Enhancing Water Analysis for improved Performance and Durability of FCEVs Maximilian Käfer, Viktor Hacker, Merit Bodner



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Addressing the Challenges

In order to tackle the aforementioned challenges, this [1] Liu Z., et. al., Applied Energy, 275, 115110, 2020. work intends to have an open multi-functional [2] Fluckiger R., et. al. J Power Sources, 172, 324-333, modular system employed to conduct further 2007.

investigations. Within the exhaust path of this system, [3] Wu J., et. al., et. al. J Power Sources, 188, 199-204, 2009. a product water sensor should be integrated to [4] Wang X. R., et. al., Journal of Hydrogen Energy, 46, facilitate the development of a fluoride detection 12206-12229, 2021.

sensor. Additionally, plans are underway to develop [5] Bodner M., Hohenauer C., Hacker V., Journal of Power heatable optical windows for monitoring water Sources, 295, 336-348, 2015.

transport. To quantify the presence of liquid water, [6] Bodner M., Rami M., Marius B., ECS Transactions, 75, optical cells incorporating spectroscopic methods are 703-706, 2016.

being considered.

[7] Hacker V., Mitsushima S., Fuel Cells and Hydrogen -From Fundamentals to Applied Research.

Potential Benefits and Application

- Enhance fuel cell performance
- Improved efficiency
- Improved reliability
- Improved durability
- Directly applied to real-world scenarios

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