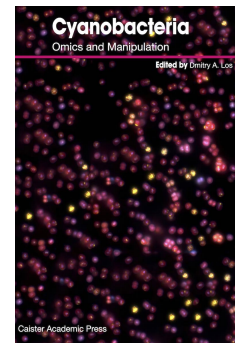


# Cyanobacteria

## Omics and Manipulation



**Edited by: Dmitry A. Los**

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In this era of the 'Green Planet', cyanobacteria are ideally placed for exploitation as microbial cell factories, both for carbon capture and storage and for the sustainable production of secondary metabolites and biofuels. The application of omics technologies to cyanobacterial research has yielded a wealth of new information. However for today's busy researchers, trawling through the literature to stay abreast of current developments can be extremely time-consuming. By compiling and summarising the most important topics on cyanobacterial omics and manipulation, the authors of this book provide the reader with a timely overview of the field.

Topics covered: The cyanobacterial core-genome with a focus on secondary metabolites; cyanobacterial evolution; genomics of NRPS/PKS biosynthetic gene clusters; RNA-seq based transcriptomic analysis of single cyanobacterial cells; transcriptomics of the responses: genes, sensors, and molecular triggers; transcriptomic and proteomic analysis of diurnal cycles in nitrogen-fixing cyanobacteria; proteomic analysis of post translational modifications; metabolic engineering and systems biology for free fatty acid production; isoprene production; ethanol production: impact of omics of the model organism *Synechocystis* on yield enhancement; engineering of alkane production; photoautotrophic polyhydroxyalkanoate production.

This cutting-edge text will serve as a valuable resource for all those working in this field and is recommended for all microbiology libraries.

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**Chapter 2.** Genome-wide Analysis of Cyanobacterial Evolution: The Example of *Synechococcus* (*Petr Dvorák*)

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