UNIVERSITY OF Southampton

Photocatalytic Cross-Dehydrogenative Coupling

with MeAlPOs and MOFs

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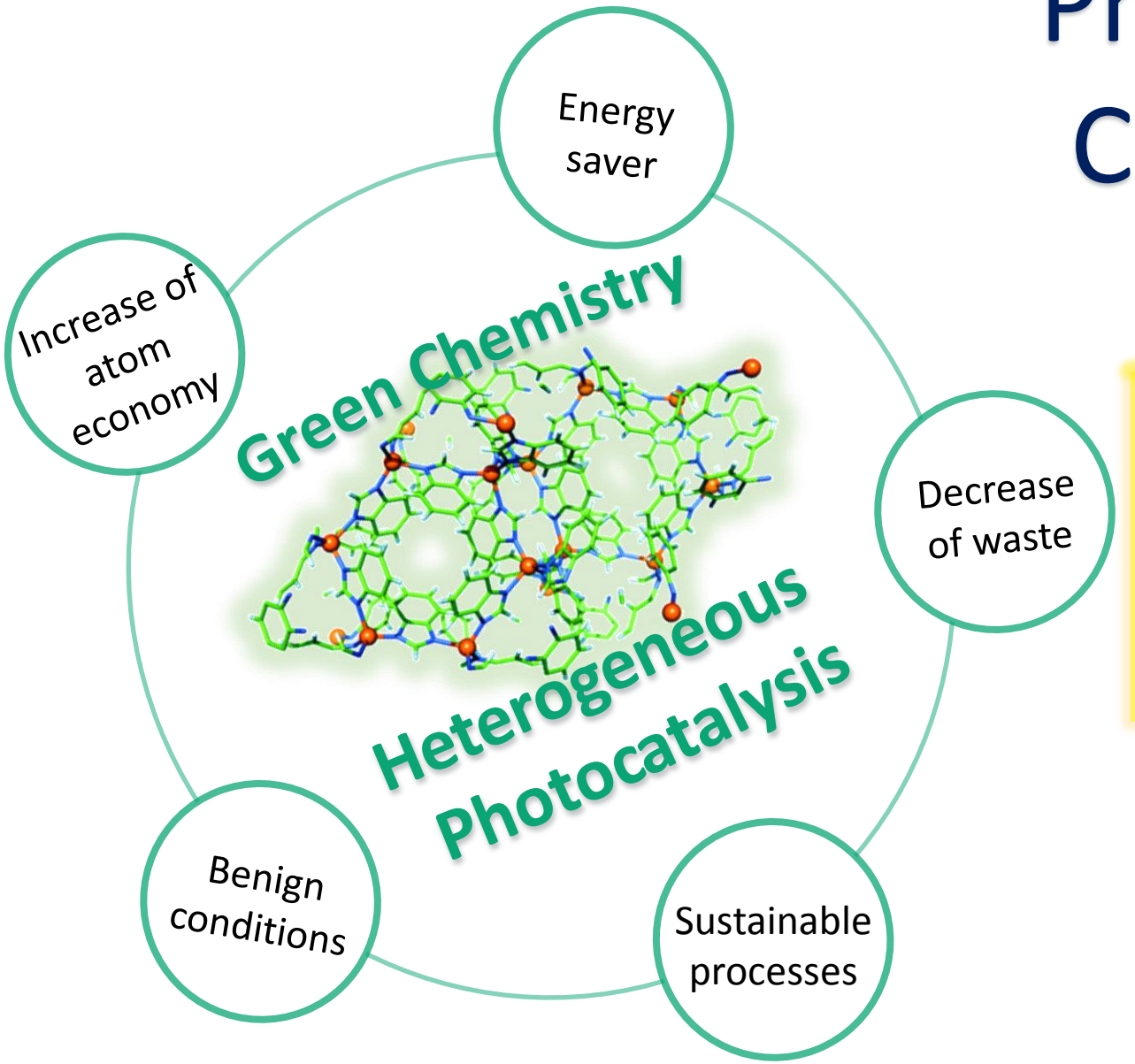
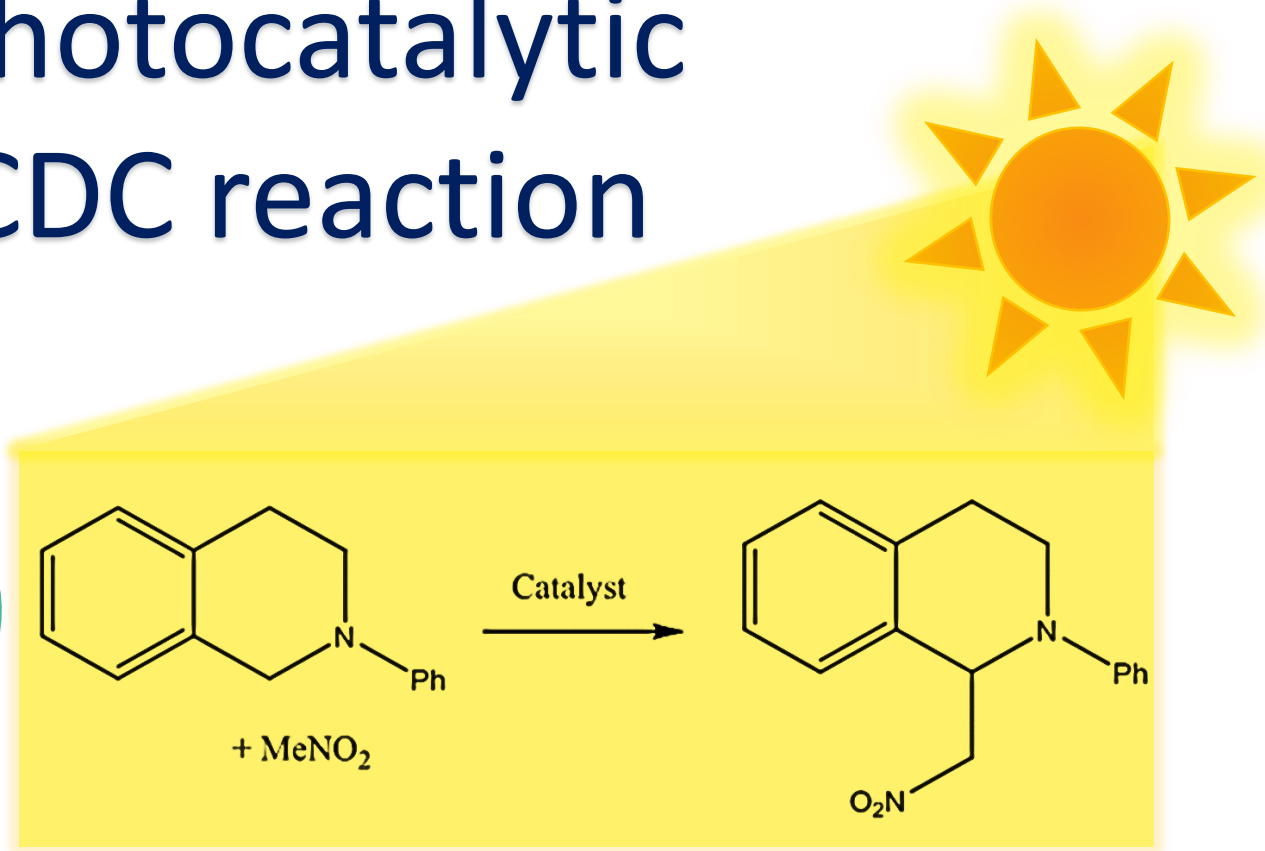
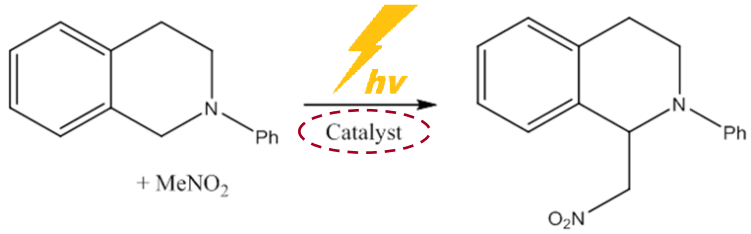
Photocatalytic CDC reaction

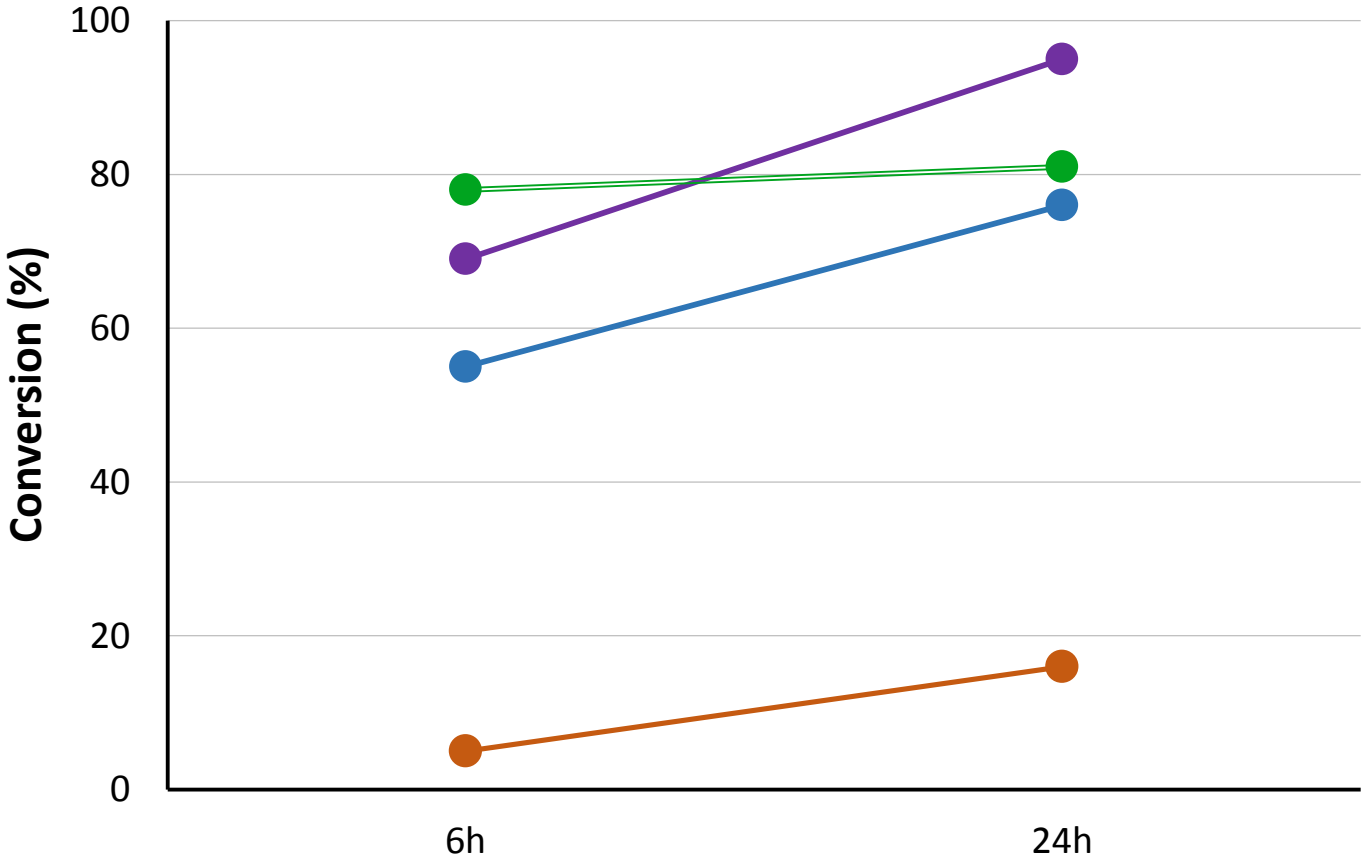




- Green synthesis of organic molecules
- Utilization of solar energy

Photocatalytic activity





CoZIF-9
Co(II)

Cu(0.04)AlPO-5
Cu(II)

HKUST-1
Cu(II)

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MATERIAL CHARACTERIZATION

- ✓ XRD
- ✓ SEM
- ✓ BET
- ✓ UV-VIS

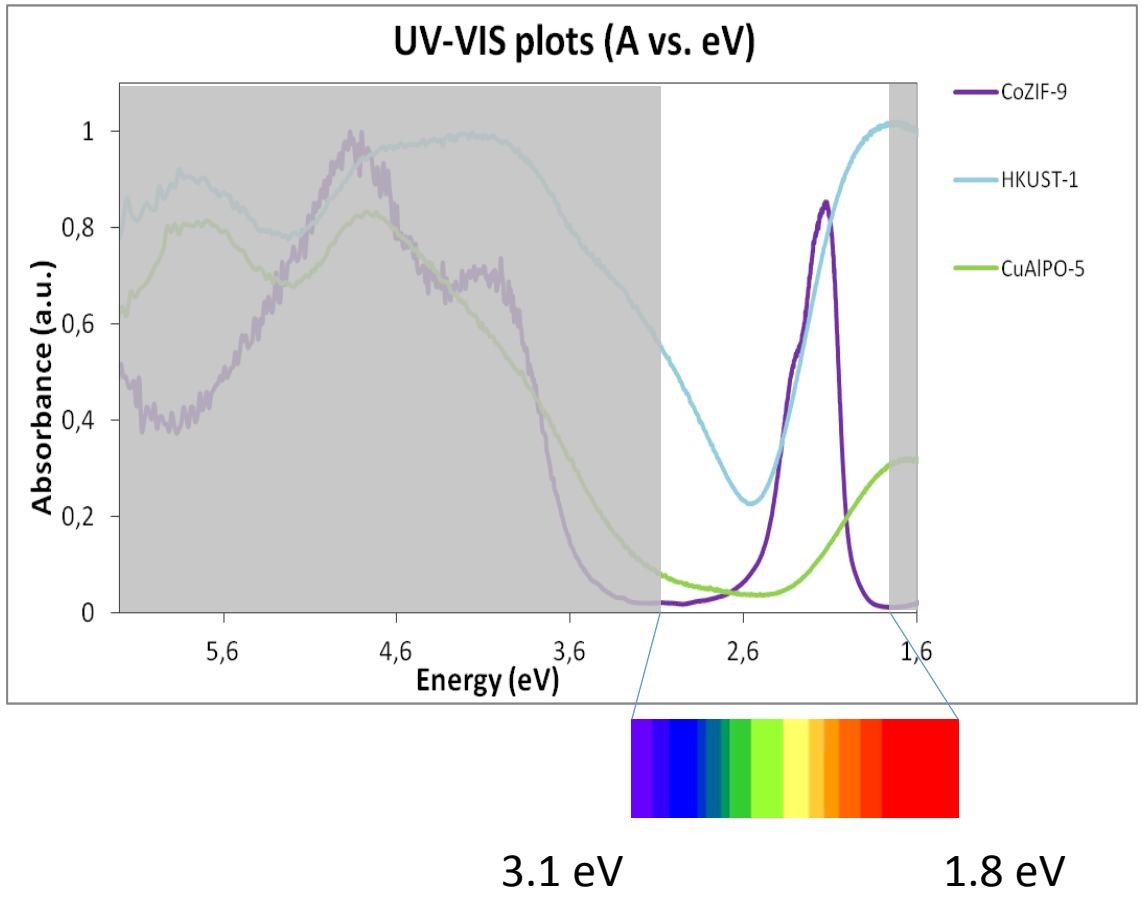
HETEROGENEITY

- ✓ Recyclability
- ✓ Reusability

ENVIRONMENTAL AFFINITY

- ✓ Friendly synthesis
- ✓ Low hazard
- ✓ Abundance

Conclusions



☑ Photoresponsive solid catalysts

☑ High conversion

☑ Chemistry with no waste

☑ Use of inexhaustible energy source

? ☐ Co-production of hydrogen or water

Dalton Trans. 2015, 44, 4498-4503

(ZIF-9 applied for CO_2 capture)

Nanoscale, 2014, 6, 9930-9934

(ZIF-9 applied for water oxidation)

? ☐ Diverse applications (potential use in photocatalytic water splitting)

Thank you!