Circular biomanufacturing based on solar energy and use as CO\textsubscript{2} as the sole carbon source

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Nearly all energy on our Earth comes from the Sun. No wonder, that the large scale sustainable production system chosen by Nature is photosynthesis, a process driven by solar light and enabling plants and algae to produce foods and materials with carbon dioxide as the sole carbon source. Cytochrome P450s are key players present in all kingdoms and add an additional layer of uniqueness to the production system. We should adhere to and be guided by Nature in our efforts to develop environmentally benign green production systems for the future. Examples of basic and applied research along these lines at our lab will be presented in the lecture to set the stage for the great presentations at the International Symposium on Cytochrome P450 Biodiversity and Biotechnology here in Torino.