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Nota di contenuto	Aims and scope of this book -- Part I. Chemistry of sex pheromones -- Chapter 1. Chemical divergences in the sex pheromone communication systems in moths -- Chapter 2. Sex pheromone communication system in hawk moths -- Chapter 3. Sex pheromones of mealybugs: Implications for evolution and application -- Chapter 4. Hybrid sex pheromone communication systems in seed beetles -- Chapter 5. Pheromones in longhorn beetles with a special focus on contact pheromones -- Part II. Biosynthesis of sex pheromones -- Chapter 6. A sexy moth model—The molecular basis of sex pheromone biosynthesis in the silkmoth Bombyx mori -- Chapter 7. Molecular bases for the biosynthesis of species-specific sex pheromones in the genus Ostrinia (Lepidoptera: Crambidae) -- Chapter 8. Epoxidases involved in the biosynthesis of type-II sex pheromones -- Part III. Reception of sex

pheromones -- Chapter 9. Molecular mechanisms of sex pheromone reception in moths -- Chapter 10. Evolutionary history of lepidopteran genes associated with sex pheromone recognition -- Chapter 11. Application of olfactory detection systems in sensing technologies -- Part IV. Mechanisms controlling behavior and its application to robotics -- Chapter 12. Brain premotor centers for pheromone orientation behavior -- Chapter 13. Coding and evolution of pheromone preference in moths -- Chapter 13. Coding and evolution of pheromone preference in moths.

Sommario/riassunto

This book provides a complete overview of cutting-edge research on insect sex pheromones and pheromone communication systems. The coverage ranges from the chemistry, biosynthesis, and reception of sex pheromones to the control of odor-source searching behavior, and from molecules to the application of research findings to robotics. The book both summarizes the progress of studies conducted using Bombyx mori and several groups of moths and reviews sex pheromones of some non-lepidopteran insect groups of agricultural importance. Attention is drawn to recent findings on elaborate neural information processing in the brain in male moths and to the importance of olfactory receptors specifically tuned to sex pheromone molecules. Featuring contributions from leading experts on the topic, this book will be a unique and valuable resource for researchers and students in the fields of entomology, chemical ecology, insect physiology and biochemistry, evolution, biomimetics, and bioengineering. In addition to researchers, general insect lovers will find the book fascinating for its descriptions of the marvelous abilities of insects and the underlying mechanisms involved.