



2022 London, United Kingdom **Renewable Energies**

Combustible cells are zero-emission systems that use an electrochemical process to obtain electricity and heat from the reaction of hydrogen and oxygen, having water as a waste product. Various fuel cell technologies have been developed to date, and brazed heat exchangers have a variety of uses here. All are linked to heating or cooling cycles and share a common resistance to extremely high temperatures and corrosion. Fuel cells can be of two types. Solid oxide (SOFC), where the exchanger is used for preheating air and recovering the heat generated by the hydrogen oxidation reaction. Or with a proton exchange membrane (PEMFC), to recover heat in heating water that is then fed into the water network. In the transport sector, brazed heat exchangers allow pre-heating of the hydrogen as a power source and recovery of the waste heat from the exhaust fumes. A final important use is for the production of hydrogen from NH_3 ammonia molecules by pre-heating this substance in a special system. In all these cases, the parts involved are the brazed exchangers towards a major step forward on sustainable energy and renewables.