

## Smell And Taste Lab Report 31 Answers

Intraspecific communication involves the activation of chemoreceptors and subsequent activation of different central areas that coordinate the responses of the entire organism—ranging from behavioral modification to modulation of hormones release. Animals emit intraspecific chemical signals, often referred to as pheromones, to advertise their presence to members of the same species and to regulate interactions aimed at establishing and regulating social and reproductive bonds. In the last two decades, scientists have developed a greater understanding of the neural processing of these chemical signals. Neurobiology of Chemical Communication explores the role of the chemical senses in mediating intraspecific communication. Providing an up-to-date outline of the most recent advances in the field, it presents data from laboratory and wild species, ranging from invertebrates to vertebrates, from insects to humans. The book examines the structure, anatomy, electrophysiology, and molecular biology of pheromones. It discusses how chemical signals work on different mammalian and non-mammalian species and includes chapters on insects, *Drosophila*, honey bees, amphibians, mice, tigers, and cattle. It also explores the controversial topic of human pheromones. An essential reference for students and researchers in the field of pheromones, this is also an ideal resource for those working on behavioral phenotyping of animal models and persons interested in the biology/ecology of wild and domestic species.

A guide to the techniques and analysis of clinical data. Each of the seventeen sections begins with a drawing and biographical sketch of a seminal contributor to the discipline. After an introduction and historical survey of clinical methods, the next fifteen sections are organized by body system. Each contains clinical data items from the history, physical examination, and laboratory investigations that are generally included in a comprehensive patient evaluation.

Annotation copyrighted by Book News, Inc., Portland, OR

A pioneering exploration of olfaction that upsets settled notions of how the brain translates sensory information. Decades of cognition research have shown that external stimuli “spark” neural patterns in particular regions of the brain. This has fostered a view of the brain as a space that we can map: here the brain responds to faces, there it perceives a sensation in your left hand. But it turns out that the sense of smell—only recently attracting broader attention in neuroscience—doesn’t work this way. A. S. Barwich asks a deceptively simple question: What does the nose tell the brain, and how does the brain understand it? Barwich interviews experts in neuroscience, psychology, chemistry, and perfumery in an effort to understand the biological mechanics and myriad meanings of odors. She argues that it is time to stop recycling ideas based on the paradigm of vision for the olfactory system. Scents are often fickle and boundless in

comparison with visual images, and they do not line up with well-defined neural regions. Although olfaction remains a puzzle, Barwich proposes that what we know suggests the brain acts not only like a map but also as a measuring device, one that senses and processes simple and complex odors. Accounting for the sense of smell upsets theories of perception philosophers have developed. In their place, Smellosophy articulates a new model for understanding how the brain represents sensory information.

Approximately two million Americans suffer from taste & smell disorders. This much-needed book provides complete information on the pathophysiology, anatomy, biochemistry, patient evaluation, & treatment of chemosensory disorders. More than a dozen new topics are covered, including:

Using an approach that is geared toward developing solid, logical habits in dissection and identification, the Laboratory Manual for Anatomy & Physiology, 10th Edition presents a series of 55 exercises for the lab — all in a convenient modular format. The exercises include labeling of anatomy, dissection of anatomic models and fresh or preserved specimens, physiological experiments, and computerized experiments. This practical, full-color manual also includes safety tips, a comprehensive instruction and preparation guide for the laboratory, and tear-out worksheets for each exercise. Updated lab tests align with what is currently in use in today's lab setting, and brand new histology, dissection, and procedures photos enrich learning. Enhance your laboratory skills in an interactive digital environment with eight simulated lab experiences — eLabs. Eight interactive eLabs further your laboratory experience in an interactive digital environment. Labeling exercises provide opportunities to identify critical structures examined in the lab and lectures; and coloring exercises offer a kinesthetic experience useful in retention of content. User-friendly spiral binding allows for hands-free viewing in the lab setting. Step-by-step dissection instructions with accompanying illustrations and photos cover anatomical models and fresh or preserved specimens — and provide needed guidance during dissection labs. The dissection of tissues, organs, and entire organisms clarifies anatomical and functional relationships. 250 illustrations, including common histology slides and depictions of proper procedures, accentuate the lab manual's usefulness by providing clear visuals and guidance. Easy-to-evaluate, tear-out Lab Reports contain checklists, drawing exercises, and questions that help you demonstrate your understanding of the labs you have participated in. They also allow instructors to efficiently check student progress or assign grades. Learning objectives presented at the beginning of each exercise offer a straightforward framework for learning. Content and concept review questions throughout the manual provide tools for you to reinforce and apply knowledge of anatomy and function. Complete lists of materials for each exercise give you and your instructor a thorough checklist for planning and setting up laboratory activities, allowing for easy and efficient preparation. Modern anatomical imaging techniques, such as computed tomography (CT), magnetic resonance

imaging (MRI), and ultrasonography, are introduced where appropriate to give future health professionals a taste for — and awareness of — how new technologies are changing and shaping health care. Boxed hints throughout provide you with special tips on handling specimens, using equipment, and managing lab activities. Evolve site includes activities and features for students, as well as resources for instructors.

The human organs of perception are constantly bombarded with chemicals from the environment. Our bodies have in turn developed complex processing systems, which manifest themselves in our emotions, memory, and language. Yet the available data on the high order cognitive implications of taste and smell are scattered among journals in many fields, with no single source synthesizing the large body of knowledge, much of which has appeared in the last decade. This book presents the first multidisciplinary synthesis of the literature in olfactory and gustatory cognition. Leading experts have written chapters on many facets of taste and smell, including odor memory, cortical representations, psychophysics and functional imaging studies, genetic variation in taste, and the hedonistic dimensions of odors. The approach is integrative, combining perspectives from neuroscience, psychology, anthropology, philosophy, and linguistics, and is appropriate for students and researchers in all of these areas who seek an authoritative reference on olfaction, taste, and cognition.

Concepts of Biology is designed for the single-semester introduction to biology course for non-science majors, which for many students is their only college-level science course. As such, this course represents an important opportunity for students to develop the necessary knowledge, tools, and skills to make informed decisions as they continue with their lives. Rather than being mired down with facts and vocabulary, the typical non-science major student needs information presented in a way that is easy to read and understand. Even more importantly, the content should be meaningful. Students do much better when they understand why biology is relevant to their everyday lives. For these reasons, Concepts of Biology is grounded on an evolutionary basis and includes exciting features that highlight careers in the biological sciences and everyday applications of the concepts at hand. We also strive to show the interconnectedness of topics within this extremely broad discipline. In order to meet the needs of today's instructors and students, we maintain the overall organization and coverage found in most syllabi for this course. A strength of Concepts of Biology is that instructors can customize the book, adapting it to the approach that works best in their classroom. Concepts of Biology also includes an innovative art program that incorporates critical thinking and clicker questions to help students understand--and apply--key concepts.

A journey into the surprising science behind our flavor senses. Can you describe how the flavor of halibut differs from that of red snapper? How the taste of a Fuji apple differs from a Spartan? For most of us, this is a difficult task: flavor remains a vague, undeveloped concept that

we don't know enough about to describe—or appreciate—fully. In this delightful and compelling exploration of our most neglected sense, veteran science reporter Bob Holmes shows us just how much we're missing. Considering every angle of flavor from our neurobiology to the science and practice of modern food production, Holmes takes readers on a journey to uncover the broad range of factors that can affect our appreciation of a fine meal or an exceptional glass of wine. He peers over the shoulders of some of the most fascinating food professionals working today, from cutting-edge chefs to food engineers to mathematicians investigating the perfect combination of pizza toppings. He talks with flavor and olfactory scientists, who describe why two people can experience remarkably different sensations from the same morsel of food, and how something as seemingly unrelated as cultural heritage can actually impact our sense of smell. Along the way, even more surprising facts are revealed: that cake tastes sweetest on white plates; that wine experts' eyes can fool their noses; and even that language can affect our sense of taste. Flavor expands our curiosity and understanding of one of our most intimate sensations, while ultimately revealing how we can all sharpen our senses and our enjoyment of the things we taste. Certain to fascinate everyone from gourmards and scientists to home cooks and their guests, Flavor will open your mind—and palette—to a vast, exciting sensory world.

Laboratory Instrumentation and Techniques book are most important for Research student and Industrial Chemist and other.

For nearly fifteen yearz I've attempted 'shock therapy' on the mindz of Afrikan people by challenging us to dispute everything from history to politics, diet to religion, on down to historic African-American organizationz. My quest was and alwayz will be to challenge you; to dare you to face who taught you; to reveal that not everything you may believe now, you had the opportunity to thoroughly investigate. Analitikul Cogitationz is a two-part book. So that you can know the person behind Da Ghetto Tymz magazine, Part 1 (Deja Vu), coverz the first few yearz of my re-awakening to Pan-Afrikan consciousness. In this mini-autobiography, I speak of thingz I went through I once was afraid to speak about. Part 2 is a collection of some of my best perspective articles that appeared in Da Ghetto Tymz magazine from 1993-2006. You may or may not agree with the message I convey, but I hope you will use my arguments as inspiration to further confirm your own beliefs whatever they may be.

This book reviews the research pertaining to nutrient requirements for working in cold or in high-altitude environments and states recommendations regarding the application of this information to military operational rations. It addresses whether, aside from increased energy demands, cold or high-altitude environments elicit an increased demand or requirement for specific nutrients, and whether performance in cold or high-altitude environments can be enhanced by the provision of increased amounts of specific nutrients.

Medicinal chemistry is both science and art. The science of medicinal chemistry offers mankind one of its best hopes for improving the quality of life. The art of medicinal chemistry continues to challenge its practitioners with the need for both intuition and experience to discover new drugs. Hence sharing the experience of drug research is uniquely beneficial to the field of medicinal chemistry. Drug research requires interdisciplinary team-work at the interface between chemistry, biology and medicine. Therefore, the topic-related series Topics in Medicinal Chemistry covers all relevant aspects of drug research, e.g. pathobiochemistry of diseases, identification and validation of (emerging) drug targets, structural biology, drugability of targets, drug design approaches, chemogenomics, synthetic chemistry including combinatorial methods, bioorganic chemistry, natural compounds, high-throughput screening, pharmacological in vitro and in vivo investigations, drug-receptor interactions on the molecular level, structure-activity relationships, drug absorption, distribution, metabolism, elimination, toxicology and pharmacogenomics. In general, special volumes are edited by well known guest editors.

Explains the different types of matter and how it changes from one state to another by applying heat or pressure.

Secondary schools are continually faced with the task of preparing students for a world that is more connected, advanced, and globalized than ever before. In order to adequately prepare students for their future, educators must provide them with strong reading and writing skills, as well as the ability to understand scientific concepts. The Handbook of Research on Science Literacy Integration in Classroom Environments is a pivotal reference source that provides vital research on the importance of cross-curriculum/discipline connections in improving student understanding and education. While highlighting topics such as curriculum integration, online learning, and instructional coaching, this publication explores practices in teaching students how to analyze and interpret data, as well as reading, writing, and speaking. This book is ideally designed for teachers, graduate-level students, academicians, instructional designers, administrators, and education researchers seeking current research on science literacy adoption in contemporary classrooms.

The main purpose of the book is to provide insight into an area that humans often take for granted. There are wonderful and exciting stories of organisms using chemical signals as a basis of a sophisticated communication system. In many instances, chemical signals can provide more detailed and accurate information than any other mode of communication, yet this world is hidden from us because of our focus on visual and auditory signals. Although we have a diversity of senses available to us, humans are primarily auditory and visual animals. These stimuli are sent to the more cognitive areas of our brain where they are immediately processed for information. We use sounds to communicate and music to excite or soothe us. Our vision provides us with communication, entertainment, and information about our world. Even though our world is dominated by other stimulus energies, we have chosen, in an evolutionary sense, either auditory or visual signals to carry our most important information. This is not the case for most other organisms. Chemical signals, mediated through the sense of smell and taste, are typically more important and are used more often than other sensory signals. The world of communication using chemicals is an alien world for us. We are unaware of how important chemical signals are to other organisms and we often overlook the influence of chemical signals in our own life. Part of this naïveté about chemical signals is due to our cultural focus on visual and auditory signals, but a larger part of our collective ignorance is the lack of information about chemical communication in both popular and scientific writings. The popular press and popular writings virtually ignore the chemical senses, especially in regard to their role or influence for humans and our human culture. Academic books and textbooks are no better.

"It's an ideal companion for Thibodeau and Patton's Anatomy and Physiology, Sixth Edition, as well as any standard anatomy and physiology textbook."--BOOK JACKET.

Many scientific structures and systems are named after Johannes Müller, one of the most respected anatomists and physiologists of the 19th century. This book tells his story by interweaving it with that of seven of his most famous students.

This volume updates and combines two National Academy Press bestsellers--Prudent Practices for Handling Hazardous

Chemicals in Laboratories and Prudent Practices for Disposal of Chemicals from Laboratories--which have served for more than a decade as leading sources of chemical safety guidelines for the laboratory. Developed by experts from academia and industry, with specialties in such areas as chemical sciences, pollution prevention, and laboratory safety, Prudent Practices for Safety in Laboratories provides step-by-step planning procedures for handling, storage, and disposal of chemicals. The volume explores the current culture of laboratory safety and provides an updated guide to federal regulations. Organized around a recommended workflow protocol for experiments, the book offers prudent practices designed to promote safety and it includes practical information on assessing hazards, managing chemicals, disposing of wastes, and more. Prudent Practices for Safety in Laboratories is essential reading for people working with laboratory chemicals: research chemists, technicians, safety officers, chemistry educators, and students.

Smell and Taste, Volume 164 focuses on recent clinical research regarding two of our primary chemical senses, smell and taste. This volume is the most comprehensive neurology book on disorders of smell and taste function. Its major sections include epidemiology, anatomy and physiology, and clinical assessment, including neuroimaging, clinical conditions affecting smell and taste function (e.g., autoimmune disorders, head trauma, diseases of the nose and mouth, etc.). The widespread use of olfactory testing in clinical trials searching for biomarkers of neurodegenerative diseases is reviewed, along with evidence that smell dysfunction can be an early marker in neurodegenerative diseases and autoimmune disorders. Covers all aspects of disorders of taste and smell for beginning students of various disciplines (neurology, psychiatry, neuropsychology, otolaryngology) Teaches that smell and taste testing can be useful in differential diagnosis and can assess brain regions not normally assessed by traditional neurological or neuropsychological tests Addresses, in detail, recent evidence that smell loss is a better predictor of future mortality than dementia and even heart disease

Examines the biochemistry, physiology, and anatomy of the olfactory, gustatory, and trigeminal chemosensory systems. The text explores the role of olfactory assessment in disease diagnosis and provides an up-to-date review of chemosensory research. in the medical, food, beverage, flavour, perfume, and energy industries.

Brain Facts is a primer on the brain and nervous system, published by the Society for Neuroscience. Brain Facts is a valuable resource for educators, students, and anyone interesting in learning about neuroscience. Download an audio recording of Brain Facts today, available on BrainFacts.org and through iTunes U. The brain is the most complex biological structure in the known universe. It is a topic rich with exciting new discoveries, continuing profound unknowns, and critical implications for individuals, families, and societies. Learn more about the brain and nervous system through articles, images, videos, and more on BrainFacts.org, a public information initiative of The Kavli Foundation, the Gatsby

### Charitable Foundation, and the Society for Neuroscience.

The Perception of Odors presents concisely and clearly some of the important aspects in the study of olfaction such as perception, human pheromones, and odor pollution. The book consists of 11 detailed chapters. Chapters 1 and 2 serve as the introduction as it outlines the basic principles, historical development, and the anatomy and physiology of olfaction. A chapter on "Psychophysics" is included wherein it covers the history of the measurement of odors and developments in the psychophysics of smell. The following chapters deal mostly with areas of research such as odor masking, deodorization, adaptation, odor mixture, and memory. Chapter 9 tackles the relationship of smell, particularly the perception of odor, to other senses. The last two chapters discuss the possible future areas of research and problems in odor perception. This book is a valuable reference to students and researchers studying sensation and perception.

Reducing the intake of sodium is an important public health goal for Americans. Since the 1970s, an array of public health interventions and national dietary guidelines has sought to reduce sodium intake. However, the U.S. population still consumes more sodium than is recommended, placing individuals at risk for diseases related to elevated blood pressure. Strategies to Reduce Sodium Intake in the United States evaluates and makes recommendations about strategies that could be implemented to reduce dietary sodium intake to levels recommended by the Dietary Guidelines for Americans. The book reviews past and ongoing efforts to reduce the sodium content of the food supply and to motivate consumers to change behavior. Based on past lessons learned, the book makes recommendations for future initiatives. It is an excellent resource for federal and state public health officials, the processed food and food service industries, health care professionals, consumer advocacy groups, and academic researchers.

This is a lab manual for a college-level human anatomy course. Mastery of anatomy requires a fair amount of memorization and recall skills. The activities in this manual encourage students to engage with new vocabulary in many ways, including grouping key terms, matching terms to structures, recalling definitions, and written exercises. Most of the activities in this manual utilize anatomical models, and several dissections of animal tissues and histological examinations are also included. Each unit includes both pre- and post-lab questions and six lab exercises designed for a classroom where students move from station to station. The vocabulary terms used in each unit are listed at the end of the manual and serve as a checklist for practicals.

"A rich, engrossing, and deeply intelligent story....This is a book I won't soon forget." —Molly Wizenberg, bestselling author of *A Homemade Life* "Fresh, smart, and consistently surprising. If this beautifully written book were a smell, it would be a crisp green apple." —Claire Dederer, bestselling author of *Poser* *Season to Taste* is an aspiring chef's moving account of finding her way—in the kitchen and beyond—after a tragic accident destroys her sense of smell. Molly Birnbaum's remarkable story—written with the good cheer and great charm of popular food writers Laurie Colwin and Ruth Reichl—is destined to stand alongside Julie Powell's *Julie and Julia* as a classic tale of a cooking life. *Season to Taste* is sad, funny, joyous, and inspiring.

Among the constituents of food, volatile compounds are a particularly intriguing group of molecules, because they give rise to odor and aroma. Indeed, olfaction is one of the main aspects influencing the appreciation or dislike of particular food items. Volatile compounds are perceived through the smell sensory organs of the nasal cavity, and evoke numerous associations and emotions, even before the food is tasted. Such a reaction occurs because the information from these receptors is directed to the hippocampus and amygdala, and the key regions of the brain involved in learning and memory. In addition to identifying the odor active compounds, the analysis of the volatile

compounds in food is also applicable for detecting the ripening, senescence, and decay in fruit and vegetables, as well as monitoring and controlling the changes during food processing and storage (i.e., preservation, fermentation, cooking, and packaging). I warmly invite colleagues to submit their original research or review articles covering all aspects of volatile compounds research in the food sector (excluding pesticides), and/or the analytical methods used to identify, measure, and monitor these molecules.

"Foodies rejoice! Malcolm Gladwell's favorite food inventor offers a guide to the senses with advice on how to develop your palate and better enjoy the pleasures of eating. Featured by Malcolm Gladwell in a New Yorker magazine article about the quest to develop the perfect cookie, Barb Stuckey is the food developer that famed foodies--such as Michael Pollan--turn to when they need to understand the psychology and physiology of taste. In *Taste What You're Missing*, Stuckey shares her professional knowledge in an engaging style that's one part Mary Roach, two parts Oliver Sacks, and a dash of Anthony Bourdain for spice. *Taste What You're Missing* serves up stories: seared, sauced, and garnished with humor and insight into our complicated experiences with food. First explaining the building blocks of taste perception on a physical level, Stuckey walks readers through the five basic tastes: sweet, sour, bitter, salt, and umami. She explains the critical importance of smell and how the other senses--touch, hearing, and sight--come into play when we enthusiastically dive into a plate of food. She provides eye-opening and delicious anecdotes and exercises that readers can perform to learn, for example, their unique "taster type," or the subtle differences between sour, bitter, tannic, and astringent. Armed with this new knowledge, readers can improve their ability to discern flavors, detect ingredients, and devise new taste combinations in their own kitchens. Keeping in mind that the only thing foodies like better than eating food is talking about food, *Taste What You're Missing* gives such curious eaters, Food Network watchers, kitchen tinkerers, and armchair Top Chefs understanding and language that will impress their friends and families with insider knowledge about everything they eat"--

*Presents the State-of-the-Art in Fat Taste Transduction* A bite of cheese, a few potato chips, a delectable piece of bacon – a small taste of high-fat foods often draws you back for more. But why are fatty foods so appealing? Why do we crave them? *Fat Detection: Taste, Texture, and Post Ingestive Effects* covers the many factors responsible for the sensory appeal of foods rich in fat. This well-researched text uses a multidisciplinary approach to shed new light on critical concerns related to dietary fat and obesity. Outlines Compelling Evidence for an Oral Fat Detection System Reflecting 15 years of psychophysical, behavioral, electrophysiological, and molecular studies, this book makes a well-supported case for an oral fat detection system. It explains how gustatory, textural, and olfactory information contribute to fat detection using carefully designed behavioral paradigms. The book also provides a detailed account of the brain regions that process the signals elicited by a fat stimulus, including flavor, aroma, and texture. This readily accessible work also discusses: The importance of dietary fats for living organisms Factors contributing to fat preference, including palatability Brain mechanisms associated with appetitive and hedonic experiences connected with food consumption Potential therapeutic targets for fat intake control Genetic components of human fat preference Neurological disorders and essential fatty acids Providing a comprehensive review of the literature from the leading scientists in the field, this volume delivers a holistic view of how the palatability and orosensory properties of dietary fat impact food intake and ultimately health. *Fat Detection* represents a new frontier in the study of food perception, food intake, and related health consequences.

The Novartis Foundation Series is a popular collection of the proceedings from Novartis Foundation Symposia, in which groups of leading scientists from a range of topics across biology, chemistry and medicine assembled to present papers and discuss results. The Novartis Foundation, originally known as the Ciba Foundation, is well known to scientists and clinicians around the world.

*Prudent Practices in the Laboratory*--the book that has served for decades as the standard for chemical laboratory safety practice--now



features updates and new topics. This revised edition has an expanded chapter on chemical management and delves into new areas, such as nanotechnology, laboratory security, and emergency planning. Developed by experts from academia and industry, with specialties in such areas as chemical sciences, pollution prevention, and laboratory safety, *Prudent Practices in the Laboratory* provides guidance on planning procedures for the handling, storage, and disposal of chemicals. The book offers prudent practices designed to promote safety and includes practical information on assessing hazards, managing chemicals, disposing of wastes, and more. *Prudent Practices in the Laboratory* will continue to serve as the leading source of chemical safety guidelines for people working with laboratory chemicals: research chemists, technicians, safety officers, educators, and students.

This quick reference for current medical diagnosis and treatment covers more than 1,000 medical/surgical conditions in a fast-access format that includes basics, diagnosis, treatment, medications, and more. This edition is thoroughly updated to reflect contemporary practice norms, and includes expanded indexes and listings of Web sites.

An introduction to the work and ideas of artists who use—and even influence—science and technology. A new breed of contemporary artist engages science and technology—not just to adopt the vocabulary and gizmos, but to explore and comment on the content, agendas, and possibilities. Indeed, proposes Stephen Wilson, the role of the artist is not only to interpret and to spread scientific knowledge, but to be an active partner in determining the direction of research. Years ago, C. P. Snow wrote about the "two cultures" of science and the humanities; these developments may finally help to change the outlook of those who view science and technology as separate from the general culture. In this rich compendium, Wilson offers the first comprehensive survey of international artists who incorporate concepts and research from mathematics, the physical sciences, biology, kinetics, telecommunications, and experimental digital systems such as artificial intelligence and ubiquitous computing. In addition to visual documentation and statements by the artists, Wilson examines relevant art-theoretical writings and explores emerging scientific and technological research likely to be culturally significant in the future. He also provides lists of resources including organizations, publications, conferences, museums, research centers, and Web sites.

Laboratory exercises are a necessary part of science education. They enable students to better understand the principles discussed in lectures, and provide them with hands-on experience of the practical aspects of scientific research. The purpose of this book is to provide students and instructors with a time-tested set of lab exercises that illustrate the common sensory tests and/or sensory principles used in evaluation of foods, beverages and consumer products. The appendices will also include a set of simple problem sets that can be used to teach and reinforce basic statistical tests. Approximately twenty years ago the Sensory Evaluation Division of the Institute of Food Technologists sponsored the preparation of a set of exercises titled "Guidelines for Laboratory Exercises for a Course in Sensory Evaluation of Foods," edited by one of the co-authors (Heymann). This book will provide additional materials from the second author (Lawless), as well as other instructors, in a uniform format that can be easily adopted for course use. Most importantly, the lab exercises will complement the flagship textbook in the field, *Sensory Evaluation of Foods: Principles and Practices*, 2E, also by Lawless and Heymann and published by Springer. Possible course adoption of the main text along with the lab manual should enhance the sales of these materials.

Smell and TasteElsevier

[Copyright: 8021908a3dbb63fa433345986398873c](https://doi.org/10.1016/B978-0-12-374750-0)