

Project: Relationship between growth rate and photoinhibition in green algae

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Period of STMS (June 3-27, 2014):

Host institution (address):

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Mentor(s) (name and contact data):

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Aims & subject of work (480 characters, no spaces; Calibri 12):

We have proposed to investigate photoinhibition in three green algae having differentially growth rate because photoinhibition is one of the main problem in limiting lifetime of the biodevices/. The proposed algae were : *Chlorella minutissima* (a slow growing green alga), *Chlorococcum novae-angliae* (intermediate growth rate), and *Neochloris oleabundans* (fast grower).

Argumentation of necessity of STSM (100 characters, no spaces; Calibri 12):

There was a need to investigate mechanistic aspects of photoinhibition and production of singlet oxygen, in a range of photosynthetic organisms with varying photochemical activities in order to understand how light induced phenomena can be efficiently utilized in hybrid PSII based biosensors/biochips.

Workplan/timeschedule followed (4 bullets max., Calibri 12):

- Investigated suitable range of PPFD for the proposed green algae.
- Performed photoinhibition experiments by measuring O₂ evolution maximum quantum efficiency of PSII photochemistry (Fv/Fm) [See Figure).
- Measured singlet oxygen via histidine mediated O₂ uptake methods.

Main results and outcome (conclusions):

Photoinhibition can be different for PSII originated from differentially grown algae. This experiment also demonstrates that we can't ignore impacts of photoinhibition for fabrication of PSII based biosensors/biochips.

