Andreas Moglich

Title:
Light-regulated Gene Expression for Bacterial Biotechnology

Abstract:
Light-regulated gene expression is one of the most versatile and powerful means for the optogenetic control of cellular state and physiology. Biotechnological applications in bacteria include the tuneable expression of target gene products, metabolic engineering, and the production of spatially anisotropic materials. Against this backdrop, we have developed multiple systems for activating or repressing expression by different colors of light. Not least because certain of these systems act at different stages of gene expression, they can be combined with little interference or cross-talk. More sophisticated and fine-grained process control is thus achieved.