

## Title (en)

Process and apparatus for treating the surface of a substrate with an electrical discharge between two electrodes in a gas mixture

## Title (de)

Verfahren und Vorrichtung zur Oberflächenbehandlung von Substraten durch elektrische Entladungen zwischen zwei Elektroden in einer Gasmischung

## Title (fr)

Procédé et dispositif pour le traitement de surface d'un substrat par décharge électrique entre deux électrodes dans un mélange gazeux

## Publication

**EP 0914876 B1 20011010 (FR)**

## Application

**EP 98402730 A 19981102**

## Priority

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## Abstract (en)

[origin: EP0914876A1] The equipment treats a moving substrate (3) with an electrical discharge. Each processing stage (1,2) has two roller electrodes (9,11) and an injector to deliver a gas mixture between the rollers. The substrate (3) is moved first between the two roller electrodes against one roller or one surface treatment followed by a second pass against the other roller or other surface treatment. In an Independent claim an apparatus to give a surface treatment to a substrate (3) through an electrical discharge in a gas mixture forms a byproduct to be deposited on one of the roller electrodes, to be transferred to the substrate surface. The roller electrodes (9,11) are parallel, with a gap between the pairs to take the mechanisms (19,21-23) to guide the substrate (3) through the processing stages and deflect the substrate against the roller surfaces. **PREFERRED FEATURES** The width of the substrate to be treated is at least equal to the length of the space between the electrodes where there is an electrical discharge within a gas mixture. The deflection rollers (19,21-23) guide the substrate (3) through the stages (1,2), and in sequence, to present their surfaces for treatment. The length of at least one roller electrode is set to match the width of the substrate. The injector for the gas mixture matches the substrate width, and extends from one end of the roller electrode to the other end, with an adjustment to set the injector width by blocking the jet outlet length as required. An extractor removes used gas from the apparatus, together with air carried in by the substrate, positioned under a pair of deflection rollers (19,21) and over a pair of roller electrodes (9,11). The extractor has a suction block for each deflection roller and an intermediate block between them, with a concave surface matching the curvature of the deflection roller. It has a suction opening to extract the gas atmosphere between the roller and the block, into the suction block.

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## IPC 8 full level

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