

# JOULE – PEM PEM Fuel Cell Test Stand for Low Carbon Technologies

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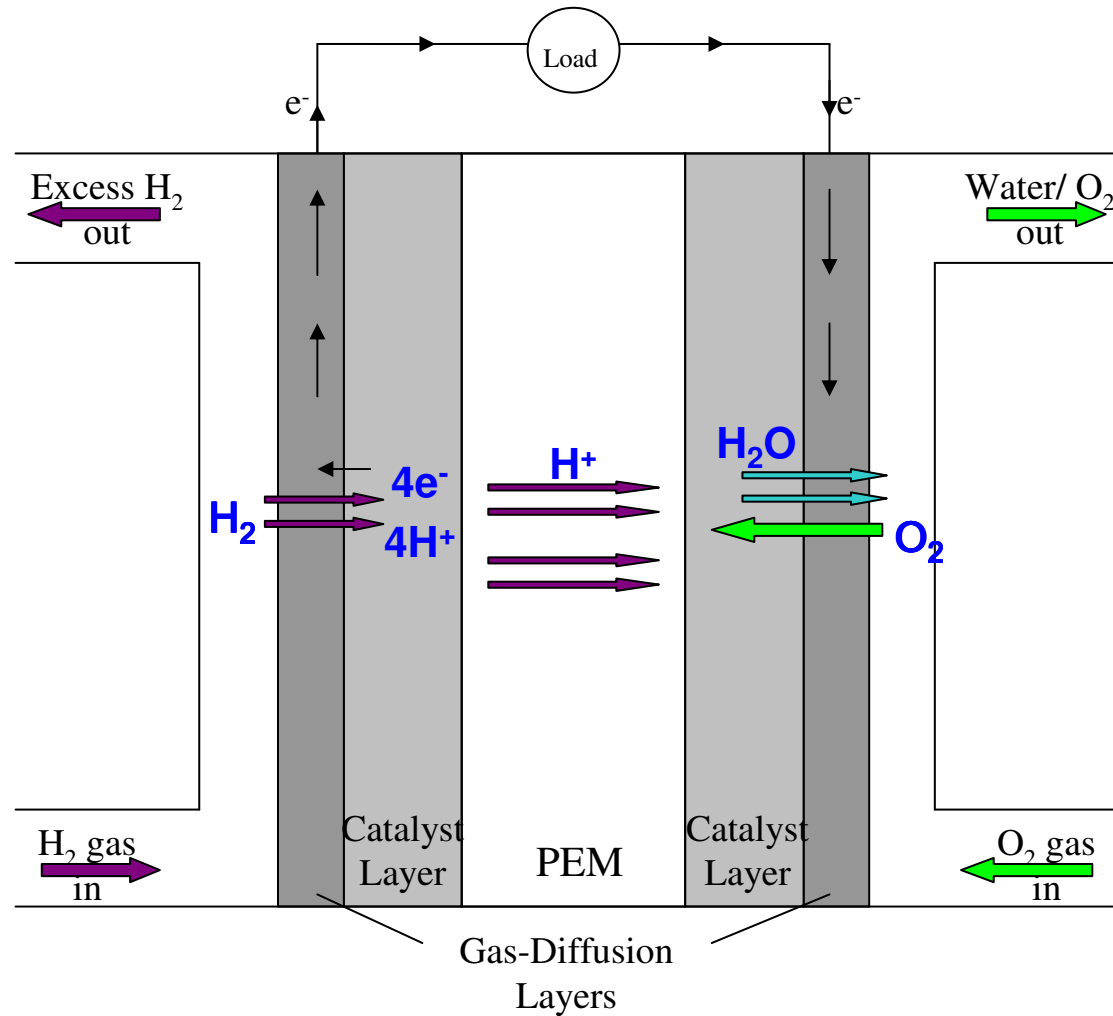
Ted Roberts, University of Manchester,

1<sup>st</sup> Jan 07 to 31<sup>st</sup> May 08

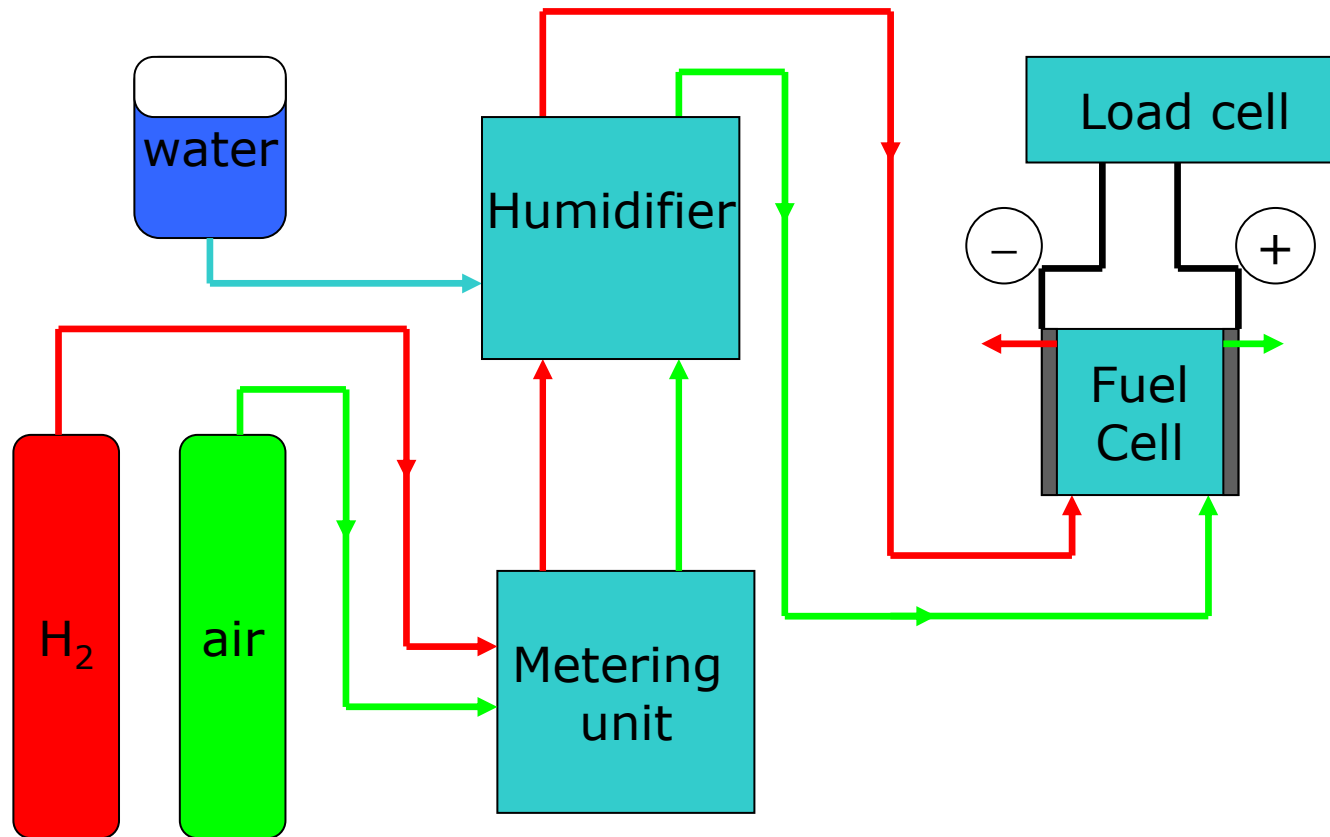
£41k Joule Funding, £50k equipment donated by INEOS

January 2008

# PEM fuel cell



# PEM Fuel Cell Test Stand



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# Project Objectives

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- To commission Lynntech PEM fuel cell system donated by INEOS Technologies Ltd.
- To evaluate the performance of gas metering, humidifiers and load cell.
- To design, construct and commission gas metering and humidification systems.
- To design construct and commission single fuel cell and fuel cell stack systems.
- To use the developed fuel cell test stand for MTH fuel and materials projects.



# Project Status and achievements to date

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- Lynntech system commissioned and evaluated.
  - Humidifiers do not perform required function.
  - Gas metering has limited range and need recalibrating.
  - Load cells functioning well.
- New gas metering and humidification system specified and purchased.
- Flexible fuel cell design designed and fabricated.
- Membrane electrode assemblies prepared for testing.

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# Key Outcomes benefiting the North West Region

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- The group in Manchester aims to become established as a centre of excellence in fuel cell science and engineering.
- Capabilities of the fuels group has been broadened from DMFC (portable electronic applications) to include PEMFC (transport applications).
- Unique range of fuel cell testing facilities established in Manchester.
- Links established with NW, UK and EU fuel cell companies.
- Significant potential for University/industry collaboration and technology transfer.

## For more information

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