

CLAIMS:

1. A method of processing a substrate having a front side comprising an electrical circuit and a rear side comprising an exposed zone that faces the electrical circuit, the method comprising:
 - 5 - an electrochemical treatment step in which an electrical potential is laterally applied at least to the exposed zone on the rear side of the substrate, while the exposed zone is in contact with a chemically reactive substance, the electrical potential causing a lateral flow of electrical current at least in the exposed zone, the lateral flow of electrical current and the chemically reactive substance altering the substrate in at least the exposed
10 zone.
2. A method of processing a substrate according to claim 1, wherein the electrical potential is laterally applied to at least to the exposed zone on the rear side of the substrate by means of:
 - 15 - an electrode arrangement disposed on the rear side of the substrate; and
 - an electrode arrangement within the chemically reactive substance that faces the exposed zone on the rear side of the substrate.
3. A method of processing a substrate according to any of claims 1 and 2,
20 wherein, throughout the electrochemical treatment step, the electrical potential is laterally applied to the exposed zone in a non-homogenous fashion in at least one of the following dimensions: space and time, so as to define at least one of the following characteristics: a volume within the substrate where the substrate is altered, a varying degree of alteration throughout the volume, and a varying form of alteration throughout the volume.
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4. A method of processing a substrate according to claims 2 and 3, wherein the electrode arrangement within the chemically reactive substance has a shape that causes the electrical potential to be applied to the exposed zone in a non-homogenous fashion.

5. A method of processing a substrate according to claim 2 and 3, wherein the electrode arrangement within the chemically reactive substance has a shape that changes at least one time during the electrochemical treatment step.
- 5 6. A method of processing a substrate according to claim 2 and 3, wherein the electrode arrangement within the chemically reactive substance comprises an array of electrodes, whereby, in the electrochemical treatment step, at least a part of respective voltages applied to respective electrodes in the array of electrodes change at least one time during the electrochemical treatment step.
- 10 7. A method of processing a substrate according to any of claim 1 to 6, wherein the substrate comprises, at least in the exposed zone, a material that, when in contact with the chemically reactive substance while an electrical current flows through the material, alters depending on radiation applied to the material, wherein, in the
15 electrochemical treatment step, radiation is non-homogenously applied to the exposed zone.
8. A method of processing a substrate according to claim 2, wherein the exposed zone on the rear side of the substrate comprises at least one electrochemical
20 treatment cell, an electrochemical treatment cell comprising a set of cavities disposed around an electrode that forms part of the electrode arrangement on the rear side of the substrate, wherein, in the electrochemical treatment step, the chemically reactive substance enters the set of cavities.
- 25 9. A method of processing a substrate according to any of claims 1 to 8, wherein the substrate comprises an alteration stop layer at least disposed between the electrical circuit at the front side and the exposed zone on the rear side, the alteration stop layer comprising a material that is relatively resistant to the chemically reactive substance.
- 30 10. A method of processing a substrate according to claim 9, wherein the alteration stop layer comprises a semiconductor material.

11. A method of processing a substrate according to any of claims 1 to 10, wherein the substrate comprises an electrically insulating layer disposed between the electrical circuit at the front side and the rear side.
- 5 12. A method of processing a substrate according to any of claims 9 and 10 and according to claim 11, wherein the electrically insulating layer is disposed between the electrical circuit at the front side and alteration stop layer.
13. A method of processing a substrate according to any of claims 1 to 12,
10 wherein the lateral flow of current and the chemically reactive substance cause pores to be formed in the substrate inwardly from at least the exposed zone.
14. An integrated circuit device that includes a substrate having a front side comprising an electrical circuit and a rear side in which a zone faces the electrical circuit,
15 whereby the substrate has been altered by applying a method in accordance with any of claims 1 to 13 at least in a volume comprised between the electrical circuit and the zone in the rear side that faces the electrical circuit.
15. An integrated circuit device according to claims 14, wherein the volume
20 comprises pores that have been formed by applying a method in accordance with any of claims 1 to 13.