# 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 |
| Measuring exposure time to X-rays | H05G 1/28 |
| Semiconductor detectors per se | H10F 30/00, H10F 39/00 |

## 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 |

### *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 | G01N 24/00, H10F 77/00 |
| 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 |
| Inorganic semiconductor devices sensitive to radiation | H10F 30/00, H10F 39/00 |
| Integrated Devices | H10F 39/10 |

## 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 |