



Chemistry Connections, Second Edition: The Chemical Basis of Everyday Phenomena (Complementary Science)

By Kerry K. Karukstis, Gerald R. Van Hecke

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One of the greatest challenges facing chemists and chemical educators today is conveying the central importance and relevance of chemistry to students and society at large. The new edition of **Chemistry Connections** highlights the fundamental role of chemical principles in governing our everyday experiences and observations.

Introductory chemistry students and educators as well as laypersons with an inquisitiveness about the world around them will find the book an informative introduction to the context of chemistry in their lives. The book is written in a lively question-and-answer format with presentations in both lay and technical terms.

- * Two levels of explanations: general, accessible ones highlight the chemical essence of the phenomenon; and technical ones using chemical principles provide more in-depth interpretation
- * Indexing of questions according to key principles or terms enhances instructional use
- * Figures and 3-D chemical structures illustrate the chemical concepts presented
- * References to related World Wide Web sites for further exploration provide inexpensive and convenient access to related information.
- * Color plates enhance connections between specific topics

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Editorial Review

Review

"...a very effective way to increase students' interest in chemistry...The selected examples provide a welcome dose of reality..."

-Jeffrey B. Arterburn, New Mexico State University

"...the authors weave in essential concepts without the reader even knowing it. The references...are EXCELLENT."

-Jennifer Shepherd, Gonzaga University

"...wonderful and fun...buy one...and use it every day to add relevant examples to all your chemistry courses."

-Tricia Ferrett, Carleton College

From the Back Cover

Chemistry Connections: The Chemical Basis of Everyday Phenomena

Kerry K. Karukstis & Gerald R. Van Hecke

Harvey Mudd College, Claremont, California

- * Why does soap lather in soft water than in hard water?
- * Why won't a glass of water relieve the burning sensation of chili peppers?
- * Why does baking soda extinguish a fire?
- * Why are opals and pearls iridescent?
- * Why do lightsticks glow?
- * Why do old oil paintings discolor?
- * Why do kidney stones form?
- * Why is Pyrex used for cooking?

The answers to these and many more questions about our everyday experiences and observations are found in *Chemistry Connections: The Chemical Basis of Everyday Phenomena*. This collection of contemporary real-world examples of chemistry in action is written in a question-and-answer format with presentations, in both lay and technical terms, of the chemical principles underlying numerous familiar phenomena and topical curiosities. Introductory college chemistry students, educators, working chemists, and anyone curious about the world around them will find the book a fascinating discussion of chemistry in our everyday lives.

Special features of interest:

- * a question-and-answer format of topical subjects to engage the reader
- * general explanations in accessible terms to highlight the chemical principles to provide specific details for a more in-depth interpretation
- * indexing of questions according to key principles or terms to enhance instructional use
- * figures and chemical structures to illustrate further the chemical concepts presented
- * references to related World Wide Web sites for further explanation

About the Author

Dr. Kerry K. Karukstis is Professor of Chemistry at Harvey Mudd College in Claremont, California. She received her Bachelor of Science degree in Chemistry in 1977 from Duke University and her Ph.D. in Physical Chemistry in 1981 from Duke University. Prior to her arrival at Harvey Mudd College in 1984, she was a National Institutes of Health Postdoctoral Research Fellow at the Laboratory of Chemical

Biodynamics at the University of California, Berkeley. Her research interests involve applications of absorbance and fluorescence spectroscopy to surfactant assemblies (micelles, reverse micelles, vesicles, liposomes) and host-guest systems (cyclodextrins, dendrimers). She is co-author with Gerald R. Van Hecke of *A Student's Guide to Lasers in Chemistry*, a monograph for undergraduates on applications of lasers in chemistry. She is a member of the American Chemical Society, the American Society for Photobiology, the Biophysical Society, the Council on Undergraduate Research, Phi Beta Kappa, and Society of the Sigma Xi - The Scientific Research Society. She is also currently a Councilor for the Chemistry Division of the Council on Undergraduate Research. Her curricular initiatives have focused on two areas: introducing undergraduate applications of lasers in chemistry and incorporating biophysical applications and experiments in physical chemistry courses and laboratories.

Dr. Gerald R. Van Hecke is Professor of Chemistry at Harvey Mudd College in Claremont, California. He received his Bachelor of Science degree in Chemistry in 1961 from Harvey Mudd College and his M.A. and Ph.D. degrees in Physical Chemistry in 1963 and 1966 from Princeton University. Prior to his arrival at Harvey Mudd College in 1970, he was a Chemist at Shell Development in Emeryville, California. His research interests involve studies of liquid crystalline materials, from synthesis of new materials to their characterization by thermodynamic and spectral measurements. He also uses laser light scattering to measure thermodynamic properties of mixtures of simple liquids. He is co-author with Kerry K. Karukstis of *A Student's Guide to Lasers in Chemistry*, a monograph for undergraduates on the applications of lasers in chemistry. He is a member of the American Chemical Society, the International Liquid Crystal Society, the Council on Undergraduate Research, and Society of the Sigma Xi - The Scientific Research Society. His curricular initiatives have focused on introducing undergraduate applications of lasers in chemistry.

Users Review

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Michael Wickham:

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