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Sommario/riassunto	As the world struggles to reduce its dependence on fossil fuels and curb greenhouse gas emissions, industrial biotechnology is also 'going green.' Escherichia coli has long been used as a model Gram-negative bacterium, not only for fundamental research, but also for industrial applications. Recently, however, cyanobacteria have emerged as candidate chassis for the production of commodity fuels and chemicals, utilizing CO <sub>2</sub> and sunlight as the main nutrient requirements. In addition to their potential for reducing greenhouse gas emissions and lowering production costs, cyanobacteria have naturally efficient pathways for the production metabolites such as carotenoids, which are of importance in the nutraceutical industry. The unique metabolic and regulatory pathways present in cyanobacteria present new challenges for metabolic engineers and synthetic biologists. Moreover, their requirement for light and the dynamic regulatory mechanisms of the diurnal cycle further complicate the development and application of cyanobacteria for industrial applications. Consequently, significant advancements in cyanobacterial engineering and strain development

are necessary for the development of a 'green E. coli'. This Research Topic will focus on cyanobacteria as organisms of emerging industrial relevance, including research focused on the development of genetic tools for cyanobacteria, the investigation of new cyanobacterial strains, the construction of novel cyanobacterial strains via genetic engineering, the application of 'omics' tools to advance the understanding of engineered cyanobacteria, and the development of computational models for cyanobacterial strain development.

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