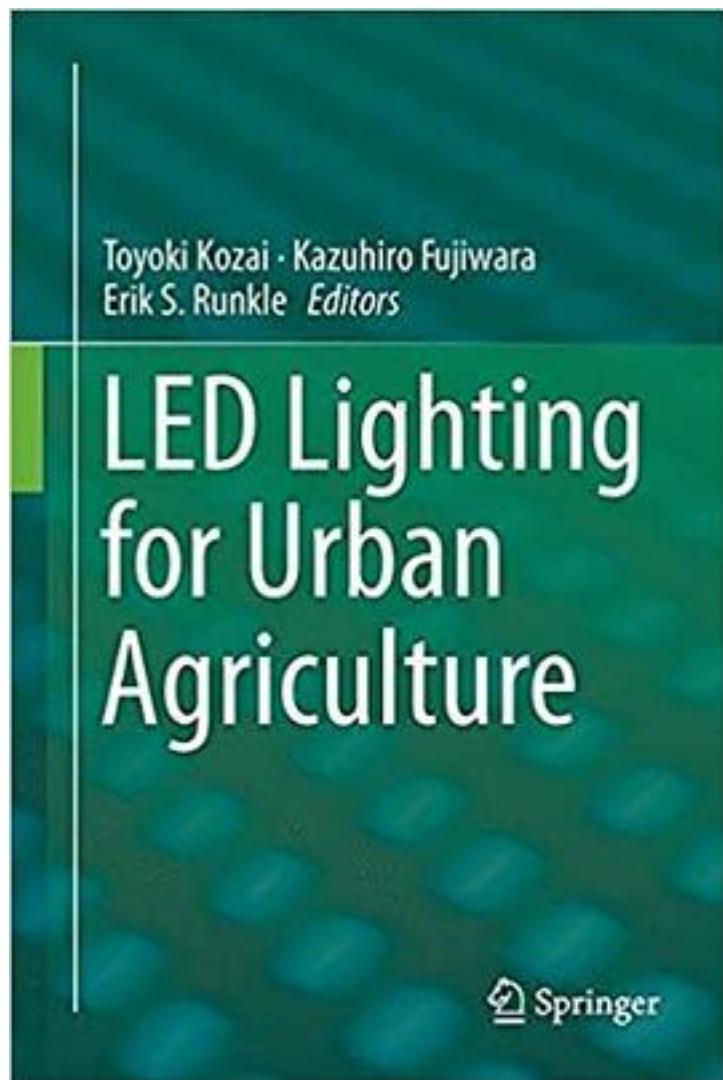


LED Lighting for Urban Agriculture



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This book focuses on light-emitting diode (LED) lighting, mainly for the commercial production of horticultural crops in plant factories and greenhouses with controlled environments, giving special attention to: 1) plant growth and development as affected by the light environment; and 2) business and technological opportunities and challenges with regard to LEDs. The book contains more than 30 chapters grouped into seven parts: 1) overview of controlled-environment agriculture and its significance; 2) the effects of ambient light on plant growth and development; 3) optical and physiological characteristics of plant leaves and canopies; 4) greenhouse crop production with supplemental LED lighting; 5) effects of light quality on plant physiology and morphology; 6) current status of commercial plant factories under LED lighting; and 7) basics of LEDs and LED lighting for plant cultivation.

作者介绍:

Professor Kozai obtained a BS degree in Horticultural Sciences from Chiba University, and Master and Doctoral degrees in Agricultural Engineering from the University of Tokyo. When he started his academic career in 1973 as an agricultural engineer, his work was focused on greenhouse environment control engineering. After establishing his early work on greenhouse light environments, energy saving, ventilation and computer control, his scientific interest extended to in vitro environment control in plant tissue culture, sugar-free media and photoautotrophic micro-propagation, and plant production in closed systems with artificial lighting. His first paper on plant production using LED was published in the early 1990's.

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