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Sommario/riassunto	<p>Exponentially increasing information on biological organisms coupled with increasing computational power in the past decade have broadened the perspective of fundamental biological research, bringing about considerable promise and unprecedented potential for practical applications in biotechnology. As one emergent discipline, synthetic biology aims to design and engineer novel biologically-based parts, devices, and systems, in addition to redesigning existing, natural biological systems. Although previously relegated to demonstration studies, more recent research in synthetic biology has focused on the rational engineering of industrial microorganisms with the potential to address many of society's critical challenges. Within the realm of industrial microbiology, progress in the field of synthetic biology has enabled the development of, for example, new biosynthetic pathways for the production of renewable fuels and chemicals, programmable logic controls to regulate and optimize cell function, and robust microbes for the destruction of harmful environmental contaminants. Some of the exciting examples included producing anti-malarial drug, anti- cancer taxol precursor and various biofuel molecules in E. coli and yeast. In addition, these researches have also greatly enhanced our understanding of the cellular machinery and its regulation in some of the industry important microbes, laying an important foundation for further design and engineering of biological function for even greater application. For these reasons, we present here a collection of articles</p>

from the leading edge of the field of synthetic biology, with a specific focus on the development in industrial microorganisms. It is the intent of this collection to reach a wide audience whose interests and expertise spans from development of novel synthetic biology methodologies and theories (both experimental and computational) to practical applications seeking to address issues facing the world today.
