

Dr Waldemar Bujalski

'Hydrogen is an emission free energy vector that has incredible potential for a whole range of uses. We are working to develop fuel cells that are effective, robust and cheap to produce in order to attract both the investors and potential users. The fuel cell vehicles on campus clearly show that this technology can work if the infrastructure and manufacturing process are developed alongside and the results enable us to identify the best way forward for wide implementation of the technologies.'



'In twenty years I would hope hydrogen fuel cell technology will be routinely used to meet ones individual electric power and heating needs, transport requirements using hybrid cars (electric with hydrogen fuel cell as range extender) and to power majority of the electric and electronic devices we need in order to sustain and to enhance the expected quality of life without wrecking the planet limited resources.'

Dr Waldemar Bujalski is a key part of the University's outstanding Birmingham Fuel Cells Group, which is working on finding a range of practical applications for hydrogen as an energy vector.

Over the years Waldemar has used his expertise as a chemical engineer in the field of fluid mixing which he applied to a wide range of applications aimed at improving mass and heat transfer in stirred reactors. His work led to optimisation, modifications and improvements of various processes and products ranging from antibiotics production (increased yield), more rapid and uniform germination of vegetable seeds (leading to industrial scale, commercial process) and development of new cleaning technology for production of molten aluminium in furnaces (eliminating the use of environmentally harmful chlorine).

However, Waldemar's current work focuses primarily on fuel cells, which are capable of converting various fuels into electricity and heat, and in case of using hydrogen, producing only water as the waste product. He is leading 'Hydrogen Fuel Cell Applications and Modelling Research Group' within Fuel Cell Group activities at the School of Chemical Engineering and he is particularly interested in developing the science needed to run novel high temperature fuel cell reactors (700-1000deg C) such as Solid Oxide Fuel Cells (SOFC).



<http://www.adobe.com/go/getflashplayer>

Waldemar has been deeply involved in the Birmingham Fuel Cells team activities and research in the use of hydrogen fuel cell technologies in a wide range of everyday applications including hydrogen fuel cell vehicles and Combined Heat and Power (CHP) for domestic use aiming at better understanding of how these technologies can be further improved for their wider acceptance and implementation.

Research in Energy and the Hydrogen field has been significantly boosted recently via Science City arrangements with Warwick University based on Advantage West Midlands capital funding resulting in £3M investment for the University of Birmingham Hydrogen and Fuel Group.