



JM

Powering the future of fuel cells

Delivering high performing catalyst coated membranes
and membrane electrode assemblies



Johnson Matthey
Inspiring science, enhancing life

Fuel cells for decarbonising transportation and energy

Transportation is one of the most significant contributors to greenhouse gas emissions globally, so fuel cells are an attractive solution as societies take action to decarbonise emissions. They use clean or low carbon fuels, such as hydrogen, to generate power electrochemically without releasing any harmful emissions or particulates. Fuel cells have proved ideal for heavy duty and high usage applications, such as for trucks and buses, as they provide the range, low weight and rapid fuelling times required by commercial fleet operators.

Through many years of collaborating with automotive customers globally, our fuel cell technology is already powering hundreds of fuel cell commercial vehicles. These have already clocked up more than 6.5 million kilometres of zero emission travel.

The demand for continuous innovation extends beyond automotive. Our fuel cell components also power a range of non-road markets, such as stationary power and materials handling applications.

In for the long haul

Fuel cell technology dates back almost to when JM began. We supplied the platinum when William Grove first demonstrated a fuel cell in 1839. In the 1960s, we supplied the electrocatalysts during the Apollo space missions. We were the first company to commit to a dedicated MEA manufacturing site, which is based in Swindon, UK. More recently, we demonstrated our commitment to supporting global supply chains by opening a new manufacturing facility in Shanghai, China.

Exceptional science has always been at our core; we have many years of experience in fuel cell development, characterisation, catalysis, electrochemistry and process optimisation – critical to developing next generation fuel cells.

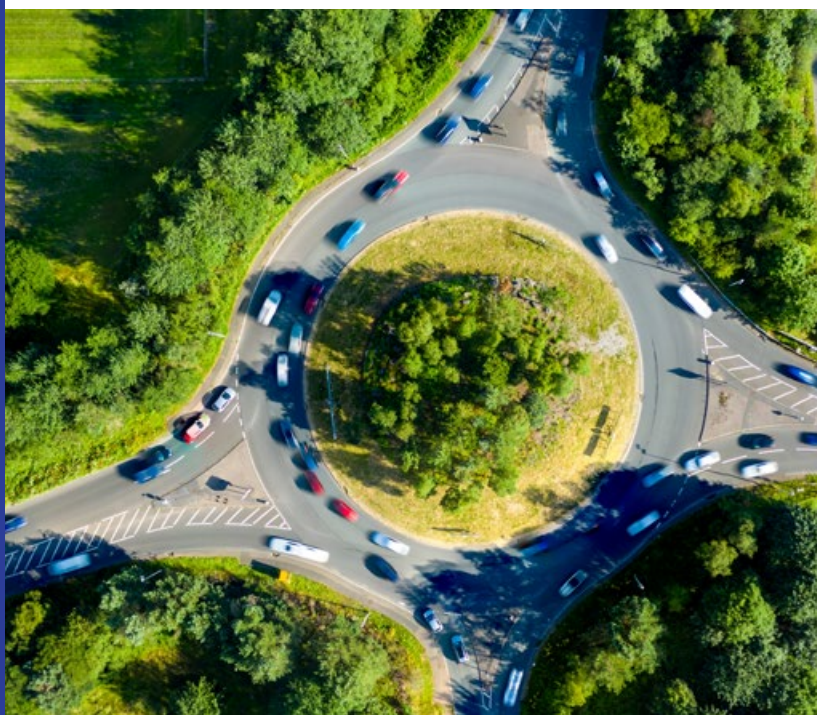
As the technology evolves, so do we. We'll continue to invest in manufacturing capacity and R&D so we can stay ahead of the curve and meet the demands of the future.

A collaborative approach to tailored innovation



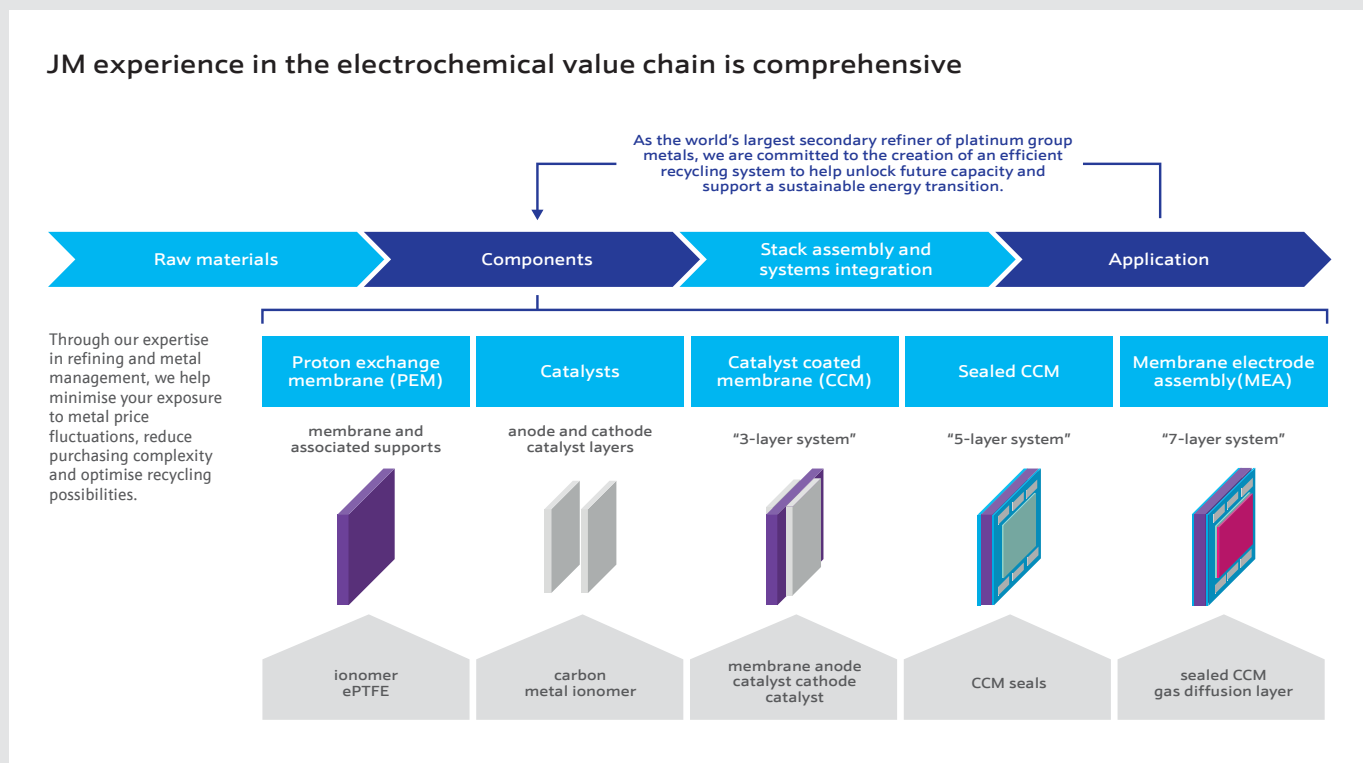
Our success in developing fuel cell solutions is built on strong, collaborative partnerships. Understanding your systems, challenges and vision for sustainable growth is a vital part of the process. It's this close relationship that helps us deliver innovative fuel cell products that are tailored to meet your specific performance, cost, safety and durability requirements.

At JM, our dedicated development teams are on hand to guide and advise customers along the journey towards a production ready fuel cell system. We can also scale products to meet the demand for rapidly growing markets, providing you with competitive products at commercial scale.



Our catalyst coated membranes and membrane electrode assemblies sit at the heart of the fuel cell stack, ensuring exceptional performance and durability.

Proton Exchange Membrane (PEM) fuel cell offer



JM develops and manufactures leading edge membranes in-house for our CCM and MEA products. Our tailored subcomponents deliver optimised and fully compatible products.

Our **HiSPEC™** range of top tier fuel cell catalysts are the product of decades of research and development. JM's expertise and continued investment has resulted in a portfolio of high performing catalysts.

Because every fuel cell system is unique, providing flexible and tailored 3-layer (CCM) solutions is vital to success. We supply our advanced materials in roll format, making it suitable for direct integration into your existing manufacturing processes.

Whether you require a fully unitised MEA (7-layer with GDL attached) or a 5-layer MEA (sealed MEA without GDL attached), we'll find a solution that works for you. Picking from our extensive array of subcomponents, developed with specific applications in mind, we're confident we can help you get the best out of your fuel cell system.

matthey.com/fuel-cells

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For further information on Johnson Matthey, please contact your local sales representative or visit our website.
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