

1. Record Nr.	UNINA9910298332703321
Titolo	Polarized Light and Polarization Vision in Animal Sciences // edited by Gábor Horváth
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2014
ISBN	3-642-54718-4
Edizione	[2nd ed. 2014.]
Descrizione fisica	1 online resource (652 p.)
Collana	Springer Series in Vision Research, , 2625-2635 ; ; 2
Disciplina	551.5 570 571.1 571.4 573.8 591.5
Soggetti	Physiology Biophysics Atmospheric science Behavioral sciences Neurobiology Animal Physiology Biological and Medical Physics, Biophysics Atmospheric Sciences Behavioral Sciences
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	Part I. Polarization vision in animals and humans -- Part II. Polarized light in nature with implications to animal polarization vision -- Part III. Practical applications of polarization vision and polarization patterns.
Sommario/riassunto	This book covers advances made since the 2004 Springer volume "Polarized Light in Animal Vision" edited by Horvath and Varju, but also provides reviews and synopses of some areas. Part I examines polarization sensitivity across many animal taxa including vertebrates and invertebrates and details both terrestrial and aquatic life. Part II is

devoted to the description of polarized light in nature and explores how the physics of light must be taken into account when understanding how polarized light is detected by the visual system. This includes underwater polarization due to scattering; polarization patterns reflected from freshwater bodies; polarization characteristics of forest canopies; normal and anomalous polarization patterns of the skies; skylight polarization transmitted through Snell's window and both linearly and circularly polarized signals produced by terrestrial and aquatic animals. This Part also examines polarized "light pollution" induced by anthropogenic factors such as reflection off asphalt surfaces, glass panes, car bodies, and other man-made structures that are now known to form ecological traps for polarotactic insects. Part III surveys some of the practical applications of polarization vision including polarization-based traps for biting insects, ground-based polarimetric cloud detectors and an historical examination of the navigational abilities of Viking seafarers using the sky polarization compass. The deterrent qualities of ungulate pelage to polarization-sensitive biting insects is also examined in this section.
