**CPC**  
**COOPERATIVE PATENT CLASSIFICATION**

**G**  
**PHYSICS**  
*(NOTES omitted)*

**INSTRUMENTS**

**G01**  
**MEASURING; TESTING**  
*(NOTES omitted)*

**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)*

**NOTES**

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

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

**WARNING**

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

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| 1/1606 | . . [with other specified detectors not provided for in the other sub-groups of G01T 1/16 (see provisionally also G01T 1/16)] |
| 1/161  | . . Applications in the field of nuclear medicine, e.g. in vivo counting *(apparatus for radiation diagnosis A61B 6/00)* |
| 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)*] |
| 1/1612 | . . . . [with scintillation detectors *(G01T 1/20 takes precedence)*]                                                          |
| 1/1614 | . . . . . [with semiconductor detectors *(G01T 1/24 takes precedence)*]                                                        |
| 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)*] |
| 1/1617 | . . . . . [with scintillation detectors *(G01T 1/20 takes precedence)*]                                                          |
| 1/1618 | . . . . . [with semiconductor detectors *(G01T 1/24 takes precedence)*]                                                        |
| 1/163  | . . Whole body counters *(hand or feet contamination measurement G01T 1/167; lung, brain, thyroid, kidney or the like counting G01T 1/16)* |
| 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)*] |
| 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)* |
1/1641 . . . [Static instruments for imaging the distribution of radioactivity in one or two dimensions using one or several scintillating elements; Radio-isotope cameras]

1/1642 . . . . [using a scintillation crystal and position sensing photodetector arrays, e.g. ANGER cameras]

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

1/1645 . . . . [using electron optical imaging means, e.g. image intensifier tubes, coordinate photomultiplier tubes, image converter]

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

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)]

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

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 1/003; Ancillary equipment (colour printers G01T 1/1666)]

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)]

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

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)]

1/17 . . . Circuit arrangements not adapted to a particular type of detector [pulse-selection circuits H03K, G01R]

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

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

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

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

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

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))

1/20 . . . with scintillation detectors

1/2002 . . . [Optical details, e.g. reflecting or diffusing layers]

1/2004 . . . [Scintilloscopes (fluoroscopes G21K 4/00; radiation diagnosis A61B 6/00)]

1/2006 . . . [using a combination of a scintillator and photodetector which measures the means radiation intensity]

1/2008 . . . [using a combination of different types of scintillation detectors, e.g. phoswich]

1/201 . . . [using scintillating fibres]

1/2012 . . . [using stimulable phosphors, e.g. stimulable phosphor sheets]

1/2014 . . . [Reading out of stimulable sheets, e.g. latent image]

1/2016 . . . [Erasing of stimulable sheets, e.g. with light, heat or the like]

1/2018 . . . [Scintillation-photodiode combinations]

**WARNING**

Group G01T 1/2018 is impacted by reclassification into groups G01T 1/20181 - G01T 1/2019.

All groups listed in this Warning should be considered in order to perform a complete search.

1/20181 . . . [Stacked detectors, e.g. for measuring energy and positional information (using a combination of different types of scintillation detectors, e.g. phoswich detectors, G01T 1/2008)]

**WARNING**

Group G01T 1/20181 is incomplete pending reclassification from group G01T 1/2018.

Group G01T 1/2018 and G01T 1/20181 should be considered in order to perform a complete search.

1/20182 . . . [Modular detectors, e.g. tiled scintillators or tiled photodiodes (stacked detectors G01T 1/20181)]

**WARNING**

Group G01T 1/20182 is incomplete pending reclassification from group G01T 1/2018.

Groups G01T 1/2018 and G01T 1/20182 should be considered in order to perform a complete search.
1/20183 . . .  [Arrangements for preventing or correcting crosstalk, e.g. optical or electrical arrangements for correcting crosstalk]

**WARNING**

Group G01T 1/20183 is incomplete pending reclassification from group G01T 1/2018. Groups G01T 1/2018 and G01T 1/20183 should be considered in order to perform a complete search.

1/20184 . . .  [Detector read-out circuitry, e.g. for clearing of traps, compensating for traps or compensating for direct hits]

**WARNING**

Group G01T 1/20184 is incomplete pending reclassification from group G01T 1/2018. Groups G01T 1/2018 and G01T 1/20184 should be considered in order to perform a complete search.

1/20185 . . .  [Coupling means between the photodiode and the scintillator, e.g. optical couplings using adhesives with wavelength-shifting fibres]

**WARNING**

Group G01T 1/20185 is incomplete pending reclassification from group G01T 1/2018. Groups G01T 1/2018 and G01T 1/20185 should be considered in order to perform a complete search.

1/20186 . . .  [Position of the photodiode with respect to the incoming radiation, e.g. in the front of, below or sideways the scintillator]

**WARNING**

Group G01T 1/20186 is incomplete pending reclassification from group G01T 1/2018. Groups G01T 1/2018 and G01T 1/20186 should be considered in order to perform a complete search.

1/20187 . . .  [Position of the scintillator with respect to the photodiode, e.g. photodiode surrounding the crystal, the crystal surrounding the photodiode, shape or size of the scintillator]

**WARNING**

Group G01T 1/20187 is incomplete pending reclassification from group G01T 1/2018. Groups G01T 1/2018 and G01T 1/20187 should be considered in order to perform a complete search.

1/20188 . . .  [Auxiliary details, e.g. casings or cooling]

**WARNING**

Groups G01T 1/20188, G01T 1/2019, and G01T 1/2019 are incomplete pending reclassification from group G01T 1/2018. All groups listed in this Warning should be considered in order to perform a complete search.
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)

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

1/2914 . [Measurement of spatial distribution of radiation]

1/2921 . . [Static instruments for imaging the distribution of radioactivity in one or two dimensions; Radio-isotope cameras (using scintigraphy G01T 1/164)]

1/2928 . . [using solid state detectors]

1/2935 . . [using ionisation detectors]

1/2942 . . [using autoradiographic methods]

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)]

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

1/2964 . . [Scanners (using scintigraphy G01T 1/166)]

1/2971 . . [using solid state detectors]

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)]

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, stereoscopic radiation diagnosis); (using external radiation sources A61B 6/02)]

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 G00F 15/00; general purpose image data processing G06T 1/00; computerized tomography G06T 11/003)]

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

1/32 . . [Measuring polarisation of particles]

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

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)}]

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

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

1/363 . . [with Cerenkov detectors]

1/365 . . [with ionisation detectors, e.g. proportional counter (see provisionally also G01T 1/36)]

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

1/367 . . [with resistance detectors (see provisionally also G01T 1/36)]

1/368 . . [with secondary-emission detectors (see provisionally G01T 1/36)]

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)]

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

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]]

3/001 . [Spectrometry]

3/003 . [ Recoil spectrometers (light-nuclei recoil ionisation tubes per se H01J 47/1273)]

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

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 H01F 40/00; thermionic generators H01J 45/00; radioisotopic generators G21H 1/00; e.g. G21H 1/02, G21H 1/04)]

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

3/02 . [by shielding other radiation]

3/04 . [using calorimetric devices]

3/06 . [with scintillation detectors]

3/065 . [Spectrometry]

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

3/085 . [Spectrometry]

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

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

5/006 . . { by optical methods }

5/008 . . { by acoustical methods }

5/02 . Processing of tracks; Analysis of tracks

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

5/06 . Bubble chambers

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

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

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

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

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

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

7/00 Details of radiation-measuring instruments

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

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 manipulative devices G21F; measuring of chromatographically separated samples G01N 30/00 - G01N 30/96) }

7/04 . . by filtration

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

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

7/10 . . using turntables

7/12 . Provision for actuation of an alarm

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) }