

CPC**COOPERATIVE PATENT CLASSIFICATION****G21K****TECHNIQUES FOR HANDLING PARTICLES OR IONISING RADIATION NOT OTHERWISE PROVIDED FOR; IRRADIATION DEVICES; GAMMA RAY OR X-RAY MICROSCOPES****NOTE**

"particle" means a molecular, atomic or subatomic particle

WARNING

- [G21K 3/00](#) covered by [G21K 1/10](#)

G21K 1/00

Arrangements for handling particles or ionizing radiation, e.g. focusing or moderating (production or acceleration of neutrons, electrically-charged particles, neutral molecular beams or neutral atomic beams [H05H 3/00-H05H 15/00](#))

G21K 1/003

- . { Manipulation of charged particles by using radiation pressure, e.g. optical levitation (**acceleration of charged particles** [H05H 5/00](#), [H05H 7/00](#), [H05H 9/00](#), [H05H 11/00](#), [H05H 13/00](#))}

G21K 1/006

- . { Manipulation of neutral particles by using radiation pressure, e.g. optical levitation (**production or acceleration of neutral particles** [H05H 3/00](#))}

G21K 1/02

- . using diaphragms, collimators

G21K 1/025

- .. {using multiple collimators, e.g. Bucky screens; other devices for eliminating undesired or dispersed radiation}

G21K 1/04

- .. using variable diaphragms, shutters, choppers

G21K 1/043

- ... { changing time structure of beams by mechanical means, e.g. choppers, spinning filter wheels}

G21K 1/046

- ... { varying the contour of the field, e.g. multileaf collimators}

G21K 1/06

- . using diffraction, refraction or reflection, e.g. monochromators ([G21K 1/10](#), [G21K 7/00](#) take precedence)

G21K 1/062

- .. {Devices having a multilayer structure}

G21K 1/065

- .. { using refraction, e.g. Tomie lenses}

G21K 1/067

- .. { using surface reflection, e.g. grazing incidence mirrors, gratings (**multilayer mirrors** [G21K 1/062](#); **crystal optics** [G21K 1/06](#))}

G21K 1/08

- . Deviation, concentration or focusing of the beam by electric or magnetic means (**electron-optical arrangements in electric discharge tubes** [H01J 29/46](#); { details, e.g. electric or magnetic deviating means for direct voltage accelerators or in accelerators using single pulses [H05H 5/02](#); arrangements for injecting particles into orbits [H05H 7/08](#); arrangements for ejecting particles from orbits [H05H 7/10](#)})

G21K 1/087

- .. by electrical means

- G21K 1/093 . . by magnetic means
- G21K 1/10 . Scattering devices; Absorbing devices; Ionising radiation filters
- G21K 1/12 . . Resonant absorbers or driving arrangements therefor, e.g. for Moessbauer-effect devices {(motors with reciprocating, oscillating or vibrating magnet, armature or coil system in general [H02K 33/00](#))}
- G21K 1/14 . using charge exchange devices, e.g. for neutralising or changing the sign of the electrical charges of beams (producing or accelerating neutral particle beams [H05H 3/00](#))
- G21K 1/16 . using polarising devices, e.g. for obtaining a polarised beam {(ion sources, ion guns [H01J 27/02](#); polarised targets for producing nuclear reactions [H05H 6/005](#))}
- G21K 4/00** **Conversion screens for the conversion of the spatial distribution of X-rays or particle radiation into visible images, e.g. fluoroscopic screens** (photographic processes using X-ray intensifiers [G03C 5/17](#); discharge tubes comprising luminescent screens [H01J 1/62](#); cathode ray tubes for X-ray conversion with optical output [H01J 31/50](#))
- G21K 5/00** **Irradiation devices** (discharge tubes for irradiating [H01J 37/00](#))
- G21K 5/02 . having no beam-forming means
- G21K 5/04 . with beam-forming means
- G21K 5/08 . Holder for targets or for other objects to be irradiated
- G21K 5/10 . with provision for relative movement of beam source and object to be irradiated
- G21K 7/00** **Gamma- or X-ray microscopes**
- G21K 2004/00** **Conversion screens for the conversion of the spatial distribution of X-rays or particle radiation into visible images, e.g. fluoroscopic screens** (photographic processes using X-ray intensifiers [G03C 5/17](#); discharge tubes comprising luminescent screens [H01J 1/62](#); cathode ray tubes for X-ray conversion with optical output [H01J 31/50](#))
- G21K 2004/02 . characterised by the external panel structure
- G21K 2004/04 . with an intermediate layer
- G21K 2004/06 . with a phosphor layer
- G21K 2004/08 . with a binder in the phosphor layer
- G21K 2004/10 . with a protective film

G21K 2004/12 . with a support

G21K 2201/00 Arrangements for handling radiation or particles

G21K 2201/06 . using diffractive, refractive or reflecting elements

G21K 2201/061 . . characterised by a multilayer structure

G21K 2201/062 . . the element being a crystal

G21K 2201/064 . . having a curved surface

G21K 2201/065 . . provided with cooling means

G21K 2201/067 . . Construction details

G21K 2201/068 . . specially adapted for particle beams

G21K 2207/00 Particular details of imaging devices or methods using ionizing electromagnetic radiation such as X-rays or gamma rays

G21K 2207/005 . Methods and devices obtaining contrast from non-absorbing interaction of the radiation with matter, e.g. phase contrast