



Università
Ca' Foscari
Venezia

**Dipartimento
di Scienze Molecolari
e Nanosistemi**

IL DIPARTIMENTO DI SCIENZE MOLECOLARI E NANOSISTEMI
ORGANIZZA LA CONFERENZA :

Composite nanostructures for high-efficiency Sunlight conversion

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Conference Room - Campus Scientifico, Via Torino

Composite ceramic nanostructures can be efficiently applied for Sunlight conversion. In most of the applied systems, like excitonic solar cells and photoelectrochemical cells to produce solar fuels, nanomaterials can play a critical role in boosting photoconversion efficiency by ameliorating the processes of charge photogeneration, exciton dissociation and charge transport. Several strategies can be pursued, including broadening of light absorbance to reduce solar light losses, fastening exciton dissociation and charge injection from the photoactive medium to the charge transporting materials, reducing charge recombination during charge transport and collection at the electrodes. In this lecture, a few examples of application of nanocomposites will be thoroughly discussed, [1-3] highlighting the role of interface engineering to improve the efficiency of energy conversion from Sunlight to electric power and/or chemical fuels.

[1] Y. Zhou et al. *Adv. En. Mater.* 6, 1501913, 2016

[2] Y. Zhou et al. *Adv. Energy Mater.* 7, 1602728, 2017

[3] X. Tong et al. *Nano Energy* 31, 441–449, 2017

L' organizzatore
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