Dynamic changes in pigment composition of green alga *Parachlorella* sp. in autotrophic, heterotrophic cultivation conditions and their conversions.

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Green microalgae are important source of various biotechnologically high-value chemicals including pigments. These compounds have wide use in food, nutrition and pharmaceutical industry as a natural colorants or significant components in antioxidant network. In addition to main photosynthetic pigments – chlorophylls, microalgae also produce carotenoids including α and β – carotens and xanthophylls: lutein, zeaxantin, violaxanthin and neoxanthin. Naturally, microalgae grow under autotrophic conditions; however, some of them as for instance *Parachlorella* sp. are capable of heterotrophic growth (on organic substrate without light). The pigment composition changes dramatically in response to the intensity and the quality of light. Within proposed project we will study the dynamics of pigment production and their relative content in strain of lutein rich green alga *Parachlorella* sp. Student will be trained in basic algal cultivation methods in autotrophic and heterotrophic mode, extraction of pigments and their quantitative analysis using high performance-liquid chromatography (HPLC).

Requirements: preferably bachelor or starting master student. Knowledge of Basic English (The results will be presented in English at the end of the project)