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Titolo	Photobiology : The Science of Light and Life // edited by Lars Olof Björn
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2015
ISBN	1-4939-1468-5
Edizione	[3rd ed. 2015.]
Descrizione fisica	1 online resource (453 p.)
Disciplina	570 571.2 571.32 576.8
Soggetti	Botany Plant anatomy Plants - Development Evolution (Biology) Plant physiology Plant Sciences Plant Anatomy/Development Evolutionary Biology Plant Physiology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	The Nature of Light and Its Interaction with Matter -- Principles and Nomenclature for the Quantification of Light -- Generation and Control of Light -- The Measurement of Light -- Light as a Tool for Biologists: Recent Developments -- Terrestrial Daylight -- Underwater Light -- Action Spectroscopy in Biology -- Spectral Tuning in Biology I: Pigments -- Spectral Tuning in Biology II: Structural Color -- Photoactive Proteins -- Molecules and Photochemical Reactions in Biological Light Perception and Regulation -- Photoreceptive Proteins and Their Evolution -- Signaling Crosstalk under the Control of Plant Photoreceptors -- The Diversity of Eye Optics -- The Evolution of Photosynthesis and Its Environmental Impact -- Photosynthetic Light

Harvesting -- How Light Resets Circadian Clocks --  
Photomorphogenesis and Photoperiodism in Plants -- The Light-  
Dependent Magnetic Compass -- Phototoxicity -- Ozone Depletion and  
the Effects of Ultraviolet Radiation -- Vitamin D: Photobiological and  
Ecological Aspects -- The Photobiology of Human Skin -- Light-  
Promoted Infection -- Bioluminescence -- Role of Ultraviolet Radiation  
in the Origin of Life -- Hints for Teaching Experiments and  
Demonstrations -- The Amateur Scientist's Spectrophotometer.

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## Sommario/riassunto

The new edition of this authoritative text provides an interdisciplinary treatise of all aspects of the interactions between light and the living world. It starts with a description of the physics of light, and how to deal with it in experiments and observations. The phenomena described in the rest of the book covers all organisms: how light is used by organisms for obtaining energy for life processes, for gathering information about the environment, and for communicating with others of the same or other species. The book also describes "bad" effects of light in causing disease or contributing to formation of environmental toxins. New techniques used by scientists to investigate life processes using light are also explored in the volume. Written by experts in the field, *Photobiology: The Science of Life and Light*, 3e is a valuable and accessible resource for both advanced undergraduates and established researchers.

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