

# News Release

For release: 15 April 2021

## Johnson Matthey part of new European consortium to develop advanced fuel cell technology for heavy duty trucks

- European supported project "IMMORTAL" launched to develop advanced fuel cell technology for heavy duty trucks with the goal of decarbonising freight transport.
- IMMORTAL is a €3.8 million, three year project supported by the European Fuel Cells and Hydrogen Joint Undertaking (FCH 2 JU), which brings together a major consortium of industry leaders and academic/research organisations coordinated by France's CNRS, and includes Johnson Matthey, Bosch, FPT Industrial and AVL.
- IMMORTAL will develop new materials for world leading fuel cell components specific to heavy-duty truck applications that deliver tailored performance and a step change in long term durability, marking a major milestone in the adoption of fuel cell technology for heavy duty trucks.

Johnson Matthey (JM), a global leader in sustainable technologies, has joined a major new European consortium developing higher performance fuel cell components for heavy duty trucks with a predicted lifetime of at least 30,000 hours lifespan.

The project will deliver optimised management of the fuel cell powertrain with high performance and durability as critical outcomes. The industrial and academic partners will collaborate to bring forward materials and components that have shown considerable promise in recent European FCH 2 JU projects. The four large industrial partners of IMMORTAL are major stakeholders in Europe's fuel cell supply, OEM and end user chain, from MEA (Johnson Matthey) to stack (Bosch, AVL), and from stack and system (Bosch, FPT Industrial) to the pioneering use of the fuel cell powertrains in heavy duty long haulage trucks (FPT Industrial).

JM, whose fuel cells business develops and manufactures fuel cell electrocatalysts, electrodes, membranes, and membrane electrode assemblies, will work on electrocatalyst and membrane components, and integrate them in catalyst coated membranes with catalyst layers tailored for enhanced performance and heavy duty operation lifetime. Bosch, one of

the world's largest automotive suppliers, and developer and manufacturer of fuel cell systems, will develop cell and stack testing protocols to reflect realistic use in the field, as well as accelerated stress test protocols, and apply them to large size MEAs and short stacks. FPT Industrial, the powertrain brand of CNH Industrial group, one of the world's largest manufacturers of powertrains for commercial vehicles and leaders in the transition to electrification, will provide the industry system requirements and analysis leading to estimation of the IMMORTAL stack cost.

A second stack platform will be provided by AVL, the world's largest privately owned and independent company for the development of powertrain systems. CNRS Montpellier will lead the project and work on developing novel membrane reinforcement and reinforced membranes and electrocatalysts. IMTEK, a research group at the University of Freiburg, will focus on understanding degradation mechanisms using chemical and structural techniques, and Pretexo will provide project management and communication support.

Jo Godden, Managing Director of Johnson Matthey's Fuel Cells business, said: "Developing a robust fuel cell powertrain solution to decarbonise freight transportation will be critical to achieving net zero goals around the world. JM is proud to be a part of project IMMORTAL to leverage our decades of fuel cell experience to benefit all parties."

Bart Biebuyck, Executive Director of the Fuel Cells and Hydrogen Joint Undertaking stated: "With the ambitious target of cutting its transport emission by 90% by 2050, we need to ensure that EU companies remain ahead of the game in the heavy-duty sector. Projects like IMMORTAL are absolutely essential in driving down the costs of components and enhancing the competitiveness of hydrogen fuel cells powered trucks, a sector posed to grow exponentially in the next decade."

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### **About Johnson Matthey**

Johnson Matthey is a global leader in science that enables a cleaner and healthier world. With over 200 years of sustained commitment to innovation and technological breakthroughs, we improve the performance, function and safety of our customers' products. Our science has a global impact in areas such as low emission transport, pharmaceuticals, chemical processing and making the most efficient use of the planet's natural resources. Today more than 15,000

Johnson Matthey professionals collaborate with our network of customers and partners to make a real difference to the world around us.

## **Fuel cells**

JM's fuel cell technology has moved the industry forward for over two decades, providing solutions for some of the world's most established fuel cell players and automotive OEMs. We are continually developing the next generation of the technologies that are key to driving the performance of a fuel cell, including membrane electrode assemblies, catalyst coated membranes and fuel cell catalysts.

For more information, visit [www.matthey.com](http://www.matthey.com).

## **About the Fuel Cells and Hydrogen Joint Undertaking**

This project receives funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No 101006641. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme, Hydrogen Europe and Hydrogen Europe Research.



**FUEL CELLS AND HYDROGEN**  
JOINT UNDERTAKING

## **Further information on the project partners:**

- Johnson Matthey: [www.matthey.com](http://www.matthey.com)
- Robert Bosch GmbH: [www.bosch.com](http://www.bosch.com)
- FPT Industrial: [www.fptindustrial.com](http://www.fptindustrial.com)
- AVL List GmbH: [www.avl.com](http://www.avl.com)
- CNRS Montpellier: [www.aime.icgm.fr](http://www.aime.icgm.fr)
- University of Freiburg – IMTEK: [www.imtek.de](http://www.imtek.de)
- Pretexo: [www.pretexo.com](http://www.pretexo.com)

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