Structure/function studies of biomass degrading enzymes @ Molecular Sciences, SLU

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Lignocellulosic biomass is the most abundant renewable organic carbon source on Earth for transition from fossil-based to sustainable production of fuels and chemicals.[1]

We study structures by X-ray crystallography (Figure 1) and function of key biomass-degrading enzymes, to find out how to best harness Nature's own tools for environmental-friendly utilization of biomass from agriculture and forestry.

[1] C. M. Payne et al. *Chem. Rev.* **2015**, *115*, 1308-1448.

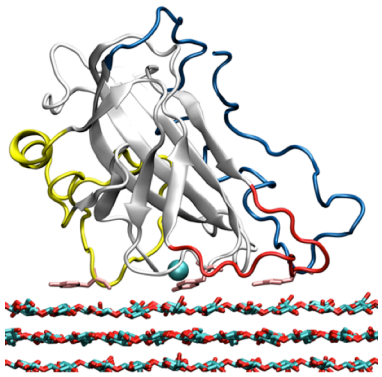

Figure 1. Lytic polysaccharide monooxygenase (LPMO) binds Cu^{2+} at a flat surface and uses O_2 and reductants to cleave cellulose by an oxidative mechanism.