Proton exchange membrane fuel cell modelling for automotive applications

Abstract

With the introduction of progressively more stringent emissions regulation, decarbonisation targets, and energy resource constraints, hydrogen fuel cell vehicles have attracted interest from vehicle manufacturers, governments, and consumers. This paper describes computational modelling of a proton exchange membrane fuel cell for use in a fuel cell electric vehicle. Predicting fuel cell performance allows for selection of fuel cell system components to maximise efficiency in automotive applications. This paper reviews EU and Global Technical Regulation for hydrogen powered vehicles, and includes a description of commercially available fuel cell stacks and systems.

Image





Biography

Jonathan Amirmadhi is an automotive engineer with a passion for clean personal transport and smart mobility. The challenge of meeting rising demands for efficient mobility within limited physical infrastructure capacity is complex, and will require multiple innovations, bringing together different modes of transport, communication networks, personal devices, and digital and physical infrastructure. Zero emission vehicles will provide an important cornerstone in the new model of urban mobility, with hydrogen fuel cell electric vehicles showing great promise.

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Notes/Comments:

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