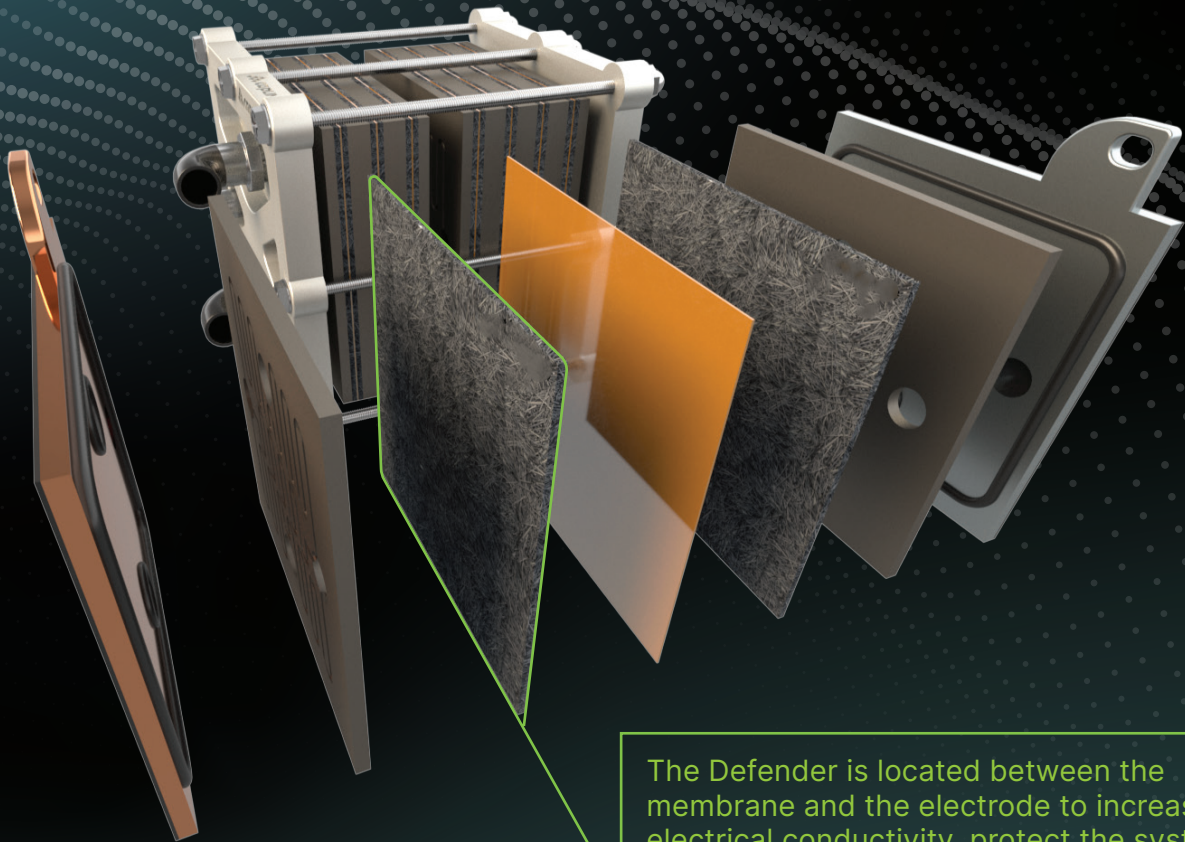


H₂U DEFENDER[®]

TECHNOLOGIES

Increase the performance and extend the life of your electrolyser cells



The Defender is located between the membrane and the electrode to increase electrical conductivity, protect the system from catalyst dissolution, reduce gas cross-over and prevent corrosion.



Extend the life of PEM and AEM stacks



Increased durability under aggressive, intermittent power



Lower contact resistance, higher conductivity, lower energy consumption



Recombination catalyst reduces the risk of gas cross-over

Contact Us

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Overview

H2U Defender is a catalyst layer on the oxygen diffuser (or Porous Transport Electrode) that reduces cell and stack electrical losses and is a defence against deteriorating catalyst coated membranes. The Defender increases electrical conductivity and provides co-catalysis when power input is very high. When the membrane thins and gas cross-over rises, Defender recombines the gases safely to extend operating life and reduce total cost of produced hydrogen.

Key Benefits



Increased durability in aggressive conditions

After 10,000 hours of high-stress operation including renewable energy input cycles from truly zero power to 3 times nameplate input, Defender remains in-place to protect and extend life. This enables operational flexibility and increased capital amortization.

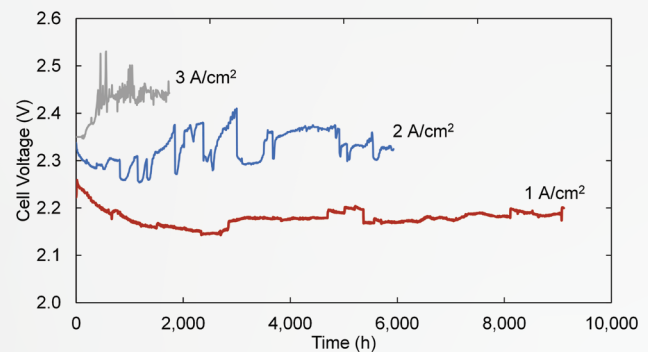


Extend the life of your electrolyser stacks

H2U Defender applied to Porous Transport Layers (PTL) adds a highly conductive, strong layer for protection to extend the life of electrolyser cells. This rugged, durable and reliable layer does the work when catalysts on fragile membranes deteriorate from harsh operating conditions. When the primary iridium catalyst dies, cells with Defender installed continue to operate safely at reduced efficiency inherent to the longest life catalysts.

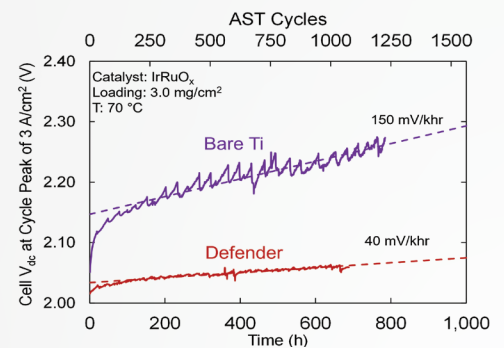
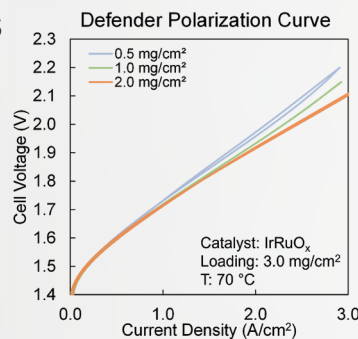
Reliable and Durable

Defender reduces resistance, lowering cell voltages, and has been repeatedly demonstrated to last for thousands of hours in Accelerated Stress Testing.



Improved Performance vs Industry Standards

Defender samples have proven superior electrical conductivity thereby reducing energy consumption and operating cost. Every electrolyser can benefit from the Defender.



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