

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 H01J40/00, H01J47/00, H01J49/00)

Definition statement

This subclass/group covers:

- Methods and instruments for measurement and detection of X-radiation, gamma radiation, corpuscular radiation, cosmic radiation, or neutron radiation.
- Recording of movements or tracks of particles.
- Details of instruments for measuring of X-radiation, gamma radiation, corpuscular radiation, cosmic radiation, or neutron radiation.

Relationship between large subject matter areas

Apparatus for radiation diagnosis or therapy in medical and veterinary science are classified in [A61B 6/00](#) or [A61N 5/00](#). The borderline between [G01T](#) and [A61B](#) should be determined based on whether the apparatus is purely medical or the feature is more of a general technical nature.

There exists a certain overlap between X-radiation and UV-radiation, where measurement of UV-radiation is generally classified in [G01J](#).

Nuclear magnetic resonance is classified in [G01R 33/20G01N G01R 24/00](#) or [A61B 5/055](#).

References relevant to classification in this subclass

This subclass/group does not cover:

Radiation analysis of materials, mass spectrometry	G01N
Electric discharge tubes for analysing radiation or particles	H01J 40/00 , H01J 47/00 , H01J 49/00
Construction of ionisation chambers	H01J 47/02
Spark chambers	H01J 47/14
Semiconductor detectors per se	H01L 31/00
Secondary-electron-emitting	H01J 1/32

electrodes in general	
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Examples of places where the subject matter of this class is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Prospecting by the use of nuclear radiation, natural or induced	G01V 5/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Measuring exposure time to X-rays	H05G 1/28
Photosensitive materials or processes for photographic purposes	G03C
Pulse rate meters in general	G01R 23/02
Applying radioactive material to the body	A61M 36/00
Radio isotopes	G21G 4/00
Tracers	G21H 5/00
Counters per se	G06M , H03K
Computerised tomographs	A61B 6/03
Nuclear magnetic computer tomography	G01R 33/20 , G01N 24/00 , A61B 5/055
Nuclear magnetic resonance.	G01R 33/20 , G01N 24/00 , A61B 5/055
Radiation pyrometry using electric radiation detectors which use the ionisation of gases	G01J 5/36
Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic	G01N 24/00

resonance or other spin effects	
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Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Measuring	attention is drawn to the Notes following the title of class G01
Corpuscular radiation	a stream of atomic or subatomic particles which may be charged positive or negative, or be uncharged

G01T 1/00

Measuring X-radiation, gamma radiation, corpuscular radiation, or cosmic radiation (G01T3/00, G01T5/00 take precedence)

Definition statement

This subclass/group covers:

- Methods and instruments for measurement and detection of X-radiation, gamma radiation, corpuscular radiation, cosmic radiation, or neutron radiation.
- Recording of movements or tracks of particles.
- Details of instruments for measuring of X-radiation, gamma radiation, corpuscular radiation, cosmic radiation, or neutron radiation.

Relationship between large subject matter areas

- Apparatus for radiation diagnosis or therapy in medical and veterinary science are classified in [A61B 6/00](#) or [A61N 5/00](#). The borderline between [G01T](#) and [A61B](#) should be determined based on whether the apparatus is purely for medical diagnosis or the feature is more of a general technical nature.
- There exists a certain overlap between x-radiation and UV-radiation, where measurement of UV-radiation is generally classified in [G01J](#).
- Nuclear magnetic resonance is classified in [G01R 33/20](#), [G01N 24/00](#) or [A61B 5/055](#).

References relevant to classification in this group

This subclass/group does not cover:

Radiation analysis of materials, mass spectrometry	G01N
Electric discharge tubes for analysing radiation or particles	H01J 40/00 , H01J 47/00 , H01J 49/00
Construction of ionisation chambers	H01J 47/02
Semiconductor detectors per se	H01L 31/00
Secondary-electron-emitting electrodes in general	H01J 1/32

Informative references

Attention is drawn to the following places, which may be of interest for search:

Attention is drawn to the following places, which may be of interest for search:

Photosensitive materials or processes for photographic purposes	G03C
Pulse rate meters in general	G01R 23/02
Applying radioactive material to the body	A61M 36/00
Radio isotopes	G21G 4/00
Tracers	G21H 5/00
Spark chambers	H01J 47/00
Counters per se	G06M H03K
Computerised tomography for diagnosis	A61B 6/03
Prospecting by the use of nuclear radiation, natural or induced	G01V 5/00

Measuring exposure time to X-rays	H05G 1/28
Nuclear magnetic computer tomography	G01R 33/20 G01N24 , A61B 5/055
Nuclear magnetic resonance.	G01R 33/20 G01N 24/00 , A61B 5/055
Radiation pyrometry using electric radiation detectors which use the ionisation of gases	G01J 5/36
Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects Semiconductor detectors constructional details and devices	G01N 24/00 , H01L 31/00

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Measuring	Attention is drawn to the Notes following the title of class G 01.
Corpuscular radiation	a stream of atomic or subatomic particles which may be charged positive or negative, or be uncharged.

G01T 1/16

Measuring radiation intensity (G01T1/29 takes precedence; [N: self-powered detectors G01T3/006; using an ionisation chamber filled with a liquid or solid, e.g. frozen liquid, dielectric G01T3/008])

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangements or instruments using NMR	G01R 33/00
Electrical or Magnetic Prospecting	G01V 3/00

using NMR	
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Special rules of classification within this group

The combined use of CT and NMR as one device is to be classified here as well as in [G01R 33/00](#) depending on the invention details.

If the invention details are directed towards the CT aspects then it will be for [G01T](#) even though NMR is mentioned. Conversely, invention details pertaining to the NMR will go to [G01R 33/00](#) and not [G01T](#).

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

NMR	Nuclear Magnetic Resonance (imaging of nuclei of atoms inside the body using a magnetic field)
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G01T 1/161

Application in the field of nuclear medicine, e.g. in vivo counting [N: (apparatus for radiation diagnosis A61B6/00)]

Definition statement

This subclass/group covers:

Hand held surgical probe detectors used for locating or scanning an area of the body

Intracorporeal devices for detecting radiation from within the body (e.g. endoscopy, laparoscopy etc).

Informative references

Attention is drawn to the following places, which may be of interest for search:

For Use In Medical Diagnosis	A61B 6/00
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G01T 1/1642

[N: using a scintillation crystal and position sensing

photodetector arrays, e.g. ANGER cameras]

Definition statement

This subclass/group covers:

Using one single scintillator with several photodetectors

G01T 1/1644

[N: using an array of optically separate scintillation elements permitting direct location of scintillations (G01T1/1645 takes precedence)]

Definition statement

This subclass/group covers:

Using several individual scintillator-photodiode arrays

G01T 1/295

[N: using coded aperture devices e.g. Fresnel zone plates (handling of radiation of particles e.g. using diaphragms, collimators, diffraction G21K1/00)]

References relevant to classification in this group

This subclass/group does not cover:

For Optical Applications (e.g. using light)	H04N 5/2173
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G01T 1/2985

[N: 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 A61B6/02)]

Informative references

Attention is drawn to the following places, which may be of interest for search:

CT for use in medical diagnosis	A61B 6/00
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G01T 1/2992

[N: Radioisotope data or image processing not related to a particular imaging system; Off-line processing of pictures, e.g. rescanners (for measuring radiation intensity G01T1/1663; digital computing or data processing equipment or methods specially adapted for nuclear physics or nuclear engineering G06F15/52, e.g. for image data processing G06F15/52D; general purpose image data processing G06T1/00; computerized tomography G06T11/003)]

Definition statement

This subclass/group covers:

- Stimulable Phosphor Sheets.
- Read-out systems using laser scanning.
- Erasing of signal.

G01T 1/40

Stabilisation of spectrometers [N: (circuits specially adapted for scintillation detectors G01T1/208)]

Definition statement

This subclass/group covers:

Stabilization of the photodetector using an internal source (e.g. LED) to overcome drift.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Calibration Techniques	G01T 7/005
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G01T 3/00

Measuring neutron radiation (G01T5/00 takes precedence; [N: tubes therefor H01J47/12; circuits with such tubes G01T1/18; measuring short time intervals G04F10/00; measuring pulse characteristics G01R29/02; neutron choppers G21K1/04; polarimeters G01T1/32])

Definition statement

This subclass/group covers:

- Methods and instruments for measuring neutron radiation.
- Neutron Detectors (e.g. Scintillators, Solid-State).

Informative references

Attention is drawn to the following places, which may be of interest for search:

Investigating or analysing materials by determining their chemical or physical properties	G01N
Measuring reactor flux	G21C 17/00
Generating neutron beams	H05H 3/00
Using collimators, diaphragms	G21K 1/00
Neutron Sources	G21G 4/00
Detecting hidden objects e.g. weapons, narcotics, explosives	G01V 5/0008
Ionisation Detectors	G01T 1/185

G01T 5/00

Recording of movements or tracks of particles (spark chambers H01J47/00); Processing or analysis of such tracks

G01T 5/08

Scintillation chambers (discharge tubes H01J40/00, H01J47/00; semiconductor devices H01L)

Definition statement

This subclass/group covers:

Scintillation fibre (i.e. fibres made from scintillation material)

Informative references

Attention is drawn to the following places, which may be of interest for search:

Optical fibres used as connectors between scintillator and photodiodes	G01T 1/20
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G01T 7/00

Details of radiation-measuring instruments

Definition statement

This subclass/group covers:

- Detecting radiation from a safe distance (e.g. contaminated areas, highly radioactive objects).
- Using remotely-controlled mobile detector units.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Detector interrogation using an external network	G01V 5/0008
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