G01T

MEASUREMENT OF NUCLEAR OR X-RADIATION (radiation analysis of materials, mass spectrometry G01N 23/00; tubes for determining the presence, intensity, density or energy of radiation or particles H01J 47/00)

Definition statement

This place 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.

Relationships with other classification places

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 33/20, G01N 24/08 or A61B 5/055.

References

Limiting references

This place does not cover:

Radiation analysis of materials, mass spectrometry	G01N 23/00
Tubes for determining the presence, intensity, density or energy of radiation or particles	H01J 47/00

Application-oriented references

Examples of places where the subject matter of this place 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

Informative references

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

Computed tomography	A61B 6/03
Radiation pyrometry using electric radiation detectors which use the ionisation of gases	G01J 5/36
Radiation analysis of materials, mass spectrometry	G01N
Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects	G01N 24/00
Pulse rate meters in general	G01R 23/02

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
Photosensitive materials or processes for photographic purposes	G03C
Counters per se	G06M, H03K
Radio isotopes	G21G 4/00
Tracers	G21H 5/00
Secondary-electron-emitting electrodes in general	H01J 1/32
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
Measuring exposure time to X-rays	H05G 1/28

Glossary of terms

In this place, 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 (G01T 3/00, G01T 5/00 take precedence)

Definition statement

This place 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.

Relationships with other classification places

- 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

Limiting references

This place does not cover:

Radiation analysis of materials, mass spectrometry	G01N
Secondary-electron-emitting electrodes in general	H01J 1/32
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

Informative references

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

Computed tomography for diagnosis	A61B 6/03
Applying radioactive material to the body	A61N 5/10
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
Pulse rate meters in general	G01R 23/02
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
Prospecting by the use of nuclear radiation, natural or induced	G01V 5/00
Photosensitive materials or processes for photographic purposes	G03C
Counters per se	G06M, H03K
Radio isotopes	G21G 4/00
Tracers	G21H 5/00
Spark chambers	H01J 47/00
Measuring exposure time to X-rays	H05G 1/28

Glossary of terms

In this place, 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 1/16

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})

References

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 using NMR	G01V 3/00

Special rules of classification

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 place, 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)

G01T 1/161

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

Definition statement

This place 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).

References

Informative references

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

For Use In Medical Diagnosis	A61B 6/00

G01T 1/1642

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

Definition statement

This place covers:

Using one single scintillator with several photodetectors

G01T 1/1644

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

Definition statement

This place covers:

Using several individual scintillator-photodiode arrays

G01T 1/20184

{Detector read-out circuitry, e.g. for clearing of traps, compensating for traps or compensating for direct hits}

References

Informative references

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

Devices and applications with image sensors transforming X-rays	H04N 5/32

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)}

References

Limiting references

This place does not cover:

For Optical Applications (e.g. using light)	H04N 25/60

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)}

References

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

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 G06F 15/00; general purpose image data processing G06T 1/00; computerized tomography G06T 11/003)}

Definition statement

This place covers:

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

G01T 1/40

Stabilisation of spectrometers

Definition statement

This place covers:

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

References

Informative references

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

Calibration Techniques	G01T 7/005

G01T 3/00

Measuring neutron radiation (G01T 5/00 takes precedence)

Definition statement

This place covers:

- Methods and instruments for measuring neutron radiation.

- Neutron Detectors (e.g. Scintillators, Solid-State).

References

Limiting references

This place does not cover:

Recording of movements or tracks of particles	G01T 5/00

Informative references

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

Ionisation Detectors	G01T 1/185
Investigating or analysing materials by determining their chemical or physical properties	G01N
Detecting prohibited goods, e.g. weapons, explosives, hazardous substances, contraband or smuggled objects	G01V 5/20
Measuring reactor flux	G21C 17/00
Neutron Sources	G21G 4/00
Using collimators, diaphragms	G21K 1/00
Generating neutron beams	H05H 3/00

G01T 5/08

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

Definition statement

This place covers:

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

References

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

G01T 7/00

Details of radiation-measuring instruments

Definition statement

This place covers:

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

References

Informative references

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

Detecting prohibited goods, e.g. weapons, explosives, hazardous substances, contraband or smuggled objects	G01V 5/20