

## 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	<a href="#">G01N 23/00</a>
Tubes for determining the presence, intensity, density or energy of radiation or particles	<a href="#">H01J 47/00</a>

#### 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	<a href="#">G01V 5/00</a>
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#### Informative references

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

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

Nuclear magnetic computer tomography	<a href="#">G01R 33/20</a> , <a href="#">G01N 24/00</a> , <a href="#">A61B 5/055</a>
Nuclear magnetic resonance.	<a href="#">G01R 33/20</a> , <a href="#">G01N 24/00</a> , <a href="#">A61B 5/055</a>
Photosensitive materials or processes for photographic purposes	<a href="#">G03C</a>
Counters per se	<a href="#">G06M</a> , <a href="#">H03K</a>
Radio isotopes	<a href="#">G21G 4/00</a>
Tracers	<a href="#">G21H 5/00</a>
Secondary-electron-emitting electrodes in general	<a href="#">H01J 1/32</a>
Electric discharge tubes for analysing radiation or particles	<a href="#">H01J 40/00</a> , <a href="#">H01J 47/00</a> , <a href="#">H01J 49/00</a>
Construction of ionisation chambers	<a href="#">H01J 47/02</a>
Spark chambers	<a href="#">H01J 47/14</a>
Measuring exposure time to X-rays	<a href="#">H05G 1/28</a>
Semiconductor detectors per se	<a href="#">H10F 30/00</a> , <a href="#">H10F 39/00</a>

## 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 <a href="#">G01</a>
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	<a href="#">G01N</a>
Secondary-electron-emitting electrodes in general	<a href="#">H01J 1/32</a>
Electric discharge tubes for analysing radiation or particles	<a href="#">H01J 40/00</a> , <a href="#">H01J 47/00</a> , <a href="#">H01J 49/00</a>
Construction of ionisation chambers	<a href="#">H01J 47/02</a>

### Informative references

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

Computed tomography for diagnosis	<a href="#">A61B 6/03</a>
Applying radioactive material to the body	<a href="#">A61N 5/10</a>
Radiation pyrometry using electric radiation detectors which use the ionisation of gases	<a href="#">G01J 5/36</a>
Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects	<a href="#">G01N 24/00</a> , <a href="#">H10F 77/00</a>
Pulse rate meters in general	<a href="#">G01R 23/02</a>
Nuclear magnetic computer tomography	<a href="#">G01R 33/20</a> , <a href="#">G01N 24/00</a> , <a href="#">A61B 5/055</a>
Nuclear magnetic resonance.	<a href="#">G01R 33/20</a> , <a href="#">G01N 24/00</a> , <a href="#">A61B 5/055</a>
Prospecting by the use of nuclear radiation, natural or induced	<a href="#">G01V 5/00</a>
Photosensitive materials or processes for photographic purposes	<a href="#">G03C</a>
Counters per se	<a href="#">G06M</a> , <a href="#">H03K</a>
Radio isotopes	<a href="#">G21G 4/00</a>
Tracers	<a href="#">G21H 5/00</a>
Spark chambers	<a href="#">H01J 47/00</a>
Measuring exposure time to X-rays	<a href="#">H05G 1/28</a>
Inorganic semiconductor devices sensitive to radiation	<a href="#">H10F 30/00</a> , <a href="#">H10F 39/00</a>
Integrated Devices	<a href="#">H10F 39/10</a>

## 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 <a href="#">G01</a> .
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	<a href="#">G01R 33/00</a>
Electrical or Magnetic Prospecting using NMR	<a href="#">G01V 3/00</a>

### 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)
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## 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	<a href="#">A61B 6/00</a>
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**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 1/172**

with coincidence circuit arrangements ([G01T 1/178](#) takes precedence {; combination of detectors, see [G01T 1/1603](#), [G01T 1/30](#)})

**References****Limiting references**

*This place does not cover:*

Measuring radiation intensity with a combination of at least two different types of detector	<a href="#">G01T 1/1603</a>
Circuit arrangements not adapted to a particular type of detector for measuring specific activity in the presence of other radioactive substances	<a href="#">G01T 1/178</a>
Measuring half-life of a radioactive substance	<a href="#">G01T 1/30</a>

**Informative references**

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

Measuring spectral distribution of X-rays or of nuclear radiation with a combination of detectors of different types	<a href="#">G01T 1/361</a>
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**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	<a href="#">H04N 5/32</a>
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**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)	<a href="#">H04N 25/60</a>
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**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, stereoscopic 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	<a href="#">A61B 6/00</a>
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**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 12/00](#))}

**Definition statement**

*This place covers:*

- Stimulable Phosphor Sheets.
- Read-out systems using laser scanning.

- Erasing of signal.

## 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](#))}

### References

#### Limiting references

*This place does not cover:*

Measuring radiation intensity with a combination of at least two different types of detector	<a href="#">G01T 1/1603</a>
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#### Informative references

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

Circuit arrangements not adapted to a particular type of detector with coincidence circuit arrangements	<a href="#">G01T 1/172</a>
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## G01T 1/362

{with scintillation detectors}

### References

#### Informative references

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

Measuring radiation intensity with scintillation detectors	<a href="#">G01T 1/20</a>
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## 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	<a href="#">G01T 7/005</a>
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## 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	<a href="#">G01T 5/00</a>
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#### Informative references

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

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

## G01T 5/002

{using a combination of several movement of track recording devices}

### References

#### Informative references

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

Cloud chambers, e.g. Wilson chamber	<a href="#">G01T 5/04</a>
Bubble chambers	<a href="#">G01T 5/06</a>
Scintillation chambers	<a href="#">G01T 5/08</a>

## G01T 5/08

Scintillation chambers (discharge tubes [H01J 40/00](#), [H01J 47/00](#))

### 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	<a href="#">G01T 1/20</a>
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## 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	<a href="#">G01V 5/20</a>
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