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European Powder Metallurgy Congress and Exhibition, Euro PM 2018; Bilbao Exhibition Centre (BEC)Bilbao; Spain; 14 October 2018 through 18 October 2018; Code 156875

Recent progress in the development of metal-supported fuel cells (Conference Paper)

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Abstract

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Metal supported fuel cells (MSCs) are attractive candidates for power generation in mobile applications e.g. as on-board auxiliary power unit in heavy-duty trucks or as range extender in battery electric vehicles. Compared to all-ceramic fuel cells, the metal support improves thermal management, reduces production costs and eases handling and sealing. Recently, significant progress of cell performance was achieved by optimizing the specific processing of both electrodes. Here, controlling of p(O₂) in the sintering atmosphere plays an important role to avoid oxidation of the metal support reliably. In addition, development of dual phase electrodes (Cathode = La_{0.58}Sr_{0.4}CoO₃/Gd-doped CeO₂, anode = Nickel/Gd-doped CeO₂) was found to be a promising approach to increase electrochemical performance and mechanical stability in parallel. The presentation summarizes recent results including a general discussion of factors which must be considered to achieve improved stability during long-term operation as well. © European Powder Metallurgy Association (EPMA).

SciVal Topic Prominence [ⓘ](#)

Topic: Plasma Spraying | Solid Oxide Fuel Cells | Yttria-stabilized Zirconia

Prominence percentile: 90.142



Indexed keywords

Engineering
controlled terms:

Battery electric vehicles Cell culture Cerium oxide Cobalt compounds
Electrochemical electrodes Gadolinium compounds Gas fuel purification
Lanthanum compounds Mechanical stability Metals Powder metallurgy Sintering
Strontium compounds

Engineering
uncontrolled terms

Auxiliary power units Cell performance Electrochemical performance Heavy duty trucks
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