

Title (en)

PLASTIC PLATELET FUEL CELLS EMPLOYING INTEGRATED FLUID MANAGEMENT

Title (de)

BRENNSTOFFZELLE MIT PLASTIKLAMELLEN UND INTEGRIERTEM FLÜSSIGKEITSMANAGEMENT

Title (fr)

PILES A COMBUSTIBLES A LAMELLES PLASTIQUES FAISANT INTERVENIR UNE GESTION INTEGREE DES FLUIDES

Publication

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Application

EP 96916464 A 19960517

Priority

- US 9606877 W 19960517
- US 44313995 A 19950517

Abstract (en)

[origin: WO9637005A1] Improved fuel cell stacks (1) constructed from a plurality of cells, each comprising a series of interrelated mono and bipolar collector plates (BSPs), which in turn are built up by lamination of a core of related non-conductive plastic or ceramic platelets (12) sandwiched between conductive microscreen platelets of metal or conductive ceramic or plastic with an electrode membrane (EMA) (5 A, B, C, D) between adjacent BSPs. The platelets, both metal and plastic of the composite BSPs, are produced from sheet material with through and depth features (18, 17) formed by etching, pressing, stamping, casting, embossing and the like. Adjacent plates each with correspondingly relieved features form serpentine channels within the resultant monolithic platelet/cell stack for integrated fluid and thermal management. The plastic platelets are particularly useful for PEM fuel cells employing H₂ and Air/O₂ as fuel. The platelets are easily made by printing (embossing) processes, and dies made by photolithographic etching for rapid redesign. Each BSP can be individually tailored to each type of membrane, fuel, and intra-cell location within the stack (1). As materials are cheap and easy to manufacture and assemble, lightweight fuel cells of very high power density are realizable. Industrial applicability includes both stationary and vehicular power supplies, in both micro and macro sizes.

IPC 1-7

H01M 8/02

IPC 8 full level

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Citation (search report)

- No further relevant documents disclosed
- See references of WO 9637005A1

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