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- (71) Applicant: THE UNIVERSITY OF LEEDS [GB/GB];  
Leeds Yorkshire LS2 9LJ (GB).
- (72) Inventors: ALHAZMI, Nahla Eid; School of Process,  
Environmental and Materials Engineering, The University  
of Leeds, Leeds Yorkshire LS2 9JT (GB). INGHAM,  
Derek Binns; School of Process, Environmental and Ma-  
terials Engineering, The University of Leeds, Leeds York-  
shire LS2 9JT (GB). ISMAIL, Mohamad Saeed; School  
of Engineering, Environmental and Materials Engineering,  
The University of Leeds, Leeds Yorkshire LS2 9JT (GB).  
HUGHES, Kevin James; School of Process, Environ-  
mental and Materials Engineering, The University of  
Leeds, Leeds Yorkshire LS2 9JT (GB). MA, Lin; School  
of Process, Environmental and Materials Engineering, The  
University of Leeds, Leeds Yorkshire LS2 9JT (GB).  
POURKASHANIAN, Mohamed; School of Process, En-

vironmental and Materials Engineering, The University of  
Leeds, Leeds Yorkshire LS2 9JT (GB).

- (74) Agent: MARKS & CLERK, LLP; 62-68 Hills Road,  
Cambridge Cambridgeshire CB2 1LA (GB).
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(54) Title: PROTON EXCHANGE MEMBRANE FUEL CELL

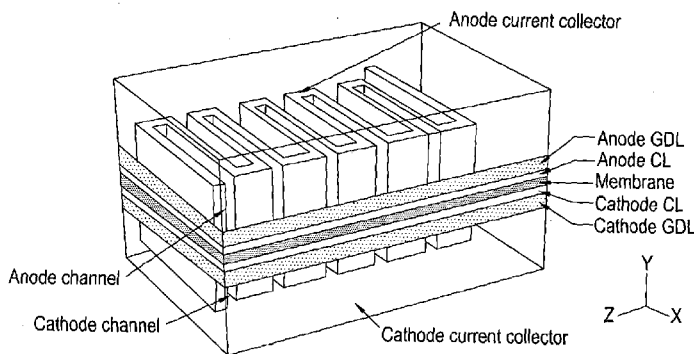


Fig. 1

(57) Abstract: The invention relates to a proton exchange membrane fuel cell and a method of designing the same. A method of designing a proton exchange membrane fuel cell comprising a gas diffusion layer is described. The method comprises: using a model of the proton exchange membrane fuel cell to determine performance of the fuel cell, wherein the model is based on a plurality of parameters of the fuel cell, the plurality of parameters including at least one anisotropic property of the gas diffusion layer, adjusting at least one of the plurality of parameters; determining whether or not performance of the fuel cell is improved by the adjusting step and designing the fuel cell by selecting the parameters which provide improved performance. A proton exchange membrane fuel cell is also described comprising a gas diffusion layer, the proton exchange membrane fuel cell having a plurality of parameters, wherein the parameters are selected to provide substantially uniform temperature distribution across the gas diffusion layer.

