

METHOD FOR THE FABRICATION OF ELECTRODES FOR ELECTROCHEMICAL DEVICES



SUMMARY

A method for producing catalytically active electrochemical electrodes with maximized surface area is invented. The electrode material is deposited epitaxially in the form of a thin film on a substrate enforcing exposure of the catalytically most active plane of the electrode material. The substrate is removed, the electrode material is divided into pieces and transferred on a two- or three- dimensional conductive support which can be a two-dimensional conductive foil which may be folded or a three-dimensional conductive fabric, sponge or cage-like structure. The resulting two- or three-dimensional arrangement of the electrode material pieces maximizes surface area while maintaining the highest possible catalytic activity to establish a method for fabricating electrochemical electrodes with the highest possible efficiency for a certain electrode material.

KEY POINTS / ADVANTAGES

- The overall result is a three-dimensional arrangement of the electrode material pieces with a much increased surface area by folding the original surface after epitaxial growth while, at the same time, still exhibiting only the surface with the highest possible catalytic activity of the electrode material.
- This establishes a method to produce electrochemical electrodes with the highest possible efficiency for a certain electrode material.

MARKETING OPPORTUNITIES

Depending on application: Hospitals, car industry, food industry, chemical industry

Identification Code

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Patent Status

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Industry Categories

Materials & Manufacturing

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