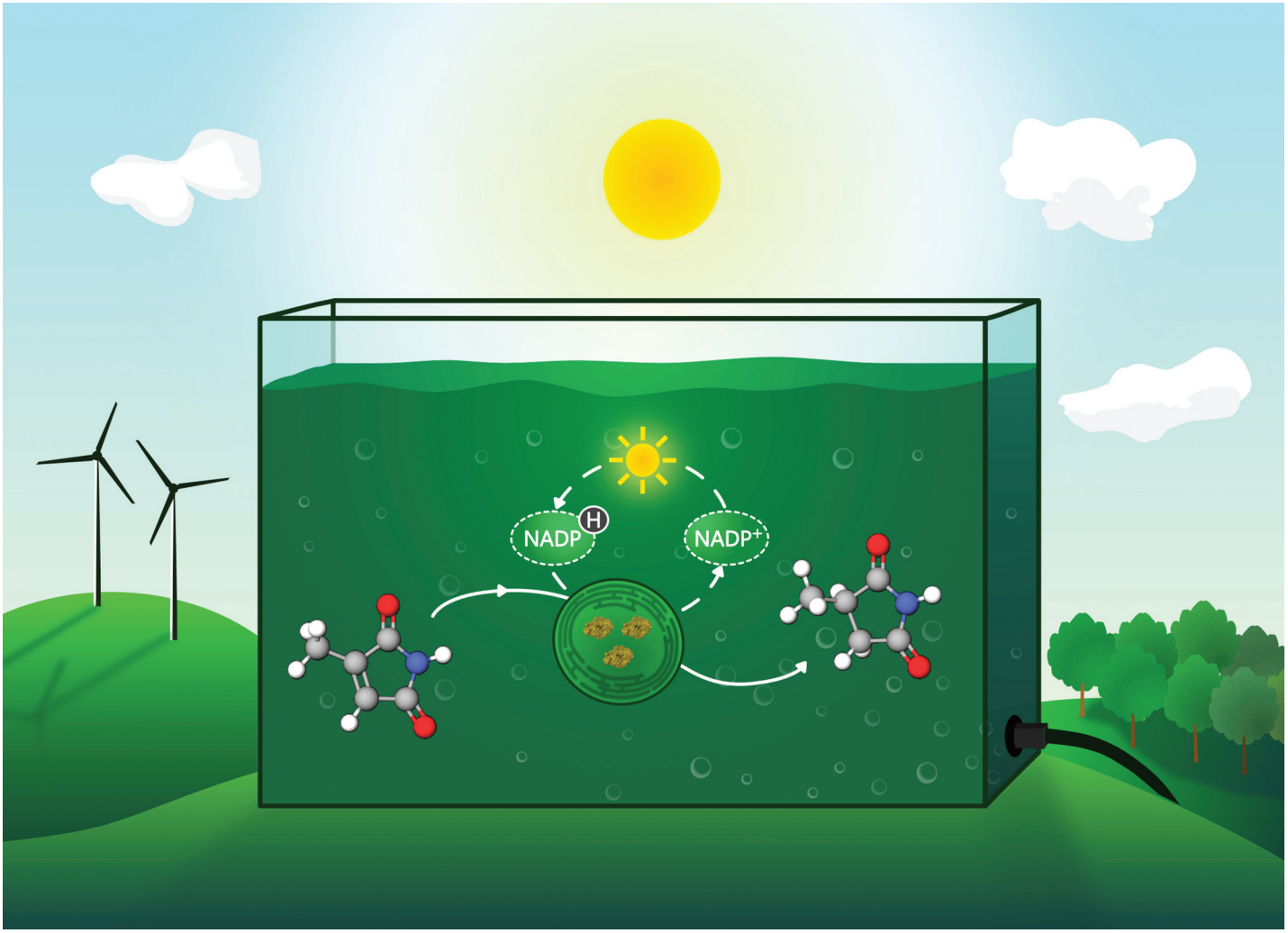


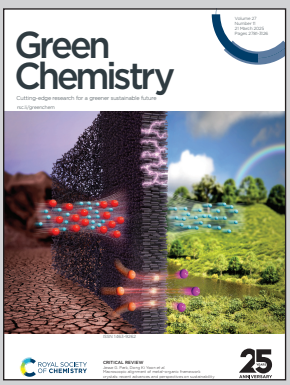
Showcasing research from Professor Kourist's laboratory, Institute of Molecular Biotechnology Graz University of Technology, Graz, Austria

Towards high atom economy in whole-cell redox biocatalysis: up-scaling light-driven cyanobacterial ene-reductions in a flat panel photobioreactor

In recombinant cyanobacteria, efficient NADPH regeneration *via* photosynthesis enables ene-reduction but faces scalability challenges due to light limitations. A flat-panel photobioreactor facilitates enhanced illumination even at higher cell densities enabling the conversion of 50 mM substrate within 8 hours. Further investigation into the sustainability of cyanobacterial biotransformations identified cultivation as the primary target for improvement. The bioreactor is depicted in a landscape featuring wind turbines, trees, and the sun, emphasizing the synergy between sustainability and photobiocatalysis.

Image reproduced by permission of Hanna C. Grimm from *Green Chem.*, 2025, **27**, 2907.

As featured in:



See Hanna C. Grimm, Robert Kourist *et al.*, *Green Chem.*, 2025, **27**, 2907.

ROYAL SOCIETY OF CHEMISTRY

rsc.li/greenchem

Registered charity number: 207890