US6106592 describes a gas cleaning process and apparatus for removing solid and liquid aerosols entrained in a gas stream. The gas to be treated is passed through a wetted, electrostatic ally charged filter media. The polarity of the electrostatic charge on the filter media is selected to enhance the removal of captured solid particles from the filter media. The apparatus is readily adaptable to a modular gas cleaning system configuration wherein varying numbers of the apparatus may be operated in parallel to provide a gas cleaning system of any desired gas flow capacity. Fields of 80-800 kV/m are applied.

EP0808660 describes a dust collector which can collect dust, especially fine dust (submicron particles). The dust collector, which removes dust and/or mist contained in a gas, comprises a charging means for charging dust and/or mist contained in a gas, a spraying means for spraying the charged dust or charged mist or spraying a dielectric material to the charged dust or mist, an electric field forming means for forming an electric field for subjecting the dielectric material to dielectric polarization, and a collecting means for collecting the dielectric material which have arrested at least either of the charged dust and charged mist. A field of 500 kV/m is applied.

WO2007100254 describes a method for the removal of smut, fine dust and exhaust gas particles from polluted air comprising providing a particle catch arrangement with a charged surface, the particle catch arrangement being arranged to generate a static electric field, wherein the electric field is at least 0.2 kV/m. The invention further provides a particle catch arrangement comprising a surface that can be charged, further comprising a generator arranged to generate charge to the surface that can be charged and to generate a static electric field of at least 0.2 kV/m, wherein the particle catch arrangement is part of, or integrated with, an object comprising street furniture.

Summary of the invention

There is a need for good and efficient systems that may remove for instance fine dust and/or germs from gas, especially from air. Prior art systems, such as described above, may not perform sufficiently and/or may further be optimized and/or may be simplified. ~~Therefore, it is an aspect of the invention to provide an alternative gas purification system and method for purifying air, especially for agricultural~~

~~applications, which preferably further at least partly obviate one or more of above described drawbacks.~~

According to a first aspect of the present invention, there is provided a gas purification system comprising a corona discharge system, the corona discharge system comprising: a. a conductive strip with longitudinal edges, wherein one or more of the longitudinal edges comprise tooth structures, wherein the tooth structures at the one or more longitudinal edges have tooth tops with shortest distances selected from the range of 2-200 mm; b. a counter electrode; and c. a voltage generator configured to apply a DC voltage of at least 10 kV to the conductive strip.

~~Hence, in a first aspect the invention provides a gas purification system (herein also indicated as "system" or "apparatus")) comprising a corona discharge system, the corona discharge system comprising (a) a conductive strip ("first electrode") with a longitudinal edge comprising tooth structures, wherein the tooth structures (longitudinal edges) have tooth tops with shortest distances (between the tooth tops) especially selected from the range of 0.5-1000 mm, especially selected from the range of 2-200 mm, and (b) a counter electrode ("second electrode"). The gas purification system may further comprise (c) a voltage generator configured to apply a DC voltage of preferably at least 5 kV, especially at least 10 kV, to the conductive strip. The voltage generator is especially configured to generate corona discharges at the tooth structures.~~

According to a second aspect of the present invention, there is provided a motorized vehicle, comprising a gas purification system according to the first aspect, configured to purify an exhaust gas of the motorized vehicle.

~~In a specific embodiment, the invention provides a motorized vehicle, comprising a gas purification system configured to purify an exhaust gas of the motorized vehicle, wherein the gas purification system comprises a corona discharge system, the corona discharge system comprising (a) a conductive strip (first electrode) with longitudinal edges, wherein one or more of the longitudinal edges (i.e. one longitudinal edge or both longitudinal edges) comprise tooth structures, wherein the tooth structures at the one or more longitudinal edges have tooth tops with shortest distances (especially along the relevant longitudinal edge), especially selected from the range of 2-200 mm, (b) a counter electrode (second electrode),~~

~~and (c) a voltage generator configured to apply a DC voltage of especially at least 10 kV to the conductive strip.~~

In an embodiment, the gas purification system is especially configured to apply a voltage difference of at least 10 kV between the conductive strip ("first electrode")~~first electrode~~ and the counter electrode ("second electrode")~~second electrode~~, with the former (the conductive strip) being configured as positive electrode; the latter especially being earthed (grounded).

Especially, the motorized vehicle, as indicated above, comprises a street sweeper comprising the gas purification system configured to purify the exhaust gas of a vacuum system of the street sweeper (and optionally or alternatively (also) the exhaust gas of an engine configured to propel the motorized vehicle). The vacuum system may especially be designed as outdoor vacuum litter collector, such as known in the art.

However, also other motorized vehicles are included herein (see below). In a further specific embodiment, the motorized vehicle (or more especially the gas purification system) comprises a plurality of said conductive strips, further comprises a gas channel comprising said plurality of conductive strips and said counter electrode, wherein the conductive strips are arranged in a zigzag like structure, and wherein the motorized vehicle is configured to allow an exhaust gas flow through the gas channel for purification of said exhaust gas.

The conductive strip is used as electrode (herein also indicated as "first electrode"), to which a potential is applied, preferably at least a voltage of 10 kV (i.e. during use, this electrode is positively charged with a voltage of e.g. at least 10 kV). It appears that with such configuration, gas comprising particles between the conductive strip and counter electrode, or even some distance away from the conductive strip and counter electrode and not between these electrodes, such as over a set of conductive strip and counter electrode, may be purified from particles. It further surprisingly appears that substantially better purification results are obtained than when using wires as electrodes and/or lower power consumption may be achieved. It also surprisingly appears that with the present invention, dimensional freedom is larger than with pure needles, which dimensional freedom may for instance be of relevance when applying the corona discharge system within a channel. ~~Not only are the~~The purification results may be better~~, also~~ and the energy consumption ~~is~~may also be lower.

~~The~~Embodiments of the present invention use~~s~~ the principle that the electrode(s) create a kind of an "electric wind" and an electric charging of the particles in the air, which will be directed by the "electric wind" due to the electric field between the conductive strip (first electrode) and the counter electrode (second electrode). The charged particles may be guided in the direction of the second electrode and deposit (on the second electrode or counter electrode). In this way, gas, such as air, can be purified.

The term "corona discharge" is known in the art. A corona is a process by which a current, perhaps sustained, develops from an electrode with a high potential in a neutral fluid, usually air, by ionizing that fluid so as to create a plasma around the electrode. The ions generated eventually pass charge to nearby areas of lower potential, or recombine to form neutral gas molecules. When the potential gradient is large enough at a point in the fluid, the fluid at that point ionizes and it becomes conductive. If a charged object has a sharp point, the air around that point will be at a much higher

polygonal (other than the already indicated rectangular, square, triangular, and hexagonal). In yet a further embodiment, a conductor is selected, which may be considered non-strip like, such as a conductor having a round cross-section.

Hence, ~~in a yet a further aspect~~an embodiment of the invention provides a gas purification system (herein also indicated as "system" or "apparatus") comprising a corona discharge system, the corona discharge system comprising (a) a (elongated) first electrode (such as a conductive strip) with tooth structures, wherein the tooth structures have tooth tops with shortest distances (between the tooth tops) selected from the range of 0.5-1000 mm, especially selected from the range of 2-200 mm, and (b) a counter electrode ("second electrode"). The gas purification system may further comprise (c) a voltage generator configured to apply a DC voltage of preferably at least 5 kV, especially at least 10 kV, to the conductive strip.

The (elongated) first electrode is used as electrode, to which a potential is applied, preferably at least a voltage of 10 kV (i.e. during use, this electrode is positively charged with a voltage of e.g. preferably at least 10 kV). It appears that with such configuration, gas comprising particles between the (elongated) first electrode and counter electrode, or even some distance away from the (elongated) first electrode and counter electrode and not between these electrodes, such as over a set of (elongated) first electrode and counter electrode, may be purified from particles. It further surprisingly appears that substantially better purification results are obtained than when using wires as electrodes and/or lower power consumption may be achieved. It also surprisingly appears that with the present invention, dimensional freedom is larger than with pure needles, which dimensional freedom may for instance be of relevance when applying the corona discharge system within a channel. ~~Not only are the~~The purification results maybe better~~, also~~ and the energy consumption ~~is~~may be lower.

Herein, embodiments of the invention ~~is~~are especially explained in relation to a conductive strip as (elongated) first electrode. However, in other ~~aspects~~embodiments of the invention, the (elongated) first electrode comprises an (elongated) electrode comprising a cross section which is selected from the group consisting of triangular, hexagonal, polygonal (other than the already indicated rectangular, square, triangular, and hexagonal), round, oval. In yet a further aspect, the cross section is a lateral distortion (i.e. a distortion perpendicular to a longitudinal axis of the (elongated) first electrode) of such cross-section as mentioned before. At a plurality of positions along such (elongated) first electrode (i.e. at the

longitudinal edge), superimposed on the above-indicated cross-section, the tooth structures are present. Hence, the herein defined cross-section can be seen as the basic or main cross section of the first (elongated) electrode, without taking into account the tooth structures.

Especially preferred cross-sections are triangular, square, rectangular, round or oval. However, as indicated above, embodiments of the invention ~~is~~are especially explained in relation to a conductive strip as (elongated) first electrode.

The tooth structures are a kind of needles or other "sharp" structures which are present on one, or optionally both of the longitudinal edges. Optionally, in addition to the tooth structures at one or both longitudinal edges, tooth structures may also be present at one or more longitudinal faces. In most of the description below, for the sake of argument it is assumed that either on one of the longitudinal edges the tooth structures are present or on both of the longitudinal edges the tooth structures are present (thus without tooth structures at other faces).

The tooth structure may have the shape of a needle, a tetrahedron, a square pyramid, a pentagonal pyramid, a pyramid having more faces then pentagonal, a star pyramid, a wedge like shape (like a triangular prism), a cone, etc. The wedge like shape may have its ridge parallel to the longitudinal direction, or perpendicular, or under any angle with a longitudinal (of the strip). The tooth structures can therefore be seen as protrusions or extension on the longitudinal edge. The tooth structures are used to generate corona discharges (when the purification system is in operation). In an embodiment, the strip comprises a plurality of different types of tooth structures. The tooth structures can also be seen as extended parts or spikes on the conductive strip. Note that the conductive strip and tooth structures especially are a single unit or entity i.e. form an integral part (of the same material).

In an embodiment, the tooth structures have tooth structure heights, defined by the difference in height between the tooth tops and valleys between adjacent tooth structures, selected from the range of 0.5-500 mm, preferably in the range of 0.5-200 mm, such as 1-200 mm, like for instance 0.5-50 mm.

In an embodiment, the tooth structures have a ratio between the shortest distances and tooth structure height selected from the range of 0.5-1000, especially 1-500, such as 2-200 mm, even more especially 1.5-20, such as 2-5 (i.e. the height of the tooth structures is in general smaller than the spacing between adjacent tooth tops).

configured to be grounded during use, and in another embodiment, the counter electrode is configured to be negatively charged during use.

The voltage generator may be any voltage generator suitable for generating a DC voltage. Optionally an AC signal may be superimposed on the DC voltage, as long as (during use of the apparatus) the sign of the signal does not change. The voltage generator may especially be configured to apply (during use of the apparatus) a DC voltage of at least 10 kV to the conductive strip, more preferably a DC voltage of at least 20 kV, and optionally an AC signal superimposed on the DC voltage. Hence, the method provided by embodiments of the invention includes applying a DC voltage of at least 10 kV, preferably at least 20 kV to the conductive strip. The voltage applied may especially not be larger than 50 kV, such as not larger than 40 kV, especially not larger than 30 kV (i.e. especially between the conductive strip and the counter electrode, with the conductive strip having the indicated voltage relative to the counter electrode).

Optionally, (as indicated above) a negative voltage is applied to the conductive strip. In those instances, the indicated voltages are the same, but with opposite sign. In such instances, the counter electrode may also be grounded. Optionally, the counter electrode is positively charged, see also below. Hence, in such embodiments, the voltage generator may in fact be configured to apply a DC voltage of at least -5 kV (i.e. -5 kV and more negative potentials), especially at least -10 kV (i.e. -10 kV and more negative potentials), to the conductive strip.

Hence, in an embodiment, during use, a voltage difference of preferably at least 10 kV, such as 10-50 kV, especially 10-40 kV, such as 10-30 kV, like at least 12 kV, is applied between the conductive strip and the counter electrode, with in an embodiment the conductive strip having a higher voltage than the counter electrode. For instance, to the conductive strip a voltage of 10 kV may be applied, while the counter electrode being earthed (grounded).

As indicated above, the counter electrode is preferably earthed, although in an embodiment, during use this counter electrode may also be negatively charged. Hence, in an embodiment, the voltage generator may be configured to apply (during use) a positive charge to the conductive strip and optionally a negative charge to counter electrode or the counter electrode is earthed. Hence, in an embodiment the conductive strip may be configured as positive electrode (during use) and the counter electrode may be earthed.

The voltage generator may further be configured to apply an electric current of at least 5 μA, such as at least 8 μA, more especially at least 10 μA, per meter conductive strip. With lower currents, the discharge may not be created or may not be effective enough. Hence, the method provided by embodiments of the invention may further comprise applying an electric current of at least 5 μA, such as at least 8 μA, more especially at least 10 μA, per meter conductive strip 310. Further, the gas purification system, more precisely the corona discharge system, may be configured to generate a current of at least 0.1 μA, even more especially at least 0.2 μA between the conductive strip and counter electrode, *per* tooth structure. Hence, assuming a strip with 10 tooth structures, the current generated between the conductive strip and counter electrode may for instance be 1 μA.

Preferably, the corona discharge system may be configured to generate a current of not more than 1A, especially not more than 50 mA, such as not more than 10 mA, especially not more than 5 mA, such as at maximum 500 μA per conductive strip. In yet a further embodiment, the corona discharge system may be configured to generate a current of especially not more than 100 μA between the conductive strip and counter electrode, *per* tooth structure, such as not more than 40 μA between the conductive strip and counter electrode, *per* tooth structure.

Due to the application of a positive (or negative) voltage to the conductive strip (during use of the system), an electric field is created between the conductive strip and the conductive counter electrode. Hence, the corona discharge system is especially arranged to create an electric field between the conductive strip (first electrode) and the counter electrode. The electric field is especially in the range of about 0.1-100 kV/m. In a specific embodiment, the electric field is in the range of about 0.5-100 kV/m, even more especially in the range of about 2-100 kV/m, yet even more especially in the range of about 4-100 kV/m. Especially, the electric field may be smaller than about 50 kV/m, more especially smaller than 20 kV/m. The electric field is applied between a first electrode, especially being a positive electrode arranged to generate a corona discharge, and a second electrode, especially being an earthed electrode.

In an embodiment, the tooth structures point in a direction of the counter electrode, i.e. the conductive strip and counter electrode are configured in such a way that the tooth structures point in a direction of the counter electrode. However, in yet another embodiment, the tooth structures may point in another direction. Depending

To further improve the result of the method, at least part of the purified gas may be returned to the gas purification system to be subjected again to the method for purifying air. Hence, the gas purification system may further comprise a gas return system, configured to recirculate at least part of the gas through the (elongated) gas channel.

In a further embodiment, the conductive strip is (though in electrical isolation) connected to the counter electrode. For instance, as indicated above, the counter electrode may be attached to the first face of the gas channel. However, as also indicated above, the application of embodiments of the invention is not limited to specific gas channels (enclosing one or more first electrodes / conductive strips with tooth structures).

In an embodiment, the combination of conductive strip and counter electrode may be a (relative simple) arrangement of a plate like counter electrode and the conductive strip attached to the plate like counter electrode (but not in electrically conductive contact, such as with one or more isolators, such as in between). The plate like counter electrode may have a counter electrode first face, a counter electrode second face and a counter electrode edge. Such plate like electrode may have a thickness defined by the distance between the counter electrode first face and the counter electrode second face (i.e. the edge height). The conductive strip may be attached to the counter electrode first face (with isolators, such as in between); optionally a plurality of conductive strips may be arranged to the counter electrode first face.

Optionally, one or more conductive strips may also be arranged to the counter electrode second face. The former embodiments, i.e. with one or more conductive strips at only the counter electrode first face may be attached (with the second face) to a wall, or a ceiling, or may be integrated in a gas channel, etc. The former embodiment and the latter embodiments, i.e. with one or more conductive strips also at the counter electrode second face may be arranged to suspend from a ceiling (such as in a vertical arrangement).

As indicated above, when applying a plurality of conductive strips (at one face), they may for instance be arranged parallel or in a head-tail arrangement.

~~In yet a further aspect,~~Embodiments of the invention also seek to provide~~s~~ a method for purifying a gas, especially air, from an accommodation, wherein the accommodation may for instance be selected from the group consisting of for instance a shed, a stable, a sty, a fold and a poultry farm, wherein the method comprises leading gas of the accommodation through

the gas purification system as defined herein, while applying a DC voltage of at least 10 kV to the conductive strip, with the conductive strip preferably being the positive electrode, and the counter electrode preferably being earthed. More in general, embodiments of the invention further seek to provides a method for purifying air comprising leading air through (or over) the gas purification system as defined herein, while applying a DC voltage of preferably at least 10 kV to the conductive strip ("first electrode"). The conductive strip especially may be enclosed within the (elongated) channel (see above and below).

Even more in general, embodiments of the invention also seek to provides a method for purifying a gas, such as air or (comprising an) exhaust gas. This may e.g. the air in an accommodation or an exhaust gas (comprising gas) of an engine, e.g. an engine configured to propel a vehicle.

~~Hence, in an aspect, the invention provides~~According to a third aspect of the invention, there is provided a method for purifying a gas ~~(like air or a gas comprising an exhaust gas)~~ comprising leading said gas through the gas purification system according to the first aspect~~as described herein,~~ while applying a DC voltage of ~~especially~~ at least 10 kV~~, especially at least 20 kV~~ to the conductive strip.

The method may further include transporting the gas through a gas channel comprising said conductive strip and said counter electrode with a flow speed in the range of 2.5-25 m/s. In an embodiment, the gas comprises an exhaust gas of a motorized vehicle, such as selected from the group consisting of a moped, a motor, a car, a truck, a coach, a train, a craft, a ship and a boat. For instance, the motorized vehicle comprises a street sweeper comprising the gas purification system configured to purify the exhaust gas of a vacuum system of the street sweeper. However, the gas purification system may also be applied to purify an exhaust gas (comprising gas) from an engine configure to propel such vehicle, or any other engine that exhaust an exhaust gas.

However, in alternative embodiments, the accommodation may be selected from the group consisting of a garage, a hangar, a plant or factory, a railway station, a bus station, etc. However, also outdoor applications of the gas purification system and/or method of the invention are conceivable. Such as along a road, at a square, outdoor at a plant, etc.; see also below when describing the particle catch arrangement.

In yet a further embodiment, the gas purification system may be configured to purify an exhaust gas, such as of a hydrocarbon based, such as a fossil fuel based, engine, like a diesel engine. This may be the engine of a motorized vehicle, like a moped, motor, a car, a truck, a coach, a train, etc., or a motorized craft, like a ship or boat, etc., or of any other motorized vehicle This engine may also be an engine of a

as pigs, cows, horses, goats, pigeons, birdhouse birds, tropical birds, gooses, mink animals or fir animals. The method may be applied within such building, or a unit (comprising the gas purification system, see below), may be provided to which the air of the building is guided for treatment according to the invention. The phrase "method for the removal" and/or the term "purification" include a partial removal and does not necessarily indicate a total removal or total purification. In an embodiment, the method may also be applied for purifying a gas, especially air, from other accommodations that are mentioned herein. As indicated above, in some embodiment "leading gas through the gas purification system" may also include leading gas over or along the set of counter electrode and first electrode, especially, when assuming a plate like counter electrode, at the side of the counter electrode where the first electrode (or conductive strip (with needles)) is configured.

However, as indicated above, the system and method may also be applied in for instance a garage, a hangar, a plant or factory, a railway station, a bus station; or in outdoor applications. However, the gas purification system may for instance also be used to remove undesired particles (and optionally gasses) from for instance (gas, especially air, from) a laboratory, a plant, a hospitality area, a clean room, an operation chamber, etc. The gas purification system may also be applied to clean an exhaust gas, such as from a plant, a motorized vehicle (such as a moped, a motor, a car, a coach, a truck, a train, a boat, etc.)(see also above).

Hence, the gas purification system of the invention may in an embodiment be used for cleaning gas, especially air, from an accommodation, such as for instance selected from the group consisting of a shed, a stable, a sty, a fold and a poultry farm, etc., or for instance selected from a laboratory, a plant, a hospitality area, a clean room, and an operation chamber, etc., but in an embodiment also for cleaning gas of other sources, such as indicated above. Especially, the gas purification system of the invention may be used for the removal of fine dust from a gas, especially air, and/or for the removal of germs like bacteria, viruses, spores, fungi (from a gas, especially air) and also for the removal of parasites (from a gas, especially air). More especially, the gas purification system provided by embodiments of the invention may be used for the removal of fine dust from a gas and/or for the removal bacteria, viruses and fungi, from a gas, especially air.

The gas purification system may be arranged within the accommodation or may be arranged outside the accommodation (in gaseous contact with at least part of the atmosphere within the accommodation).

In a specific embodiment, especially when the air is humid or humidified, for instance humidified with a water haze, the gas purification system of the invention may also be used for the removal of ammonia (NH_3) and/or undesired odours, and/or other compounds, from a gas. In a specific embodiment, the apparatus further comprises a liquid atomizer or nebulizer, configured to provide a liquid haze, such as a water haze between the conductive strip and the counter electrode. The haze may be generated within the (elongated) gas channel, but may also be generated upstream from the inlet of the (elongated) gas channel.

~~Hence, the invention also provides in a further aspect~~According to a fourth aspect of the present invention, there is provided an accommodation,~~ such as~~ selected from the group consisting of a shed, a stable, a sty, a fold and a poultry farm, ~~or another accommodation, such as indicated above,~~ comprising the gas purification system~~, as described herein,~~ according to the first aspect for purifying the air of the accommodation.

However, as indicated above, the gas purification system, optionally including such liquid atomizer or nebulizer, may also be applied for gas purification of hydrocarbon based engines, or for purifying gas from an exhaust of a vacuum clean system, such as a street sweeper.

According to a fifth aspect of the present invention, there is provided a particle catch arrangement for the removal of one or more of fine dust bacteria, viruses, spores, fungi and parasites, especially bacteria, viruses and fungi, from a gas, the particle catch arrangement comprising the gas purification system according to the first aspect, wherein at least part of the gas purification system is part of, or integrated with, an object comprising street furniture, for instance a sound barrier, a crash barrier, a tunnel wall, a road sign, a traffic information system, a street lamp or a traffic light.

~~The invention further provides a particle catch arrangement comprising the gas purification system as defined herein, wherein at least part of the gas purification system is part of, or integrated with, an object comprising street furniture, for instance a sound barrier, a crash barrier, a tunnel wall, a road sign, a traffic information system, a street lamp or a traffic light.~~

For instance, the counter electrode may be part of such street furniture. This may also enclose embodiment wherein a part of street furniture is integrated in the gas purification system. For instance, part of a tunnel wall might be used as counter electrode. In a specific embodiment, the counter electrode is attached to or integrated in one or more of a sound barrier, a crash barrier, and a tunnel. In a specific embodiment, the gas purification system comprises the conductive strip and a plate-like counter electrode, wherein both are arranged parallel to the (local) earth's surface, wherein in an embodiment the counter electrode comprises a curved element, which may be attached to ore integrated in for instance a tunnel wall.

The term “substantially” herein, such as in “substantially parallel” or in “substantially consists”, will be understood by the person skilled in the art. The term “substantially” may also include embodiments with “entirely”, “completely”, “all”, etc. Hence, in embodiments the adjective substantially may also be removed. Where applicable, the term “substantially” may also relate to 90% or higher, such as 95% or higher, especially 99% or higher, even more especially 99.5% or higher, including 100%. The term “comprise” includes also embodiments wherein the term “comprises” means “consists of”.

Furthermore, the terms first, second, third and the like in the description and in the claims, are used for distinguishing between similar elements and not necessarily for describing a sequential or chronological order. It is to be understood that the terms so used are interchangeable under appropriate circumstances and that the embodiments of the invention described herein are capable of operation in other sequences than described or illustrated herein.

The apparatus herein are amongst others described during operation. As will be clear to the person skilled in the art, embodiments of the invention ~~is~~are not limited to methods of operation or devices in operation.

It should be noted that the above-mentioned embodiments illustrate rather than limit the invention, and that those skilled in the art will be able to design many alternative embodiments without departing from the scope of the appended claims. ~~In the claims, any reference signs placed between parentheses shall not be construed as limiting the claim.~~ Use of the verb "to comprise" and its conjugations does not exclude the presence of elements or steps other than those stated in a claim. The article "a" or "an" preceding an element does not exclude the presence of a plurality of such elements. For instance, the term strip may also refer to a plurality of strips. ~~The~~Embodiments of the invention may be implemented by means of hardware comprising several distinct elements, and by means of a suitably programmed computer. In the device or apparatus claims enumerating several means, several of these means may be embodied by one and the same item of hardware. The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measures cannot be used to advantage.

~~The invention further applies to an apparatus comprising one or more of the characterising features described in the description and/or shown in the attached~~

~~drawings. The invention further pertains to a method or process comprising one or more of the characterising features described in the description and/or shown in the attached drawings.~~

The various aspects discussed in this patent can be combined in order to provide additional advantages. Furthermore, some of the features can form the basis for one or more divisional applications.

Brief description of the drawings

Embodiments of the invention will now be described, by way of example only, with reference to the accompanying schematic drawings in which corresponding reference symbols indicate corresponding parts, and in which:

Figs. 1a-1j schematically depict some aspect of possible variants of the conductive strip;

Figs. 2a-2g schematically depict some embodiments of the gas purification system;

Fig. 3a-3c schematically depicts some embodiments of possible isolators, such as bushings;

Figs. 4a-4f schematically depicts some embodiment and variants thereon of the gas purification system of the invention;

Figs. 5a-5f schematically depicts some applications of the gas purification system of the invention;

Figs. 6a-6c schematically depict some further applications of the gas purification system;

Figs. 7a-7d schematically depict some further variants;

Figs. 8a-8e very schematically depict a non-limiting number of applications; and

Figs. 9a-9c schematically depict some further embodiments.

The drawings are not necessarily on scale

Description of preferred embodiments

Figs. 1a-1j schematically depict a non-limiting number of embodiments of the conductive strip, indicated with reference 310. Other variants may be possible as well.

The conductive strip 310 has a longitudinal edge 313 comprising tooth structures 150. The tooth structures 150 have tooth tops 151 with shortest distances dt, such as