

Chemistry Contexts 2

"Chemistry Contexts 1 and 2, 2nd Editions have been designed for the Preliminary and HSC Chemistry Syllabus in NSW. The new editions improve on an already well respected series, and add a number of new features to make teaching and learning in Chemistry even easier" -- Publisher's website.

Practicing chemists face a number of ethical considerations, from issues of attribution of authorship through the potential environmental impact of a new process to the decision to work on chemicals that could be weaponised. By keeping ethical considerations in mind when working, chemists can build their own credibility, contribute to public trust in the chemical sciences and do science that benefits the world. Divided into three parts, methodological aspects, research ethics, and social and environmental implications, Good Chemistry introduces tools and concepts to help chemists recognise the ethical and social dimensions of their own work and act appropriately. Written to support chemistry students in their studies this book includes practice questions and examples of relevant situations to help students engage with the subject and prepare for their professional life in academia, industry, or public service.

Winner of the CHOICE Outstanding Academic Title 2017 Award This comprehensive collection of top-level contributions provides a thorough review of the vibrant field of chemistry education. Highly-experienced chemistry professors and education experts cover the latest developments in chemistry learning and teaching, as well as the pivotal role of chemistry for shaping a more sustainable future. Adopting a practice-oriented approach, the current challenges and opportunities posed by chemistry education are critically discussed, highlighting the pitfalls that can occur in teaching chemistry and how to circumvent them. The main topics discussed include best practices, project-based education, blended learning and the role of technology, including e-learning, and science visualization. Hands-on recommendations on how to optimally implement innovative strategies of teaching chemistry at university and high-school levels make this book an essential resource for anybody interested in either teaching or learning chemistry more effectively, from experience chemistry professors to secondary school teachers, from educators with no formal training in didactics to frustrated chemistry students.

The up-to-DATE guide to name reactions in heterocyclic chemistry Name Reactions in Heterocyclic Chemistry II presents a comprehensive treatise on name reactions in heterocyclic chemistry, one of the most exciting—and important—fields within organic chemistry today. The book not only covers fresh ground, but also provides extensive information on new and/or expanded reactions in: Three- and four-membered heterocycles Five-membered heterocycles (pyrroles and pyrrolidines, indoles, furans, thiophenes, and oxazoles) Six-membered heterocycles, including pyridines, quinolines, and isoquinolines Featuring contributions from the leading authorities in heterocyclic chemistry, Each section includes a description of the given reaction, as well as the relevant historical perspective, mechanism, variations and improvements, synthetic utilities, experimental details, and references to the current primary literature. The reactions covered in Name Reactions in Heterocyclic Chemistry have been widely adopted in all areas of organic synthesis, from the medicinal/pharmaceutical field, to agriculture, to fine chemicals, and the book brings the most cutting-edge knowledge to practicing synthetic chemists and students, along with the tools needed to synthesize new and useful molecules.

Best Practices, Opportunities and Trends

Engineering Aspects of Self-Organising Materials

Chemistry in Context

Empirical Evidence and Practical Strategies

A Practical Guide and Textbook for Student Teachers, Teacher Trainees and Teachers

Paving the way towards authentic chemistry teaching - A contribution to teachers' professional development

Similarities in chemical reactivity depend on molecular properties, and are ultimately dependent on the similarities of electronic structures. Fundamentally, quantum chemical similarities are manifested in similarities of molecular behaviour. This book covers both the quantum chemical origins and the methods of phenomenological descriptions of molecular similarity. The emphasis on reactivity is a unique feature. The exposition of computational methods and the prediction of reactivities, as well as the description of actual computer programs constitute important aspects of the book. Specific applications in drug design and techniques for the interpretation of the roles of functional groups in reactivity are of interest in molecular engineering. The selection of topics provides a detailed and balanced introduction to the field of similarity-based assessment of chemical reactivity. For researchers and graduate students in both fundamental chemistry and applied fields, such as biochemistry, pharmacology and drug design.

th th The 20th International Conference on Chemical Education (20 ICCE), which had rd th "Chemistry in the ICT Age" as the theme, was held from 3 to 8 August 2008 at Le Méridien Hotel, Pointe aux Piments, in Mauritius. With more than 200 participants from 40 countries, the conference featured 140 oral and 50 poster presentations. th Participants of the 20 ICCE were invited to submit full papers and the latter were subjected to peer review. The selected accepted papers are collected in this book of proceedings. This book of proceedings encloses 39 presentations covering topics ranging from fundamental to applied chemistry, such as Arts and Chemistry Education, Biochemistry and Biotechnology, Chemical Education for Development, Chemistry at Secondary Level, Chemistry at Tertiary Level, Chemistry Teacher Education, Chemistry and Society, Chemistry Olympiad, Context Oriented Chemistry, ICT and Chemistry Education, Green Chemistry, Micro Scale Chemistry, Modern Technologies in Chemistry Education, Network for Chemistry and Chemical Engineering Education, Public Understanding of Chemistry, Research in Chemistry Education at Elementary Level. We would like to thank those who submitted the full papers and the reviewers for their timely help in assessing the papers for publication. In We would also like to pay a special tribute to all the sponsors of the 20 ICCE and, in particular, the Tertiary Education Commission (http://tec.innet.nu) and the Organisation for the Prohibition of Chemical Weapons (http://www.opcw.org) for kindly agreeing to fund the publication of these proceedings.

Building on the foundation set in Volume I—a landmark synthesis of research in the field—Volume II is a comprehensive, state-of-the-art new volume highlighting new and emerging research perspectives. The contributors, all experts in their research areas, represent the international and gender diversity in the science education research community. The volume is organized around six themes: theory and methods of science education research; science learning; culture, gender, and society of science learning; science teaching; curriculum and assessment in science; science teacher education. Each chapter presents an integrative review of the research on the topic it addresses—pulling together the existing research, working to understand the historical trends and patterns in that body of scholarship, describing how the issue is conceptualized within the literature, how methods and theories have shaped the outcomes of the research, and where the strengths, weaknesses, and gaps are in the literature. Providing guidance to science education faculty and graduate students and leading to new insights and directions for future research, the Handbook of Research on Science Education, Volume II is an essential resource for the entire science education community.

"In partnership with Scientific American"—Cover.

Online + Book

Inc. Cd-rom

Cambridge International AS and A Level Chemistry Coursebook with CD-ROM

Chemistry Contexts 2

Teaching Chemistry – A Studybook

MCAT General Chemistry Review 2022-2023

This study is an outgrowth of our interest in the history of modern chemistry. The paucity of reliable, quantitative knowledge about past science was brought home forcibly to us when we undertook a research seminar in the comparative history of modern chemistry in Britain, Germany, and the United States. That seminar, which took place at the University of Pennsylvania in the spring of 1975, was paralleled by one devoted to the work of the "Annales School". The two seminars together catalyzed the attempt to construct historical measures of change in aspects of one science, or "chemical indicators". The present volume displays our results. Perhaps our labors may be most usefully compared with the work of those students of medieval science who devote their best efforts to the establish ment of texts. Only when acceptable texts have been constructed from fragmentary and corrupt sources can scholars move on to the more satisfying business of making history. So too in the modern period, a necessary pre- liminary to the full history of any scientific profession is the establishing of reliable quantitative information in the form of statistical series. This volume does not offer history. Instead it provides certain element- indicators -- that may be useful to individuals interested in the history of American chemistry and chemical industry, and suggestive for policy.

In the last quarter century there have been only two seminal contributions in the field of organic stereochemistry - both by Kurt Mislow and his coworkers - ones that have clarified the basic concepts of stereotopicity and chirotopicity. Not withstanding a few other sporadic contributions by others, to date there have been no systematic attempts to unify and develop the conceptual framework and terminology of organic stereochemistry. Existing terms are frequently misused or abused, needed terms - redundant, confusing or controversial - are invented randomly, and yet other needed terms have not seen the light of day. This three-part work presents the elements of a simple, uniform and comprehensive language of the stereochemical underpinnings of organic chemistry. It is essential reading for industrial chemists, graduate students, university professors and industrial researchers in the field of Organic Stereochemistry. * Presents the elements of a simple, uniform and comprehensive language of organic stereochemistry. * Unifies and develops a comprehensive language of organic stereochemistry * Presents concepts and classifications which are universal.

This book focuses on developing and updating prospective practicing chemistry teachers' pedagogical content knowledge. The 11 chapters of the book discuss the most essential theories from general and science education, and in the second part of each of the chapters apply the theory to examples from the chemistry classroom. Key sentences, tasks for self-assessment, and suggestions for further reading are also included. The book is focused on many different issues a teacher of chemistry is concerned with. The chapters provide contemporary discussions of the chemistry curriculum, objectives and assessment, motivation, learning difficulties, linguistic issues, practical work, student active pedagogies, ICT, informal learning, continuous professional development, and teaching chemistry in developing environments. This book, with contributions from many of the world's top experts in chemistry education, is a major publication offering something that has not previously been available. Within this single volume, chemistry teachers, teacher educators, and prospective teachers will find information and advice relating to key issues in teaching (such as the curriculum, assessment and so forth), but contextualised in terms of the specifics of teaching and learning of chemistry, and drawing upon the extensive research in the field. Moreover, the book is written in a scholarly style with extensive citations to the literature, thus providing an excellent starting point for teachers and research students undertaking scholarly studies in chemistry education; whilst, at the same time, offering insight and practical advice to support the planning of effective chemistry teaching. This book should be considered essential reading for those preparing for chemistry teaching, and will be an important addition to the libraries of all concerned with chemical education. Dr Keith S. Taber (University of Cambridge; Editor: Chemistry Education Research and Practice) The highly regarded collection of authors in this book fills a critical void by providing an essential resource for teachers of chemistry to enhance pedagogical content knowledge for teaching modern chemistry. Through clever orchestration of examples and theory, and with carefully framed guiding questions, the book equips teachers to act on the relevance of essential chemistry knowledge to navigate such challenges as context, motivation to learn, thinking, activity, language, assessment, and maintaining professional expertise. If you are a secondary or post-secondary teacher of chemistry, this book will quickly become a favorite well-thumbed resource! Professor Hannah Sevian (University of Massachusetts Boston)

With contributions from world-renowned experts in the field, this book explores developments in the transport kinetics, seasonal cycling, accumulation, geochemistry, transformation, and toxicology of arsenic. It details advances in the prevention and control of arsenic and arsenic compounds in the air, soil, and water and offers analytical methods

Chemistry Contexts

A Bohmian Perspective

Environmental Chemistry of Arsenic

Teacher's resource

The Chemical Biology of Nitrogen

Chemistry Education in the ICT Age

Problem solving is central to the teaching and learning of chemistry at secondary, tertiary and post-tertiary levels of education, opening to students and professional chemists alike a whole new world for analysing data, looking for patterns and making deductions. As an important higher-order thinking skill, problem solving also constitutes a major research field in science education. Relevant education research is an ongoing process, with recent developments occurring not only in the area of quantitative/computational problems, but also in qualitative problem solving. The following situations are considered, some general, others with a focus on specific areas of chemistry: quantitative problems, qualitative reasoning, metacognition and resource activation, deconstructing the problem-solving process, an overview of the working memory hypothesis, reasoning with the electron-pushing formalism, scaffolding synthesis skills, spectroscopy for structural characterization in organic chemistry, enzyme kinetics, problem solving in the academic chemistry laboratory, chemistry problem-solving in context, team-based/active learning, technology for molecular representations, IR spectra simulation, and computational quantum chemistry tools. The book concludes with methodological and epistemological issues in problem solving research and other perspectives in problem solving in chemistry. With a foreword by George Bodner.

The suggestion that quantum-mechanical tunnelling might be a significant factor in some chemical reactions was first made fifty years ago by Hund, very soon after the principles of wave mechanics had been established by de Broglie, Schrödinger and Heisenberg, and similar ideas were put forward during the following thirty years by a number of authors. It was realised from the beginning that such effects would be particularly prominent in reactions involving the movement of protons or hydrogen atoms, and both theoretical and experimental work received a powerful stimulus in the discovery of deuterium in 1932. During the last twenty years theoretical predictions about the tunnel effect have been supported by an increasing body of experimental evidence, derived especially from studies of hydrogen isotope effects. The present book presents an attempt to summarize this evidence and to indicate the main lines of the basic theory. Details of mathematical manipulation are restricted mainly to Chapter 2 and the Appendices, and many readers may prefer to confine themselves to the results obtained. The main emphasis has been on the kinetics of chemical reactions involving the transfer of protons, hydrogen atoms or hydride ions, although Chapter 6 gives an account of the role of the tunnel effect in molecular spectra, and Chapter 7 makes some mention of tunnelling in solid state phenomena, biological processes and the electrolytic discharge of hydrogen. Only passing references have been made to tunnelling by electrons.

With contributions by numerous experts

Many studies have highlighted the importance of discourse in scientific understanding. Argumentation is a form of scientific discourse that plays a central role in the building of explanations, models and theories. Scientists use arguments to relate the evidence that they select from their investigations and to justify the claims that they make about their observations. The implication is that argumentation is a scientific habit of mind that needs to be appropriated by students and explicitly taught through suitable instruction. Edited by Sibel Erduran, an internationally recognised expert in chemistry education, this book brings together leading researchers to draw attention to research, policy and practice around the inclusion of argumentation in chemistry education. Split into three sections: Research on Argumentation in Chemistry Education, Resources and Strategies on Argumentation in Chemistry Education, and Argumentation in Context, this book blends practical resources and strategies with research-based evidence. The book contains state of the art research and offers educators a balanced perspective on the theory and practice of argumentation in chemistry education.

Problems and Problem Solving in Chemistry Education

The Chemistry of Double-bonded Functional Groups

Name Reactions in Heterocyclic Chemistry II

HSC

Advances in Chemical Engineering

Quality of Human Resources: Education - Volume II

The cross-fertilization of physico-chemical and mathematical ideas has a long historical tradition. This volume of Advances in Chemical Engineering is almost completely dedicated to a conference on "Mathematics in Chemical Kinetics and Engineering (MaCK&E-2007)", which was held in Houston in February 2007, bringing together about 40 mathematicians, chemists, and chemical engineers from 10 countries to discuss the application and development of mathematical tools in their respective fields. * Updates and informs the reader on the latest research findings using original reviews * Written by leading industry experts and scholars * Reviews and analyzes developments in the field

Advances in Quantum Chemistry presents surveys of current topics in this rapidly developing field one that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry, and biology. It features detailed reviews written by leading international researchers. In this volume the readers are presented with an exciting combination of themes. Presents surveys of current topics in this rapidly developing field that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry and biology Features detailed reviews written by leading international researchers Topics include: New advances in Quantum Chemical Physics; Original theory and a contemporary overview of the field of Theoretical Chemical Physics; State-of-the-Art calculations in Theoretical Chemistry

Comprehensive Supramolecular Chemistry II, Second Edition is a "one-stop shop" that covers supramolecular chemistry, a field that originated from the work of researchers in organic, inorganic and physical chemistry, with some biological influence. The original edition was structured to reflect, in part, the origin of the field. However, in the past two decades, the field has changed a great deal as reflected in this new work that covers the general principles of supramolecular chemistry and molecular recognition, experimental and computational methods in supramolecular chemistry, supramolecular receptors, dynamic supramolecular chemistry, supramolecular engineering, crystallographic (engineered) assemblies, sensors, imaging agents, devices and the latest in nanotechnology. Each section begins with an introduction by an expert in the field, who offers an initial perspective on the development of the field. Each article begins with outlining basic concepts before moving on to more advanced material. Contains content that begins with the basics before moving on to more complex concepts, making it suitable for advanced undergraduates as well as academic researchers Focuses on application of the theory in practice, with particular focus on areas that have gained increasing importance in the 21st century, including nanomedicine, nanotechnology and medicinal chemistry Fully rewritten to make a completely up-to-date reference work that covers all the major advances that have taken place since the First Edition published in 1996

? Much of the material included in each superbook (of supernotational aphorisms/maxims) in this volume is, of course, complementary, since their author's structural and thematic integrity has remained fairly consistent throughout. But if that were only the case he could have settled for one such superbook instead of two, the latter of which gradually emerged in its own right with a thematic and stylistic integrity of its own that, in many instances, not only went beyond but corrected and even contradicted some of the material already broached, thereby justifying its inclusion as a separate superbook that, nonetheless, was not unrelated, in most respects, to its predecessor. Some incidental material in the four supernotebooks of the first superbook and two of the second was not used or could not, for various reasons, be used, but what has been extracted from them has undergone sufficient rewriting and revision, not to say expansion, as to justify the concept of 'superbook', the intent of which is to draw a firm line under the biconical criteria which characterize not only this volume but other recent titles by John O'Loughlin, and all in the interests of a fresh approach to both logic and civilization that should enhance, rather than diminish, the capacity of the human mind to embrace morality and the complexities of moral issues to a degree and in a way arguably never before broached in the history of serious theoretical, or philosophical, endeavour. Every light of faith is dogged by a shadow of doubt, and it would be strange to the point of absurd if that were not the case with John O'Loughlin, even here in what should be a definitive account of his philosophical evolution. But such a shadow is actually complementary to the light and in no way a hindrance to the faith but, rather, a means of questioning and modifying one's approach to it so that the end-product, if end-product there be, will serve to enhance one's concept of truth and make one's faith in it all the more justifiably credible.-- A Centrettruths editorial

Creative Chemists

Argumentation in Chemistry Education

Teacher's Resource. HSC. 2

Strategies for Teaching and Learning

Molecular Similarity and Reactivity: From Quantum Chemical to Phenomenological Approaches

Anthracycline Chemistry and Biology I

Quality of Human Resources: Education is a component of Encyclopedia of Human Resources Policy, Development and Management which is part of the global Encyclopedia of Life Support Systems (EOLSS), an integrated compendium of twenty one Encyclopedias. The Theme is organized into five different topics which represent the main scientific areas of the theme: Foundations of Educational Systems; Knowledge for Education; Structural Foundations of Educational Systems; Educational Systems: Case Studies and Educational Indices; Education for Sustainable Development. Each of these consists of a topic chapter emphasizing the general aspects and various subject articles explaining the back ground, theory and practice of a specific type of education which is a very important factor in human development and awareness for achieving global sustainable development. These three volumes are aimed at the following five major target audiences: University and College Students, Educators, Professional Practitioners, Research Personnel and Policy Analysts, Managers, and Decision Makers and NGOs.

This book synthesizes theoretical perspectives, empirical evidence and practical strategies for improving teacher education in chemistry. Many chemistry lessons involve mindless "cookbook" activities where students and teachers follow recipes, memorise formulae and recall facts without understanding how and why knowledge in chemistry works. Capitalising on traditionally disparate areas of research, the book investigates how to make chemistry education more meaningful for both students and teachers. It provides an example of how theory and practice in chemistry education can be bridged. It reflects on the nature of knowledge in chemistry by referring to theoretical perspectives from philosophy of chemistry. It draws an empirical evidence from research on teacher education, and illustrates concrete strategies and resources that can be used by teacher educators. The book describes the design and implementation of an innovative teacher education project to show the impact of an intervention on pre-service teachers. The book shows how, by making use of visual representations and analogies, the project makes some fairly abstract and complex ideas accessible to pre-service teachers.

Creative thinking, be it that of the teacher or the student, has tended to be overlooked in science, but exercising it is important. This book shows how it can be done in chemistry, both in the context of creative chemistry teaching and in learning chemistry. Going beyond principles and ideology, readers will find practical strategies, tools, examples, and case studies in a variety of contexts to bring creative thinking theory into practice. Beginning with a discussion on the nature of creativity, the authors' debunk misconceptions and address the relationship between creativity and problem solving. Delving into opportunities for practising creative thinking in science, for instance, hypothesis generation and experiment design, the authors' then move on to discussions around assessing and evaluating creative thinking. Further areas covered include: multisensory chemistry, language and literacy, practical work and story-telling. As a resource, this book points the way to fostering exploration and the development of creative thinking in chemistry for the benefit of the student, and for the benefit of the teacher in offering a source of satisfaction and achievement in the work they do.

From DNA and RNA to proteins and vitamins the role of nitrogen is central in organismal metabolism. The Chemical Biology of Nitrogen comprehensively examines how the chemistry available to both inorganic and organic nitrogen compounds both enable and conditions the vast array of nitrogen biologies. This book provides a chemocentric approach to both the inorganic and organic chemical biology of nitrogen. Following an introduction to nitrogen trivalency the book progresses through the logic of inorganic nitrogen metabolism and organic nitrogen metabolites to nitrogen proteomics with an integrative approach to understanding the role of nitrogen in its many biologic roles. Authored by a renowned scientist and educator, this book is ideal for researchers in chemical biology and nitrogen metabolism and will be of particular interest to advanced students and postgraduates in biochemistry and chemical biology.

Chemistry Education

Chemical Physics and Quantum Chemistry

Research, Policy and Practice

About-Face

The Chemistry of Molecular Imaging

Good Chemistry

Many projects in recent years have applied context-based learning and engagement tools to the fostering of long-term student engagement with chemistry. While empirical evidence shows the positive effects of context-based learning approaches on students' interest, the long-term effects on student engagement have not been sufficiently highlighted up to now. Edited by respected chemistry education researchers, and with contributions from practitioners across the world, Engaging Learners with Chemistry sets out the approaches that have been successfully tested and implemented according to different criteria, including informative, interactive, and participatory engagement, while also considering citizenship and career perspectives. Bringing together the latest research in one volume, this book will be useful for chemistry teachers, researchers in chemistry education and professionals in the chemical industry seeking to attract students to careers in the chemical sector.

Covering all the fundamentals of modern imaging methodologies, including their techniques and application within medicine and industry, The Chemistry of Molecular Engineering focuses primarily on the chemistry of probes and imaging agents, as well as chemical methodology for labelling and bioconjugation. Written by an interdisciplinary team of experts, this book investigates the chemistry of molecular imaging and helps to educate non-chemists already involved in the area of molecular imaging. It addresses all the major modalities and techniques, such as MRI, positron emission tomography, single photon emission computed tomography, ultrasound, and fluorescence/optical imaging.

Trajectory-based formalisms are an intuitively appealing way of describing quantum processes because they allow the use of "classical" concepts. Beginning as an introductory level suitable for students, this two-volume monograph presents (1) the fundamentals and (2) the applications of the trajectory description of basic quantum processes. This second volume is focussed on simple and basic applications of quantum processes such as interference and diffraction of wave packets, tunnelling, diffusion and bound-state and scattering problems. The corresponding analysis is carried out within the Bohmian framework. By stressing its interpretational aspects, the book leads the reader to an alternative and complementary way to better understand the underlying quantum dynamics.

"... designed for the... HSC Chemistry Syllabus in NSW. The new editions improve on an already well respected series, and add a number of new features to make teaching and learning in Chemistry even easier" --Publisher's website.

Historical Indicators

Biological Occurrence and Biosynthesis, Synthesis and Chemistry

Chemistry Contexts 2 Lab Manual

Analysing Data, Looking for Patterns and Making Deductions

Paperback and Cd-rom

Transforming Teacher Education Through the Epistemic Core of Chemistry

Fully revised and updated content matching new Cambridge International Examinations 9701 syllabus for first examination in 2016. Endorsed by Cambridge International Examinations, this digital edition comprehensively covers all the knowledge and skills students need during the A Level Chemistry course (9701), for first examination in 2016, in a reflowable format, adapting to any screen size or device. Written by renowned experts in Chemistry teaching, the text is written in an accessible style with international learners in mind. Self-assessment questions allow learners to track their progress, and exam-style questions help learners to prepare thoroughly for their examinations. Answers to all the questions from within the Coursebook are provided.

Ein angemessenes Verständnis über Naturwissenschaften stellt eine Schlüsselkomponente naturwissenschaftlicher Grundbildung dar. Für die entsprechende unterrichtliche Gestaltung spielen die Vorstellungen der Lehrkräfte über Naturwissenschaften eine entscheidende Rolle und anwendbares Meta-Wissen gilt als zu erreichende Qualifikation im Lehramtsstudium. Im vorliegenden Forschungsprojekt wird im Rahmen von qualitativen Studien erhoben, welche Vorstellungen Lehramtsstudierende über 'Chemie als Naturwissenschaft' besitzen und wie die Studierenden unterstützt werden können, ein fundiertes Verständnis zu entwickeln und dieses praktisch zu transformieren. Auf Grundlage der Ergebnisse wird ein Modul für die Lehrerbildung entwickelt, das den Weg bereitet, authentisch (über) Chemie zu unterrichten. An adequate understanding about science represents one key component of scientific literacy. Teachers' conceptions about science play a crucial role for the design of appropriate lessons and applicable meta-knowledge is considered as a qualification to be achieved during university teacher education. In this thesis, qualitative studies are conducted to evaluate which pre-conceptions about 'chemistry as a science' teacher students possess and how students can be supported in developing an informed understanding as well as in practically transforming it. On the basis of the results a module for teacher education is developed which paves the way for authentic chemistry teaching.

Chemistry Contexts 1 and 2 and have been designed for the Preliminary and HSC Chemistry Syllabus in NSW. These editions improve on an already well respected series, and add a number of new features to make teaching and learning in Chemistry even easier.

Chemistry text for the new NSW HSC syllabus.

The Tunnel Effect in Chemistry

Concepts and Terminology in Organic Stereochemistry

Handbook of Research on Science Education

Preliminary

Comprehensive Supramolecular Chemistry II

Engaging Learners with Chemistry