

<b>DSM Science &amp; Technology Awards (NORTH) 2008</b>	
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Stimulated by the depletion of fossil fuels and the threat of global warming, society is widely considering renewably produced hydrogen as an alternative clean fuel for transportation. In theory, large amounts of renewable hydrogen can be produced from organic pollutants in wastewaters using fermentation technology. In practice, however, fermentation suffers from low conversion yields (~15%) and is not applicable to most wastewaters. During his PhD work, René Rozendal developed a revolutionary new technology for hydrogen production from wastewaters. This technology, referred to as biocatalyzed electrolysis, solves most problems encountered for fermentation by using electrochemically active bacteria and slightly helping these bacteria by applying a voltage. This innovative design makes a much wider variety of wastewaters suitable for hydrogen production and much higher conversion yields can be achieved (>90%). Therefore, biocatalyzed electrolysis can be regarded as a breakthrough technology for hydrogen production.