

# CPC COOPERATIVE PATENT CLASSIFICATION

## H ELECTRICITY

(NOTE omitted)

### H02 GENERATION; CONVERSION OR DISTRIBUTION OF ELECTRIC POWER

#### H02S GENERATION OF ELECTRIC POWER BY CONVERSION OF INFRA-RED RADIATION, VISIBLE LIGHT OR ULTRAVIOLET LIGHT, e.g. USING PHOTOVOLTAIC [PV] MODULES (obtaining electrical energy from radioactive sources [G21H 1/12](#); light sensitive inorganic semiconductor devices [H01L 31/00](#); thermoelectric devices [H01L 35/00](#); pyroelectric devices [H01L 37/00](#); light sensitive organic semiconductor devices [H01L 51/42](#))

**10/00** PV power plants; Combinations of PV energy systems with other systems for the generation of electric power

##### **WARNING**

Groups [H02S 10/10](#) - [H02S 10/40](#) are incomplete pending reclassification of documents from group [H02S 10/00](#).

Until reclassification is complete, groups [H02S 10/00](#) should be considered in order to perform a complete search.

10/10 . including a supplementary source of electric power, e.g. hybrid diesel-PV energy systems (combinations with gas-turbine plants [F02C 6/00](#))

10/12 . . Hybrid wind-PV energy systems

##### **WARNING**

Group [H02S 10/12](#) is incomplete pending reclassification of documents from groups [F03D 9/00](#), [F03D 9/007](#), [F03D 9/008](#), [F03D 9/10](#), [F03D 9/11](#), [F03D 9/13](#), [F03D 9/14](#), [F03D 9/16](#), [F03D 9/17](#), [F03D 9/22](#), [F03D 9/25](#), [F03D 9/255](#), [F03D 9/257](#) and [F03D 9/28](#).

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

10/20 . Systems characterised by their energy storage means ([H02S 40/38](#) takes precedence)

10/30 . Thermophotovoltaic systems (photovoltaic cells specially adapted for conversion or sensing of infra-red [IR] radiation [H01L 31/00](#); thermoelectric devices [H01L 35/00](#))

10/40 . Mobile PV generator systems

**20/00** Supporting structures for PV modules

##### **NOTE**

Supporting structures also intended for use with solar heat collectors should also be classified in groups [F24S 25/00](#)-[F24S 30/00](#) or [F24S 50/20](#)

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##### **WARNING**

Groups [H02S 20/10](#) - [H02S 20/32](#) are incomplete pending reclassification of documents from groups [H02S 20/00](#), [F24S 21/00](#), [F24S 50/20](#), and [H01L 31/048](#).

Until reclassification is complete, groups [H02S 20/00](#), [F24S 21/00](#), [F24S 50/20](#), and [H01L 31/048](#) should be considered in order to perform a complete search.

. Supporting structures directly fixed to the ground ([H02S 20/30](#) takes precedence)

. Supporting structures directly fixed to an immovable object ([H02S 20/30](#) takes precedence)

. . specially adapted for motorways, e.g. integrated with sound barriers

. . specially adapted for buildings

. . . specially adapted for roof structures

. . . . specially adapted for flat roofs

. . . . Roof tile elements

. . . Building materials integrated with PV modules, e.g. façade elements ([H02S 20/25](#) takes precedence)

. Supporting structures being movable or adjustable, e.g. for angle adjustment

. . specially adapted for solar tracking

**Structural details of PV modules other than those related to light conversion (semiconductor device aspects of modules of electrolytic light sensitive devices [H01G 9/20](#), of inorganic PV modules [H01L 31/00](#), of organic PV modules [H01L 51/42](#))**

##### **WARNING**

Groups [H02S 30/10](#) and [H02S 30/20](#) are incomplete pending reclassification of documents from group [H02S 30/00](#).

Until reclassification is complete, group [H02S 30/00](#) should be considered in order to perform a complete search.

. Frame structures

. Collapsible or foldable PV modules

**40/00 Components or accessories in combination with PV modules, not provided for in groups H02S 10/00 - H02S 30/00**

**WARNING**

Groups [H02S 40/10](#) - [H02S 40/44](#) are incomplete pending reclassification of documents from groups [H02S 40/00](#), [F24S 21/00](#), [H01L 31/0232](#), [H01L 31/05](#) - [H01L 31/055](#).

Until reclassification is complete, groups [H02S 40/00](#), [F24S 21/00](#), [H01L 31/0232](#) and [H01L 31/05](#) - [H01L 31/055](#) should be considered in order to perform a complete search.

- 40/10 . Cleaning arrangements
- 40/12 . . Means for removing snow
- 40/20 . Optical components
- 40/22 . . Light-reflecting or light-concentrating means (directly associated with the PV cell or integrated with the PV cell [H01L 31/054](#))
- 40/30 . Electrical components
- 40/32 . . comprising DC/AC inverter means associated with the PV module itself, e.g. AC modules
- 40/34 . . comprising specially adapted electrical connection means to be structurally associated with the PV module, e.g. junction boxes
- 40/345 . . . {with cooling means associated with the electrical connection means, e.g. cooling means associated with or applied to the junction box (cooling means for PV cells [H01L 31/052](#), for PV modules [H02S 40/42](#))}
- 40/36 . . characterised by special electrical interconnection means between two or more PV modules, e.g. electrical module-to-module connection
- 40/38 . . Energy storage means, e.g. batteries, structurally associated with PV modules
- 40/40 . Thermal components ([H02S 10/30](#) takes precedence)
- 40/42 . . Cooling means (cooling means directly associated or integrated with the PV cell [H01L 31/052](#))
- 40/425 . . . {using a gaseous or a liquid coolant, e.g. air flow ventilation, water circulation}
- 40/44 . . Means to utilise heat energy, e.g. hybrid systems producing warm water and electricity at the same time (directly associated with the PV cell or integrated with the PV cell [H01L 31/0525](#))

**50/00 Monitoring or testing of PV systems, e.g. load balancing or fault identification**

**WARNING**

Groups [H02S 50/10](#) - [H02S 50/15](#) are incomplete pending reclassification of documents from group [H02S 50/00](#).

Until reclassification is complete, group [H02S 50/00](#) should be considered in order to perform a complete search.

- 50/10 . Testing of PV devices, e.g. of PV modules or single PV cells (testing of semiconductor devices during manufacturing {[H01L 22/00](#)})
- 50/15 . . using optical means, e.g. using electroluminescence

**99/00 Subject matter not provided for in other groups of this subclass**