photomultiplier tubes, image converter}

G01T 1/1647 ..... {Processing of scintigraphic data(not related to a particular imaging system G01T 1/2992)}

G01T 1/1648 ..... {Ancillary equipment for scintillation cameras e.g. reference markers, devices for removing motion artifacts, calibration devices(adapted for flow studies G01T 1/1647)}

G01T 1/166 .... involving relative movement between detector and subject({ scanners in general without using scintigraphy G01T 1/2964 })

G01T 1/1663 ..... {Processing methods of scan data, e.g. involving contrast enhancement, background reduction, smoothing, motion correction, dual radio-isotope scanning, computer processing(for measuring spatial distribution of radiation G01T 1/2992 ; general purpose image data processing G06T 1/00 ; computerized tomography G06T 11/003); Ancillary equipment(colour printers G01T 1/1666)}

G01T 1/1666 ..... {adapted for printing different symbols or colours according to the intensity or energy level of the detected radioactivity(depth discrimination in colour G01T 1/2985)}

G01T 1/167 .. Measuring radioactive content of objects, e.g. contamination(whole body counters G01T 1/163)

G01T 1/169 .. Exploration, location of contaminated surface areas(prospecting by the use of nuclear radiation e.g. of natural or induced radioactivity G01V 5/00) {in situ measurement, e.g. floor contamination monitor(directional detectors G01T 1/2907)}

G01T 1/17 .. Circuit arrangements not adapted to a particular type of detector{(pulse-selection circuits H03K , G01R)}

G01T 1/171 ... {Compensation of dead-time counting losses(see provisionally also G01T 1/17)}

G01T 1/172 ... with coincidence circuit arrangements(G01T 1/178 takes precedence; { combination of detectors, see G01T 1/1603 , G01T 1/30 , G01T 1/361 })

G01T 1/175 ... Power supply circuits(power supply circuits per se H02J ; converters H02M)

G01T 1/178 ... for measuring specific activity in the presence of other radioactive substances, e.g. natural, in the air or in liquids such as rain water

G01T 1/18 .. with counting-tube arrangements, e.g. with Geiger counters(tubes H01J 47/08 ; { with alarm provision G01T 7/125 })

G01T 1/185 .. with ionisation chamber arrangements(construction of ionisation chambers H01J 47/02 ; { gas analysis by ionisation G01N 27/66 ; measuring pressure G01L 9/00 ; leak detection G01M 3/00 ; tele-measurements G08C })

G01T 1/20 .. with scintillation detectors

G01T 1/2002 ... {Optical details, e.g. refecting or diffusing layers}

G01T 1/2004 ... {Scintilloscopes(fluoroscopes G21K 4/00 ; radiation diagnosis A61B 6/00)}

G01T 1/2006 ... {using a combination of a scintillator and photodetector which measures the means radiation intensity}

G01T 1/2008 ... {using a combination of different types of scintillation detectors, e.g. phoswich}

WARNING

Pending reclassification, for subject-matter regarding phoswich see also G01T 1/20

G01T 1/201 ... {using scintillating fibres}

WARNING

Not complete, see also G01T 1/2992

G01T 1/2012 ... {using stimulable phosphors, e.g. stimulable phosphor sheets}

WARNING

This group and subgroups are not complete pending reclassification; see also group G01T 1/2992

G01T 1/2014 .... {Reading out of stimulable sheets, e.g. latent image}

G01T 1/2016 .... {Erasing of stimulable sheets, e.g. with light, heat or the like}

G01T 1/2018 ... {Scintillation-photodiode combination}

G01T 1/202 ... the detector being a crystal

G01T 1/2023 .... {Selection of materials(see provisionally also G01T 1/202)}

G01T 1/2026 .... {Well-type detectors(see provisionally also G01T 1/202)}

G01T 1/203 . . . the detector being made of plastics

G01T 1/2033 . . . . {Selection of materials(see provisionally also G01T 1/203)}

G01T 1/2036 . . . . {Well-type detectors(see provisionally also G01T 1/203)}

G01T 1/204 . . . the detector being a liquid

G01T 1/2042 . . . . {Composition for liquid scintillation systems}

G01T 1/2045 . . . . . {Liquid scintillation quench systems}

G01T 1/2047 . . . . . {Sample preparation}

G01T 1/205 . . . the detector being a gas

G01T 1/208 . . . Circuits specially adapted for scintillation detectors, e.g. for the photo-multiplier section

G01T 1/22 . . with Cerenkov detectors

G01T 1/24 . . with semiconductor detectors(semiconductor devices per se H01L 31/00)

G01T 1/241 . . . {Electrode arrangements, e.g. continuous or parallel strips or the like(constructional or manufacturing details H01L 31/00)}

G01T 1/242 . . . {Stacked detectors, e.g. for depth information} (constructional or manufacturing details H01L 25/00)]

G01T 1/243 . . . {Modular detectors, e.g. arrays formed from self contained units(constructional or manufacturing details H01L 25/00)}

G01T 1/244 . . . {Auxiliary details, e.g. casings, cooling, damping or insulation against damage by e.g. heat, pressure or the like}

G01T 1/245 . . . {using memory cells}

G01T 1/246 . . . {utilizing latent read-out, e.g. charge stored and read-out later}

G01T 1/247 . . . {Detector read-out circuitry(for processing gain or off-set correction H04N)}

G01T 1/248 . . . {Silicon photomultipliers [SiPM], e.g. an avalanche photodiode [APD] array on a common Si substrate}

G01T 1/249 . . . {specially adapted for use in SPECT or PET(SPECT imaging G01T 1/1642 ; PET imaging G01T 1/2985 ; detecting hidden objects, e.g. weapons, explosives G01V 5/0008)}

G01T 1/26 . . with resistance detectors{(photoresistors H01L 31/00)}

G01T 1/28 . . with secondary-emission detectors(secondary-electron-emitting electrodes in general H01J 1/32) {optionally combined with scintillation counters(secondary emission tubes H01J 43/00)}

G01T 1/29 . Measurement performed on radiation beams, e.g. position or section of the beam; Measurement of spatial distribution of radiation(scintigraphy G01T 1/164 ; mass-spectrometers H01J 49/025)

G01T 1/2907 . . {Angle determination; Directional detectors; Telescopes(prospecting by the use of nuclear radiation, e.g. of natural or induced radioactivity G01V 5/00)}

G01T 1/2914 . . {Measurement of spatial distribution of radiation}

G01T 1/2921 . . . {Static instruments for imaging the distribution of radioactivity in one or two dimensions; Radio-isotope cameras(using scintigraphy G01T 1/1641)}

G01T 1/2928 . . . . {using solid state detectors}

G01T 1/2935 . . . . {using ionisation detectors}

G01T 1/2942 . . . . {using autoradiographic methods}

G01T 1/295 .... {using coded aperture devices e.g. Fresnel zone plates(handling of radiation of particles e.g. using diaphragms, collimators, diffraction G21K 1/00)}

G01T 1/2957 .... {using channel multiplier arrays(channel multipliers H01J 43/18 ; G01T 1/1645 takes precedence)}

G01T 1/2964 ... {Scanners(using scintigraphy G01T 1/166)}

G01T 1/2971 .... {using solid state detectors}

G01T 1/2978 ... {Hybrid imaging systems, e.g. using a position sensitive detector (camera) to determine the distribution in one direction and using mechanical movement of the detector or the subject in the other direction or using a camera to determine the distribution in two dimensions and using movement of the camera or the subject to increase the field of view(G01T 1/2985 takes precedence)}

G01T 1/2985 ... {In depth localisation e.g. using positron emitters; Tomographic imaging(longitudinal and transverse section imaging; apparatus for radiation diagnosis sequentially in different planes, steroscopic radiation diagnosis);(using external radiation sources A61B 6/02)}

G01T 1/2992 ... {Radioisotope data or image processing not related to a particular imaging system; Off-line processing of pictures, e.g. rescanners(for measuring radiation intensity G01T 1/1663 ; digital computing or data processing equipment or methods specially adapted for nuclear physics or nuclear engineering **G06F15/52** ; general purpose image data processing G06T 1/00 ; computerized tomography G06T 11/003)}

G01T 1/30 . Measuring half-life of a radioactive substance{(period meters for nuclear fission reactors G21C 17/14)}

G01T 1/32 . Measuring polarisation of particles

G01T 1/34 . Measuring cross-section, e.g. absorption cross-section of particles

G01T 1/36 . Measuring spectral distribution of X-rays or of nuclear radiation{spectrometry(pulse selection circuits per se H03K ; investigation of materials by radiation diffraction G01N 23/20 ; spectrometer tubes H01J 49/00)}

G01T 1/361 .. {with a combination of detectors of different types, e.g. anti-Compton spectrometers(intensity measurement with a combination of detectors G01T 1/1603 ; with coincidence circuit G01T 1/172 ; se provisionally also G01T 1/36)}

NOTE

G01T 1/361 takes precedence over G01T 1/362

G01T 1/362 .. {with scintillation detectors(see provisionally also G01T 1/36 , G01T 1/20)}

G01T 1/363 .. {with Cerenkov detectors}

G01T 1/365 .. {with ionisation detectors e.g. proportional counter(see provisionally also G01T 1/36)}

G01T 1/366 .. {with semi-conductor detectors(see provisionally also G01T 1/36)}

G01T 1/367 .. {with resistance detectors(see provisionally also G01T 1/36)}

G01T 1/368 .. {with secondary-emission detectors(see provisionally G01T 1/36)}

G01T 1/38 .. Particle discrimination and measurement of relative mass, e.g. by measurement of loss of energy with distance (dE/dx){(constructional details of semiconductor detectors therefor H01L 31/00)}

G01T 1/40 . . Stabilisation of spectrometers{(circuits specially adapted for scintillation detectors G01T 1/208)}

G01T 3/00 **Measuring neutron radiation**(G01T 5/00 takes precedence; { tubes therefor H01J 47/12 ; circuits with such tubes G01T 1/18 ; measuring short time intervals G04F 10/00 ; measuring pulse characteristics G01R 29/02 ; neutron choppers G21K 1/04 ; polarimeters G01T 1/32 })

G01T 3/001 . {Spectrometry}

G01T 3/003 . . {Recoil spectrometers(light-nuclei recoil ionisation tubes per se H01J 47/1277)}

G01T 3/005 . . {Time-of-flight spectrometers(see provisionally also G01T 3/00)}

G01T 3/006 . {using self-powered detectors (for neutrons as well as for Y- or X-rays) , e.g. using Compton-effect (Compton diodes) or photo-emission or a (n,B) nuclear reaction(photovoltaic semiconductors H01L 31/00 ; photo-tubes H01J 40/00 ; thermionic generators H01J 45/00 ; radioisotopic generators G21H 1/00 , e.g. G21H 1/02, G21H 1/04)}

G01T 3/008 . {using an ionisation chamber filled with a gas, liquid or solid, e.g. frozen liquid, dielectric(G01T 3/006 takes precedence)}

G01T 3/02 . by shielding other radiation

G01T 3/04 . using calorimetric devices

G01T 3/06 . with scintillation detectors

G01T 3/065 . . {Spectrometry}

G01T 3/08 . with semiconductor detectors(semiconductor detectors per se H01L 31/00)

G01T 3/085 . . {Spectrometry}

G01T 5/00 **Recording of movements or tracks of particles**(spark chambers H01J 47/00)**; Processing or analysis of such tracks**

G01T 5/002 . {using a combination of several movement of track recording devices(detectors associated with recording chambers and only serving to trigger these chambers, see the appropriate groups of the chamber e.g. G01T 5/04 - G01T 5/08 ; see provisionally also G01T 5/00 and other sub-groups)}

G01T 5/004 . {Non-electrical readout of multi-wire or parallel-plate chambers(non-electrical readout in such chambers per se H01J 47/22)}

G01T 5/006 . . {by optical methods}

G01T 5/008 . . {by acoustical methods}

G01T 5/02 . Processing of tracks; Analysis of tracks

G01T 5/04 . Cloud chambers, e.g. Wilson chamber

G01T 5/06 . Bubble chambers

G01T 5/08 . Scintillation chambers(discharge tubes H01J 40/00 , H01J 47/00 ; semiconductor devices H01L)

G01T 5/10 . Plates or blocks in which tracks or nuclear particles are made visible by after-treatment, e.g. using photographic emulsion, using mica

G01T 5/12 . Circuit arrangements with multi-wire or parallel-plate chambers, e.g. spark chambers(tubes per se H01J 47/00)

G01T 5/122 . . {for readout of each individual wires;(readout in such chambers per se H01J 47/16); for processing the output signals}

G01T 5/125 . . . {by using delay lines}

G01T 5/127 . . . . {by using magnetostrictive delay lines}

G01T 7/00 **Details of radiation-measuring instruments**

G01T 7/005 . {calibration techniques(stabilization of spectrometer G01T 1/40)}

G01T 7/02 . Collecting means for receiving or storing samples to be investigated{and possibly directly transporting the samples to the measuring arrangement; particularly for investigating radioactive fluids(sampling, preparing specimens for investigation in general G01N 1/00 , G01N 1/02 ; shielded cells or rooms structurally combined with manipulatin devices G21F ; measuring of chromatographically separated samples G01N 30/00 to G01N 30/96)}

G01T 7/04 . . by filtration

G01T 7/06 . . by electrostatic precipitation(G01T 7/04 takes precedence)

G01T 7/08 . Means for conveying samples received{(i.e. sample changers G01N 35/00)}

G01T 7/10 . . using turntables

G01T 7/12 . Provision for actuation of an alarm

G01T 7/125 . . {Alarm- or controlling circuits using ionisation chambers, proportional counters or Geiger-Mueller tubes, also functioning as UV detectors(measuring radiation intensity with counting tubes G01T 1/18 ; measuring radiation intensity with ionisation chambers G01T 1/185 ; fire alarms actuated by presence of radiation of particles, e.g. of infra-red radiation, of ions G08B 17/11 ; flame monitoring in combustion devices F23Q 7/00 , F23N ; discharge tubes per se H01J 47/00)}