Title (en)

MICRODISCHARGE DEVICES WITH ENCAPSULATED ELECTRODES AND METHOD OF MAKING

Title (de)

MIKROENTLADEGERÄTE MIT EINGESCHLOSSENEN ELEKTRODEN UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

DISPOSITIFS A MICRODECHARGE COMPRENANT DES ELECTRODES ENCAPSULEES, PROCEDE DE FABRICATION CORRESPONDANT

Publication

EP 1797579 A4 20090415 (EN)

Application

EP 05858440 A 20051004

Priority

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- US 95817504 A 20041004

Abstract (en)

[origin: WO2007011388A2] An embodiment of the invention is a microdischarge device including a first electrode (230) encapsulated in a dielectric, which may be a nanoporous dielectric film. A second electrode (240) is provided which may also be encapsulated with a dielectric. The electrodes are configured to ignite a discharge in a microcavity when a time-varying (an AC, RF, bipolar or a pulsed DC, etc.) potential is applied between the electrodes. In specific embodiments of the invention, the second electrode may be a screen covering the microcavity opening and the microcavity may be closed at one end. In some embodiments of the invention, the second electrode may be in direct contact with the first electrode. In other embodiments, a gap separates the electrodes. In a preferred method of manufacturing microdischarge devices with encapsulated electrodes, a metal substrate is used to form a nanoporous dielectric encapsulated electrode and dissolve a portion of the dielectric layer. The dielectric layer is then anodized a second time, resulting in a nanoporous dielectric encapsulated electrode with improved regularity of the nanoscale dielectric structures. In some embodiments of the invention, the columnar voids in the dielectric may be backfilled with one or more materials to further tailor the properties of the dielectric.

IPC 8 full level

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CPC (source: EP KR)

H01J 9/02 (2013.01 - EP KR); **H01J 17/04** (2013.01 - EP KR)

Citation (search report)

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DOCDB simple family (application)

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