
– Bio-inspired dye design for light harvesting applications

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When designing dyes and materials for light-harvesting applications, Nature can inspire us with its many unique evolutionary architectures. Particularly, photosystem II (PSII) which possesses molecular machinery that can effectively create electronic or chemical potential, operating under a dynamic range of light conditions. Using this system as our inspiration, we design and synthesize dyes that try to mimic PSII's unique structure and behaviour.

Specifically, we are targeting dyes for dye-sensitized solar cell (DSSC) applications. As a next-generation photovoltaic technology the DSSC represents a unique manifold to study our novel dye candidates for a myriad of potential applications. This talk outlines some of the work being conducted in our lab where we focus on designing dyes (primarily organic) and devices using supramolecular strategies and electrochemical insights that attempt to mimic some of the features and behaviour exhibited by Nature.

Individual appointments with Prof. Koivisto can be arranged via Prof. Dr. Birgit Esser (besser@oc.uni-freiburg.de).

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