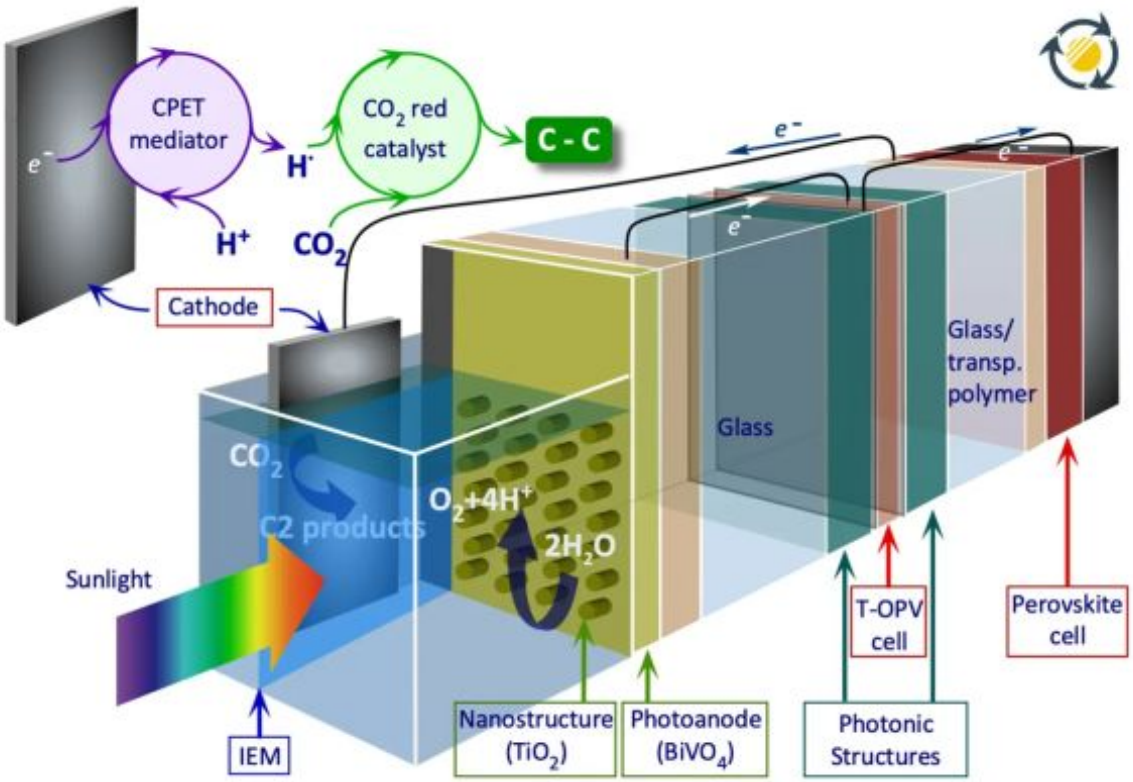

SOREC2 to transform captured CO2 into C2 value-added products

ICFO coordinates new Horizon Europe project for a cleaner planet

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Large amounts of CO2 are being released into the atmosphere every day. This is augmenting the greenhouse effect, which consequently is increasing global warming. There are currently many innovative initiatives that aim to tackle this major challenge by finding ways to reduce CO2 in the atmosphere and also tackle the world's energy needs.?

SOREC2, a new Horizon Europe project coordinated by **UPC Professor at ICFO Dr Jordi Martorell**, seeks to develop a new technology solely powered by direct sunlight to conver CO2 into C2 products, such as ethanol and ethylene, liquid fuels that can store chemical energy in a safe manner.

The project's international consortium brings together the expertise of 4 research institutions including **ICFO (coordinator)**, the Autonomous University of Barcelona (UAB), the University of Ferrara (UNIFE), and California Institute of Technology (Caltech) as well as 1 social sciences and technology assessment partner, The Danish Board of Technology (DBT), and 3 industrial partners, VITSOLC (an ICFO spin-off company), SAULE Technologies, and Gemmate

Technologies. The eight consortium members will work together over the next three years t enable the transformation of scientific research efforts into a technology with societal an economic impacts

SOREC2's conversion approach relies on the development of a hybrid catalyst system, whic combines a CO_2 reduction (CO_2R) catalyst and a concerted proton-electron transfer (CPET) molecular mediator. To power this conversion system, SOREC2 will develop a sunlight multilayered harvesting system composed of three photovoltaic elements: a n-type semiconductor, a T-OPV class organic photovoltaic cell, and a perovskite solar cell. Perovskite holds a promising future for the creation of flexible and texturized solar panels, is made of fairly lightweight materials, is economical to produce and as efficient as silicon based solar cells.

SOREC2 Kick-off meeting