

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.: 11/196,632  
Filing Date: August 03, 2005  
Appellant: Youssef M. Mikhail  
Group Art Unit: 1795  
Examiner: Stephen J. Yanchuk  
Title: DURABILITY FOR THE MEA AND BIPOLAR PLATES  
IN PEM FUEL CELLS USING HYDROGEN  
PEROXIDE DECOMPOSITION CATALYSTS  
Attorney Docket: GP-305881

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**APPELLANT'S REPLY BRIEF**

This is Appellant's Reply Brief filed in response to the Examiner's Answer mailed May 19, 2010 to which a response is due by July 19, 2010. Please consider the comments below.

Appellant respectfully maintains that the catalyst layers 220 and 222 disclosed by Hampden-Smith are nothing more than the standard electrocatalyst layers common to most fuel cells. Appellant's parallel electrocatalyst layer is disclosed in paragraph [0015] of Appellant's specification. The claimed decomposition catalyst on each of the bipolar plate, the diffusion media layer and the MEA is discussed in paragraph [0019] of Appellant's specification. Thus, Appellant respectfully maintains that Hampden-Smith does not anticipate Appellant's claimed invention because, as discussed above, there is a clear structural difference.

As discussed on page 9 of the Appeal Brief, Hampden-Smith does not expressly or inherently disclose a decomposition catalyst layer on the fluid distribution layers or the bipolar plates. Thus, Appellant respectfully maintains that this structural aspect of Appellant's claimed invention does not exist in Hampden-Smith.

As disclosed in paragraph [0100] of Hampden-Smith, the supported catalysts include an active species phase that is dispersed on a support phase. The support particles may be RuO<sub>2</sub>. Clearly Hampden-Smith is not teaching a layer of RuO<sub>2</sub> as the electrocatalyst layer, because the electrocatalyst layer is dispersed on a support which may be RuO<sub>2</sub>. Thus, the electrocatalyst layer does not even include RuO<sub>2</sub>, as it is merely supported by RuO<sub>2</sub>. Accordingly, Appellant respectfully disagrees with the Examiner's assertion, on page 10 of the Examiner's Answer that, "A layer that includes a specific particle is a layer of the particle."

The Examiner asserts, also on page 10 of the Examiner's Answer, that the limitation "facing the MEA" does not specify the location of the catalyst. Appellant respectfully submits that this statement lacks a rational basis and ignores the plain meaning that one of ordinary skill would apply to "facing the MEA." Appellant respectfully submits that there is a finite amount of space inside a fuel cell, and the language "facing an MEA" imparts a meaning that one skilled in the art would understand, particularly as applied to the layer of ruthenium oxide on the bipolar plate.

It is the Examiner's position, on page 11 of the Examiner's Answer, that methods of depositing RuO<sub>2</sub> do not impact the structure of the claims. Appellant respectfully reminds the Board of MPEP 2113, which states, "The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps

would be expected to impart distinctive structural characteristics to the final product." See *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979). Hampden-Smith discloses RuO<sub>2</sub> as a support, whereas Appellant's claimed invention discloses a decomposition catalyst deposited by a chemical vapor deposition process. Appellant respectfully submits that the process of depositing, via chemical vapor deposition, indicates that the resulting layer is clearly different from a support structure upon which a layer may be deposited. Accordingly, Appellant maintains that Hampden-Smith does not teach Appellant's exact structure, and therefore does not anticipate Appellant's claimed invention.

Finally, the Examiner states, also on page 11 of the Examiner's Answer, that the depth of the layer is interpreted to have the thickness claimed by Appellant. However, the catalyst layer discussed by Hampden-Smith is the layer that is supported by a metal oxide, and has nothing to do with a decomposition catalyst layer as claimed by Appellant.

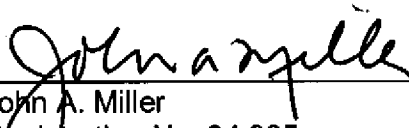
In view of the foregoing, it is respectfully requested that the Examiner's rejections be reversed.

Respectfully submitted,

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