CLAIMS

1. A coated substrate comprising in order:

a) a substrate;

b) a seed layer comprising Ti or oxides thereof;

c) one or more corrosion-resistant layers comprising Ti, Nb or oxides thereof, each layer comprising first, second and third sublayers wherein the amount of Ti increases from the first to the third sublayer and the amount of Nb decreases from the first to the third sublayer, and

d) a conductive layer comprising Nb, or nitrides and/or oxides thereof.

2. A coated substrate according to claim 1 wherein the ratio of Ti and Nb in each sublayer of the one or more corrosion-resistant layers is constant across its thickness.

3. A coated substrate according to claim 1 wherein the ratio of Ti and Nb in at least the first and third sublayers of the one or more corrosion-resistant layers varies across its thickness.

4. A coated substrate according to any one of claims 1 to 3 wherein the substrate is a titanium substrate.

5. A coated substrate according to any one of claims 1 to 4 wherein the seed layer further comprises Nb or oxides thereof.

6. A coated substrate according to any one of claims 1 to 5 wherein the seed layer has a thickness of from 20nm to 1000nm.

7. A coated substrate according to any one of claims 1 to 6 wherein each sublayer in the corrosion-resistant layer has a thickness of from 20nm to 500nm.

8. A coated substrate according to any one of claims 1 to 7 comprising two or more corrosion-resistant layers, each layer comprising first, second and third sublayers as defined in any one of claims 1 to 8.

9. A coated substrate according to any one of claims 1 to 8 wherein the conductive layer further comprises Ti or oxides, oxynitrides and/or nitrides thereof.

10. A coated substrate according to any one of claims 1 to 9 wherein the overall thickness of the seed layer, one or more corrosion-resistant layers and the conductive layer is from 180nm to 9000nm.

11. A coated substrate according to any one of claims 1 to 10 wherein the substrate is selected from an electrolyser component, bipolar plate, current collector and porous transport layer.

12. A method of making a coated substrate according to any one of claims 1 to 11, the method comprising depositing onto the substrate in order:

a) the seed layer;

b) the one or more corrosion-resistant layers; and

c) the conductive layer.

13. An electrolyser comprising a coated substrate according to any one of claims 1 to 11.