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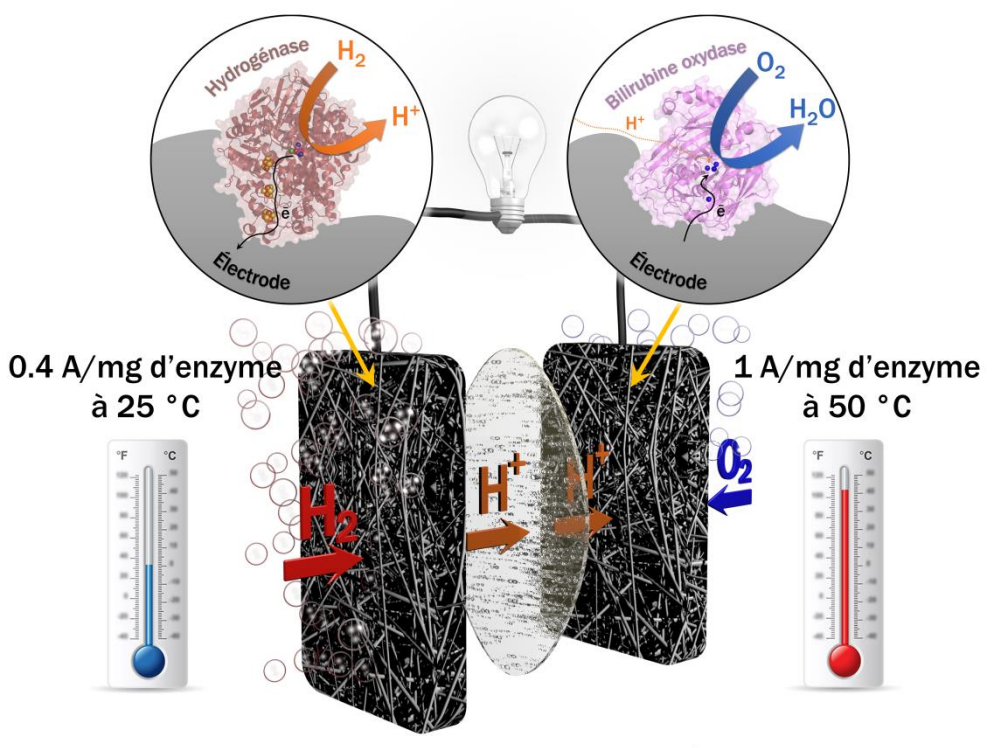
Electricity production: when enzymes rival platinum

Making a biocell that is as effective as a platinum fuel cell: that's the feat that researchers in the Laboratoire de Bioénergétique et Ingénierie des Protéines (CNRS/Aix-Marseille Université) have achieved, in collaboration with the Centre de Recherche Paul Pascal (CNRS/Université de Bordeaux) and the Institut Universitaire des Systèmes Thermiques Industriels (CNRS/Aix-Marseille Université). Three years after making their first prototype biocell, the researchers have just reached a new milestone and increased its performance and stability. This biocell could, in the long run, offer an alternative to fuel cells that require rare and costly metals, such as platinum. Their work was published in *Energy & Environmental Science* on August 17, 2017.


Hydrogénase
H_2
H^+
ē
Électrode
Bilirubine oxydase
O_2
H_2O
H^+
ē
Électrode
0.4 A/mg d'enzyme
à 25 °C
1 A/mg d'enzyme
à 50 °C
°F
°C
H_2
H^+
H^+
O_2
°F
°C
Tension de circuit ouvert > 1 V

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Reference

Impact of Substrate Diffusion and Enzyme Distribution in 3D-Porous Electrodes: a combined electrochemical and modelling study of a thermostable H_2/O_2 Enzymatic Fuel Cell,

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