

# CPC COOPERATIVE PATENT CLASSIFICATION

## H ELECTRICITY

(NOTE omitted)

## H05 ELECTRIC TECHNIQUES NOT OTHERWISE PROVIDED FOR

## H05G X-RAY TECHNIQUE (investigating or analysing materials by the use of X-rays [G01N 23/00](#); apparatus for X-ray photography [G03B 42/02](#); X-ray tubes [H01J 35/00](#); TV systems having X-ray input [H04N 5/321](#))

### WARNINGS

- The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:  
[H05G 1/61](#) covered by [H05G 1/60](#)
- 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.

<b>1/00</b>	<b>X-ray apparatus involving X-ray tubes; Circuits therefor</b>	1/36	. . . . Temperature of anode; Brightness of image { <a href="#">power (electrical temperature regulating in general <a href="#">G05D 23/19</a>)</a> }
1/02	. Constructional details		
1/025	. . { <a href="#">Means for cooling the X-ray tube or the generator</a> }	1/38	. . . . Exposure time {(time switches in general <a href="#">H01H 43/00</a> and subgroups)}
1/04	. . Mounting the X-ray tube within a closed housing	1/40	. . . . . using adjustable time-switch
1/06	. . . X-ray tube and at least part of the power supply apparatus being mounted within the same housing	1/42	. . . . . using arrangements for switching when a predetermined dose of radiation has been applied, e.g. in which the switching instant is determined by measuring the electrical energy supplied to the tube
1/08	. Electrical details		
1/085	. . { <a href="#">Circuit arrangements particularly adapted for X-ray tubes having a control grid</a> }	1/44	. . . . . in which the switching instant is determined by measuring the amount of radiation directly {(dosimetry in general <a href="#">G01T 1/02</a> )}
1/10	. . Power supply arrangements for feeding the X-ray tube {(supply circuits with converters in general <a href="#">H02M</a> ; supply circuits for emitters and amplifiers <a href="#">H04B 1/16</a> - <a href="#">H04B 1/1623</a> )}	1/46	. . . . Combined control of different quantities, e.g. exposure time as well as voltage or current
1/12	. . . with DC or rectified single-phase AC {or double-phase}	1/48	. . . . Compensating the voltage drop occurring at the instant of switching-on of the apparatus
1/14	. . . with single-phase low-frequency AC {also when a rectifier element is in series with the X-ray tube}	1/50	. . . . Passing the tube current only during a restricted portion of the voltage waveform
1/16	. . . . Reducing the peak-inverse voltage	1/52	. . . . Target size or shape; Direction of electron beam, e.g. in tubes with one anode and more than one cathode
1/18	. . . with polyphase AC of low frequency {rectified}	1/54	. . . Protecting {or lifetime prediction}(overload protection combined with control <a href="#">H05G 1/46</a> )
1/20	. . . with high-frequency AC; with pulse trains {(pulse generators in general <a href="#">H03K 3/00</a> , <a href="#">H03K 4/00</a> )}	1/56	. . Switching-on; Switching-off
1/22	. . . with single pulses	1/58	. . Switching arrangements for changing-over from one mode of operation to another, e.g. from radioscopy to radiography, from radioscopy to irradiation {or from one tube voltage to another}
1/24	. . . . Obtaining pulses by using energy storage devices		
1/26	. . Measuring, controlling or protecting ( <a href="#">measuring X-ray radiation <a href="#">G01T</a></a> )	1/60	. . Circuit arrangements for obtaining a series of X-ray photographs or for X-ray cinematography
1/265	. . . { <a href="#">Measurements of current, voltage or power</a> }	1/62	. . Circuit arrangements for obtaining X-ray photography at predetermined instants in the movement of an object, e.g. X-ray stroboscopy
1/28	. . . Measuring or recording actual exposure time; Counting number of exposures; Measuring required exposure time	1/64	. . Circuit arrangements for X-ray apparatus incorporating image intensifiers
1/30	. . . Controlling	1/66	. . Circuit arrangements for X-ray tubes with target movable relatively to the anode
1/32	. . . . Supply voltage of the X-ray apparatus or tube	1/68	. . Circuit arrangements for Lilienfield tubes; Circuit arrangements for gas-filled X-ray tubes
1/34	. . . . Anode current, heater current or heater voltage of X-ray tube		

- 1/70 . . . Circuit arrangements for X-ray tubes with more than one anode; Circuit arrangements for apparatus comprising more than one X ray tube {or more than one cathode ([H05G 1/58](#) takes precedence)}

**2/00 Apparatus or processes specially adapted for producing X-rays, not involving X-ray tubes, e.g. involving generation of a plasma (X-ray lasers [H01S 4/00](#))**

- 2/001 . . {Production of X-ray radiation generated from plasma}

**WARNING**

Group [H05G 2/001](#) is impacted by reclassification into groups [H05G 2/002](#) - [H05G 2/0027](#), [H05G 2/007](#) and [H05G 2/009](#) - [H05G 2/0094](#).

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

- 2/002 . . {Supply of the plasma generating material}

**WARNING**

Groups [H05G 2/002](#), [H05G 2/0025](#) and [H05G 2/0027](#) are incomplete pending reclassification of documents from groups [H05G 2/001](#), [H05G 2/003](#), [H05G 2/005](#), [H05G 2/006](#) and [H05G 2/008](#).

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

- 2/0023 . . . {Constructional details of the ejection system}

**WARNING**

Group [H05G 2/0023](#) is incomplete pending reclassification of documents from groups [H05G 2/001](#), [H05G 2/006](#) and [H05G 2/008](#).

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

- 2/0025 . . . {Systems for collecting the plasma generating material after the plasma generation}

- 2/0027 . . . {Arrangements for controlling the supply; Arrangements for measurements}

- 2/003 . . {the plasma being generated from a material in a liquid or gas state}

**WARNING**

Group [H05G 2/003](#) is impacted by reclassification into groups [H05G 2/002](#), [H05G 2/0025](#), [H05G 2/0027](#), [H05G 2/007](#), [H05G 2/0088](#) and [H05G 2/009](#) - [H05G 2/0094](#).

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

- 2/0035 . . . {the material containing metals as principal radiation-generating components}

**WARNING**

Group [H05G 2/0035](#) is incomplete pending reclassification of documents from group [H05G 2/005](#).

Groups [H05G 2/005](#) and [H05G 2/0035](#) should be considered in order to perform a complete search.

- 2/005 . . . {containing a metal as principal radiation generating component}  
(Frozen)

**WARNING**

Group [H05G 2/005](#) is no longer used for the classification of documents as of August 1, 2024.

The content of this group is being reclassified into groups [H05G 2/002](#), [H05G 2/0025](#), [H05G 2/0027](#), [H05G 2/0035](#), [H05G 2/007](#), [H05G 2/0088](#) and [H05G 2/009](#) - [H05G 2/0094](#).

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

- 2/006 . . . {details of the ejection system, e.g. constructional details of the nozzle}  
(Frozen)

**WARNING**

Group [H05G 2/006](#) is no longer used for the classification of documents as of August 1, 2024.

The content of this group is being reclassified into groups [H05G 2/002](#) - [H05G 2/0027](#), [H05G 2/007](#) and [H05G 2/009](#) - [H05G 2/0094](#).

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

- 2/007 . . {involving electric or magnetic fields in the process of plasma generation}

**WARNING**

Group [H05G 2/007](#) is incomplete pending reclassification of documents from groups [H05G 2/001](#), [H05G 2/003](#), [H05G 2/005](#), [H05G 2/006](#) and [H05G 2/008](#).

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

- 2/008 . . {involving an energy-carrying beam in the process of plasma generation}

**WARNING**

Group [H05G 2/008](#) is impacted by reclassification into groups [H05G 2/002](#) - [H05G 2/0027](#), [H05G 2/007](#), [H05G 2/0082](#) - [H05G 2/0088](#) and [H05G 2/009](#) - [H05G 2/0094](#).

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

2/0082 . . . {the energy-carrying beam being a laser beam}

**WARNING**

Groups [H05G 2/0082](#), [H05G 2/0084](#) and [H05G 2/0086](#) are incomplete pending reclassification of documents from group [H05G 2/008](#).

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

2/0084 . . . . {Control of the laser beam}

2/0086 . . . . {Optical arrangements for conveying the laser beam to the plasma generation location}

2/0088 . . . . {for preconditioning the plasma generating material}

**WARNING**

Group [H05G 2/0088](#) is incomplete pending reclassification of documents from groups [H05G 2/003](#), [H05G 2/005](#) and [H05G 2/008](#).

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

2/009 . . {Auxiliary arrangements not involved in the plasma generation}

**WARNING**

Groups [H05G 2/009](#) - [H05G 2/0094](#) are incomplete pending reclassification of documents from groups [H05G 2/001](#), [H05G 2/003](#), [H05G 2/005](#), [H05G 2/006](#) and [H05G 2/008](#).

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

2/0092 . . . {Housing of the apparatus for producing X-rays; Environment inside the housing}

2/0094 . . . {Reduction, prevention or protection from contamination; Cleaning}