2014 Grade 10 Physical Science Exam Papers

The MSME2014 is hosted by Advanced Information Science Research Center (AISRC) and is sponsored by DEStech Publications, Inc., University of East Asia, University of Mysore and Reitaku University. MSME2014 aims to provide an excellent international academic forum for sharing knowledge and results in theory, methodology and applications in the aspects of material science and material engineering. This MSME2014 proceedings tends to collect the up-to-date, comprehensive and worldwide state-of-art knowledge on material science and material engineering, including material composites, ceramic, metal alloy material, polymer material, building materials, environmental friendly material, material performance, etc. All of accepted papers were subjected to strict peer- reviewing by 2–4 expert referees. The papers have been selected for this volume because of quality and the relevance to the conference. We hope this book will not only provide the readers a broad overview of the latest research results, but also provide the readers a valuable summary and reference in these fields.
"What are the benefits and risks for Africa's participation in the globalisation nexus? Remapping Africa in the Global Space is a visionary and interdisciplinary volume that restores Africa's image using a multidisciplinary lens. It incorporates disciplines such as sociology, education, global studies, economics, development studies, political science and philosophy to explore and theorise Africa's reality in the global space and to deconstruct the misperceptions and narratives that often infantilise Africa's internal and international relations. The contributions to this volume are a hybrid of both 'outsider' and 'insider' perspectives that create a balanced critical discourse that can provide 'standard' paradigms that can adequately explain, predict, or prevent Africa's current misperceptions and myths about the African 'crisis' and 'failure' status. The authors provide a holistic, and perhaps, anticolonial and anti-hegemonic perspective that can benefit a wide spectrum of academics, scholars, students, development agents, policy makers in both governmental and non-governmental organisations and engage some alternative analyses and possibilities for socio-politico and economic advancement in Africa. The book provides up-to-date scholarly research on continental trends on various subjects and concerns of paramount importance to globalisation and development in Africa. "The book is brilliant! Remapping Africa in the Global Space: Propositions for Change explores Africa from the perspective of academics specialised in subject matters pertaining to the continent. In this age of globalisation, I find this book invaluable. It is a good read as it dissects analyses and presents issues affecting the continent in an articulate and cogent way. I highly recommend its use in academic institutions!" – Magnus Mfoafo-M'Carthy, Assistant Professor, Lyle S. Hallman Faculty of Social Work; Fellow of Tshepo Institute for the Study of Contemporary Africa, Wilfrid Laurier University, Kitchener, Canada "More than anything else, Remapping Africa in the Global Space: Propositions for Change speaks to the complex, multifaceted, and interfused character of the development challenges and prospects of Africa. Indeed, few books have examined contemporary Africa as comprehensively and insightfully as this edited volume; it is widely welcomed in the African academic, scholarly and research arena." – Joseph Mensah, Professor of Geography, York University, Toronto "
Bound volumes of the University of Michigan School of Education Staff bulletin.
This publication assesses progress towards Sustainable Development Goal 4 (SDG 4) on education and its ten targets, as well as other related education targets in the SDG agenda. It addresses inclusion in education, drawing attention to all those excluded from education, because of background or ability. The report is motivated by the explicit reference to inclusion in the 2015 Incheon Declaration, and the call to ensure an inclusive and equitable quality education in the formulation of SDG 4, the global goal for education. It reminds us that, no matter what argument may be built to the contrary, we have a moral imperative to ensure every

child has a right to an appropriate education of high quality.

This volume, covering metals and minerals, contains chapters on approximately 90 commodities. In addition, this volume has chapters on mining and quarrying trends and on statistical surveying methods used by Minerals Information, plus a statistical summary.

Bringing together international research on nature of science (NOS) representations in science textbooks, the unique analyses presented in this volume provides a global perspective on NOS from elementary to college level and discusses the practical implications in various regions across the globe. Contributing authors highlight the similarities and differences in NOS representations and provide recommendations for future science textbooks. This comprehensive analysis is a definitive reference work for the field of science education.

There is no shortage of articles and books exploring women's underrepresentation in science. Everyone is interested--academics, politicians, parents, high school girls (and boys), women in search of college majors, administrators working to accommodate women's educational interests; the list goes on. But one thing often missing is an evidence-based examination of the problem, uninfluenced by personal opinions, accounts of "lived experiences," anecdotes, and the always-encroaching inputs of popular culture. This is why this special issue of Frontiers in Psychology can make a difference. In it, a diverse group of authors and researchers with even more diverse viewpoints find themselves united by their empirical, objective approaches to understanding women's underrepresentation in science today. The questions considered within this special issue span academic disciplines, methods, levels of analysis, and nature of analysis; what these article share is their scholarly, evidence-based approach to understanding a key issue of our time.

The twelfth edition of the EFA Global Monitoring Report marking the 2015 deadline for the six goals set at the World Education Forum in Dakar, Senegal, in 2000 provides a considered and comprehensive accounting of global progress. As the international community prepares for a new development and education agenda, this report takes stock of past achievements and reflects on future challenges. There are many signs of notable advances. The pace towards universal primary education has quickened, gender disparity has been reduced in many countries and governments are increasing their focus on making sure children receive an education of good quality. However, despite these efforts, the world failed to meet its overall commitment to Education for All. Millions of children and adolescents are still out of school, and it is the poorest and most disadvantaged who bear the brunt of this failure to reach the EFA targets.

Global interest in indigenous studies has been rapidly growing as researchers realize the importance of understanding the impact indigenous communities can have on the economy, development, education, and more. As the use, acceptance, and popularity of indigenous knowledge increases, it is crucial to explore how this community-based knowledge provides deeper insights, understanding, and influence on such things as decision making and problem solving. Indigenous Studies: Breakthroughs in Research and Practice examines the politics, culture, language, history, socio-economic development, methodologies, and contemporary experiences of indigenous peoples from around the world, as well as how contemporary issues impact these indigenous communities on a local, national, and global scale. Highlighting a range of topics such as local narratives, intergenerational cultural transfer, and ethnicity and

identity, this publication is an ideal reference source for sociologists, policymakers, anthropologists, instructors, researchers, academicians, and graduate-level students in a variety of fields.

Virtual reality is a set of technologies that enables two-way communication, from computer to user and vice versa. In one direction, technologies are used to synthesize visual, auditory, tactile, and sometimes other sensory experiences in order to provide the illusion that practically non-existent things can be seen, heard, touched, or otherwise felt. In the other direction, technologies are used to adequately record human movements, sounds, or other potential input data that computers can process and use. This book contains six chapters that cover topics including definitions and principles of VR, devices, educational design principles for effective use of VR, technology education, and use of VR in technical and natural sciences.

This book explores the impact of the socio-historical, political, and economic environment in South Africa, both during and after Apartheid. During this time, the South African education system demonstrated an interest in a specific type of knowledge, which Koopman refers to as ‘a science of government’. This ‘science of government’ leaves the learners with a blurred understanding of science that is disconnected from external nature and human nature, and is presented as a series of abstract concepts and definitions. The book also investigates the dialectical tensions between the science curriculum and the role of the teacher as an active implementer of the curriculum. The book draws on the work of various phenomenological scholars, namely Edmund Husserl, Martin Heidegger, Merleau-Ponty, and Max van Manen to discuss these tensions.

Twenty Years of Education Transformation in Gauteng 1994 to 2014: An Independent Review presents a collection of 15 important essays on different aspects of education in Gauteng since the advent of democracy in 1994. These essays talk to what a provincial education department does and how and why it does these things - whether it be about policy, resourcing or implementing projects. Each essay is written by one or more specialist in the relevant focus area. The book is written to be accessible to the general reader as well as being informative and an essential resource for the specialist reader. It sheds light on aspects of how a provincial department operates and why and with what consequences certain decisions have been made in education over the last 20 turbulent years, both nationally and provincially. There has been no attempt to fit the book's chapters into a particular ideological or educational paradigm, and as a result the reader will find differing views on various aspects of the Gauteng Department of Education's present and past. We leave the reader to decide to what extent the GDE has fulfilled its educational mandate over the last 20 years.

This book highlights recent developments in literacy research in science teaching and learning from countries such as Australia, Brazil, China, Finland, Germany, Hong Kong, New Zealand, Norway, Singapore, Spain, South Africa, Sweden, Taiwan, and the United States. It includes multiple topics and perspectives on the

role of literacy in enhancing science teaching and learning, such as the struggles faced by students in science literacy learning, case studies and evaluations of classroom-based interventions, and the challenges encountered in the science classrooms. It offers a critical and comprehensive investigation on numerous emerging themes in the area of literacy and science education, including disciplinary literacy, scientific literacy, classroom discourse, multimodality, language and representations of science, and content and language integrated learning (CLIL). The diversity of views and research contexts in this volume presents a useful introductory handbook for academics, researchers, and graduate students working in this specialized niche area. With a wealth of instructional ideas and innovations, it is also highly relevant for teachers and teacher educators seeking to improve science teaching and learning through the use of literacy.

This book explores the relationship between the content of chemistry education and the history and philosophy of science (HPS) framework that underlies such education. It discusses the need to present an image that reflects how chemistry developed and progresses. It proposes that chemistry should be taught the way it is practiced by chemists: as a human enterprise, at the interface of scientific practice and HPS. Finally, it sets out to convince teachers to go beyond the traditional classroom practice and explore new teaching strategies. The importance of HPS has been recognized for the science curriculum since the middle of the 20th century. The need for teaching chemistry within a historical context is not difficult to understand as HPS is not far below the surface in any science classroom. A review of the literature shows that the traditional chemistry classroom, curricula, and textbooks while dealing with concepts such as law, theory, model, explanation, hypothesis, observation, evidence and idealization, generally ignore elements of the history and philosophy of science. This book proposes that the conceptual understanding of chemistry requires knowledge and understanding of the history and philosophy of science. “Professor Niaz’s book is most welcome, coming at a time when there is an urgently felt need to upgrade the teaching of science. The book is a huge aid for adding to the usual way - presenting science as a series of mere facts - also the necessary mandate: to show how science is done, and how science, through its history and philosophy, is part of the cultural development of humanity.” Gerald Holton, Mallinckrodt Professor of Physics & Professor of History of Science, Harvard University “In this stimulating and sophisticated blend of history of chemistry, philosophy of science, and science pedagogy, Professor Mansoor Niaz has succeeded in offering a promising new approach to the teaching of fundamental ideas in chemistry. Historians and philosophers of chemistry --- and above all, chemistry teachers --- will find this book full of valuable and highly usable new ideas” Alan Rocke, Case Western Reserve University “This book artfully connects chemistry and chemistry education to the human context in which chemical science is practiced and the historical and philosophical background that illuminates that

practice. Mansoor Niaz deftly weaves together historical episodes in the quest for scientific knowledge with the psychology of learning and philosophical reflections on the nature of scientific knowledge and method. The result is a compelling case for historically and philosophically informed science education. Highly recommended!" Harvey Siegel, University of Miami "Books that analyze the philosophy and history of science in Chemistry are quite rare. 'Chemistry Education and Contributions from History and Philosophy of Science' by Mansoor Niaz is one of the rare books on the history and philosophy of chemistry and their importance in teaching this science. The book goes through all the main concepts of chemistry, and analyzes the historical and philosophical developments as well as their reflections in textbooks. Closest to my heart is Chapter 6, which is devoted to the chemical bond, the glue that holds together all matter in our earth. The chapter emphasizes the revolutionary impact of the concept of the 'covalent bond' on the chemical community and the great novelty of the idea that was conceived 11 years before quantum mechanics was able to offer the mechanism of electron pairing and covalent bonding. The author goes then to describe the emergence of two rival theories that explained the nature of the chemical bond in terms of quantum mechanics; these are valence bond (VB) and molecular orbital (MO) theories. He emphasizes the importance of having rival theories and interpretations in science and its advancement. He further argues that this VB-MO rivalry is still alive and together the two conceptual frames serve as the tool kit for thinking and doing chemistry in creative manners. The author surveys chemistry textbooks in the light of the how the books preserve or not the balance between the two theories in describing various chemical phenomena. This Talmudic approach of conceptual tension is a universal characteristic of any branch of evolving wisdom. As such, Mansoor's book would be of great utility for chemistry teachers to examine how can they become more effective teachers by recognizing the importance of conceptual tension". Sason Shaik Saeree K. and Louis P. Fiedler Chair in Chemistry Director, The Lise Meitner-Minerva Center for Computational Quantum Chemistry, The Hebrew University of Jerusalem, ISRAEL

Twenty Years of Education Transformation in Gauteng 1994 to 2014African Minds

This new edition of the bestselling Handbook of Thermoplastics incorporates recent developments and advances in thermoplastics with regard to materials development, processing, properties, and applications. With contributions from 65 internationally recognized authorities in the field, the second edition features new and updated discussions of several topics, including: Polymer nanocomposites Laser processing of thermoplastic composites Bioplastics Natural fiber thermoplastic composites Materials selection Design and application Additives for thermoplastics Recycling of thermoplastics Regulatory and legislative issues related to health, safety, and the environment The book also discusses state-of-the-art techniques in science and technology as well as

environmental assessment with regard to the impact of thermoplastics. Each chapter is written in a review format that covers: Historical development and commercialization Polymerization and process technologies Structural and phase characteristics in relation to use properties The effects of additives on properties and applications Blends, alloys, copolymers, and composites derived from thermoplastics Applications Giving thorough coverage of the most recent trends in research and practice, the Handbook of Thermoplastics, Second Edition is an indispensable resource for experienced and practicing professionals as well as upper-level undergraduate and graduate students in a wide range of disciplines and industries.

Fitness education is often overlooked for various reasons: no equipment, no weight room, large class size, or lack of professional development. Designing and Teaching Fitness Education Courses provides real solutions for all these issues. This book offers secondary-level physical educators innovative ideas, practical answers, and guidance in implementing fitness education programming that will meet the needs of all students. Designing and Teaching Fitness Education Courses is packed with highly useful tools and resources: 211 instructional photos showing exercises and stretches that require no equipment and are easily adapted for varying abilities 18 pacing guides that form a week-by-week blueprint for implementing a semester-long fitness education course A robust online resource with all 18 pacing guides, as well as a blank template for developing your own; 139 video demonstrations of all the book's exercises and stretches; PowerPoint presentations to show in PE classes, including video demonstrations of the book's exercises and stretches; and teacher aids and student handouts, including assignments, assessments, posters, and a 12-week personal fitness plan Teachers can use the pacing guides to develop a semester-long fitness education course that can be implemented in either a traditional or block schedule. These guides offer objectives, class discussion topics, activities, assessments, and teaching strategies for each week of an 18-week semester. All topics in the guides are aligned with SHAPE America's National Standards and Grade-Level Outcomes for K–12 Physical Education. The authors guide teachers in addressing the following priorities within a fitness education course: social and emotional learning; behavior modification principles and adherence to fitness activities; social cognitive theory; classroom management; student safety; equity, diversity, and inclusion; and social justice. Designing and Teaching Fitness Education Courses also includes a detailed chapter on nutrition education written by internationally recognized sport nutritionist Lisa Dorfman, who provides teachers a wealth of information to integrate into fitness courses. Teachers will learn how to integrate a quality fitness education curriculum into any setting (rural, urban, or suburban) and any learning model (remote, hybrid, or in-person learning). Designing and Teaching Fitness Education Courses is organized into three sections: Part I presents both theoretical and practical knowledge of fitness education; its importance in a standards-based curriculum; pedagogical and

content knowledge considerations; nutrition, wellness, and consumer issues; and the general components of fitness education. Part II focuses on various components of fitness education: flexibility, strength, and cardiorespiratory fitness. This part includes stretching and muscular strength and endurance workouts, illustrated with photos in the book and videos in the online resource. Part III guides readers in enabling students to participate in community fitness and activity events to support the development of lifelong fitness habits. Through Designing and Teaching Fitness Education Courses, teachers will be able to provide appropriate fitness activities that will lead to the elevated health and wellness of students and a greater appreciation for participating in lifelong activities. Note: A code for accessing HKPropel is included with all new print books.

This book is about imaginative approaches to teaching and learning school science. Its central premise is that science learning should reflect the nature of science, and therefore be approached as an imaginative/creative activity. As such, the book can be seen as an original contribution of ideas relating to imagination and creativity in science education. The approaches discussed in the book are storytelling, the experience of wonder, the development of ‘romantic understanding’, and creative science, including science through visual art, poetry and dramatization. However, given the perennial problem of how to engage students (of all ages) in science, the notion of ‘aesthetic experience’, and hence the possibility for students to have more holistic and fulfilling learning experiences through the aforementioned imaginative approaches, is also discussed. Each chapter provides an in-depth discussion of the theoretical background of a specific imaginative approach (e.g., storytelling, ‘wonder-full’ science), reviews the existing empirical evidence regarding its role in the learning process, and points out its implications for pedagogy and instructional practices. Examples from physical science illustrating its implementation in the classroom are also discussed. In distinguishing between ‘participation in a science activity’ and ‘engagement with science ideas per se’, the book emphasizes the central role of imaginative engagement with science content knowledge, and thus the potential of the recommended imaginative approaches to attract students to the world of science.

In spring 2011 the National Academies of Sciences, Engineering, and Medicine produced a report outlining the next decade in planetary sciences. That report, titled Vision and Voyages for Planetary Science in the Decade 2013-2022, and popularly referred to as the "decadal survey," has provided high-level prioritization and guidance for NASA's Planetary Science Division. Other considerations, such as budget realities, congressional language in authorization and appropriations bills, administration requirements, and cross-division and cross-directorate requirements (notably in retiring risk or providing needed information for the human program) are also necessary inputs to how NASA develops its planetary science program. In 2016 NASA asked the National

Academies to undertake a study assessing NASA's progress at meeting the objectives of the decadal survey. After the study was underway, Congress passed the National Aeronautics and Space Administration Transition Authorization Act of 2017 which called for NASA to engage the National Academies in a review of NASA's Mars Exploration Program. NASA and the Academies agreed to incorporate that review into the midterm study. That study has produced this report, which serves as a midterm assessment and provides guidance on achieving the goals in the remaining years covered by the decadal survey as well as preparing for the next decadal survey, currently scheduled to begin in 2020.

This two-volume set (CCIS 905 and CCIS 906) constitutes the refereed proceedings of the Second International Conference on Advances in Computing and Data Sciences, ICACDS 2018, held in Dehradun, India, in April 2018. The 110 full papers were carefully reviewed and selected from 598 submissions. The papers are centered around topics like advanced computing, data sciences, distributed systems organizing principles, development frameworks and environments, software verification and validation, computational complexity and cryptography, machine learning theory, database theory, probabilistic representations.

This book discusses how to improve high school students' understanding of research methodology based on alternative interpretations of data, role of controversies, creativity and the scientific method, in the context of the oil drop experiment. These aspects form an important part of the nature of science (NOS). The study reported in this volume is is based on a reflective, explicit and activity-based approach to teaching nature of science (NOS) that can facilitate high school students' understanding of how scientists elaborate theoretical frameworks, design experiments, report data that leads to controversies and finally with the collaboration of the scientific community a consensus is reached. Most students changed their perspective and drew concept maps in which they emphasized the creative, accumulative, controversial nature of science and the scientific method.

Under pressure and support from the federal government, states have increasingly turned to indicators based on student test scores to evaluate teachers and schools, as well as students themselves. The focus thus far has been on test scores in those subject areas where there is a sequence of consecutive tests, such as in mathematics or English/language arts with a focus on grades 4-8. Teachers in these subject areas, however, constitute less than thirty percent of the teacher workforce in a district. Comparatively little has been written about the measurement of achievement in the other grades and subjects. This volume seeks to remedy this imbalance by focusing on the assessment of student achievement in a broad range of grade levels and subject areas, with particular attention to their use in the evaluation of teachers and schools in all. It addresses traditional end-of-course tests, as well as alternative measures such

as portfolios, exhibitions, and student learning objectives. In each case, issues related to design and development, psychometric considerations, and validity challenges are covered from both a generic and a content-specific perspective. The NCME Applications of Educational Measurement and Assessment series includes edited volumes designed to inform research-based applications of educational measurement and assessment. Edited by leading experts, these books are comprehensive and practical resources on the latest developments in the field. The NCME series editorial board is comprised of Michael J. Kolen, Chair; Robert L. Brennan; Wayne Camara; Edward H. Haertel; Suzanne Lane; and Rebecca Zwick.

The primary purpose of this book is to provide science teacher educators with exemplars of professional development programs designed to prepare school teachers to effectively help language learners in science classrooms simultaneously gain language proficiency and conceptual understanding. To this end, this book examines seventeen science teacher preparation programs that span a wide variety of grade levels (elementary, middle, and secondary), countries (Italy, Luxemburg, Spain, UK, and US), and linguistic contexts (English as a Second Language, English as a Foreign Language, trilingual classrooms, and teaching deaf children science through sign language). The book is divided into three main parts. Each part consists of chapters that illustrate a common, cross-cutting theme in science teacher preparation in content-based second language acquisition, namely pre-service teacher preparation, in-service teacher preparation, and international perspectives. Each part provides many insights on the similarities and differences in the professional development approaches used to prepare science teaching with varied amounts of instructional experience help students in different parts of the world overcome linguistic barriers while simultaneously learning concepts central to science. Bringing together researchers from various academic backgrounds (science education, TESOL, and Applied Linguistics), attention is given to varied facets of the intersection of science and language learning in the specific context of school teacher preparation.

This book offers a meso-level description of demographics, science education, and science teacher education. Representing all 13 Canadian jurisdictions, the book provides local insights that serve as the basis for exploring the Canadian system as a whole and function as a common starting point from which to identify causal relationships that may be associated with Canada’s successes. The book highlights commonalities, consistencies, and distinctions across the provinces and territories in a thematic analysis of the 13 jurisdiction-specific chapters. Although the analysis indicates a network of policy and practice issues warranting further consideration, the diverse nature of Canadian science education makes simple identification of causal relationships elusive. Canada has a reputation for strong science achievement. However, there is currently limited literature on science education in Canada at the general level or in

specific areas such as Canadian science curriculum or science teacher education. This book fills that gap by presenting a thorough description of science education at the provincial/territorial level, as well as a more holistic description of pressing issues for Canadian science education.

These proceedings represent the work of researchers participating in the 10th International Conference on e-Learning (ICEL 2015) which is being hosted this year by the College of the Bahamas, Nassau on the 25-26 June 2015. ICEL is a recognised event on the International research conferences calendar and provides a valuable platform for individuals to present their research findings, display their work in progress and discuss conceptual advances in the area of e-Learning. It provides an important opportunity for researchers and managers to come together with peers to share their experiences of using the varied and expanding range of e-Learning available to them. With an initial submission of 91 abstracts, after the double blind, peer review process there are 41 academic Research papers and 2 PhD papers Research papers published in these Conference Proceedings. These papers come from some many different countries including: Australia, Belgium, Brazil, Canada, China, Germany, Greece, Hong Kong, Malaysia, Portugal, Republic of Macedonia, Romania, Slovakia, South Africa, Sweden, United Arab Emirates, UK and the USA. A selection of the best papers – those agreed by a panel of reviewers and the editor will be published in a conference edition of EJEL (the Electronic Journal of e-Learning www.ejel.com). These will be chosen for their quality of writing and relevance to the Journal's objective of publishing papers that offer new insights or practical help into the application e-Learning.

There has been a growth in the use, acceptance, and popularity of indigenous knowledge. High rates of poverty and a widening economic divide is threatening the accessibility to western scientific knowledge in the developing world where many indigenous people live. Consequently, indigenous knowledge has become a potential source for sustainable development in the developing world. The Handbook of Research on Theoretical Perspectives on Indigenous Knowledge Systems in Developing Countries presents interdisciplinary research on knowledge management, sharing, and transfer among indigenous communities. Providing a unique perspective on alternative knowledge systems, this publication is a critical resource for sociologists, anthropologists, researchers, and graduate-level students in a variety of fields.

Encouraging the participation of girls and women in science, technology, engineering and mathematics (STEM) remains as vital today as it was in the 1970s. ... hence, the sub-title: "A Never Ending Story." This volume is about ongoing advocacy on behalf of the future workforce in fields that lie on the cutting edge of society's future. Acknowledging that deeply embedded beliefs about social and academic entitlement take generations to overcome, the editors of this volume forge forward in the knowledge that these chapters will resonate with readers and that those in positions of access will learn more about how to

provide opportunities for girls and women that propel them into STEM fields. This volume will give the reader insight into what works and what does not work for providing the message to girls and women that indeed STEM fields are for them in this second decade of the 21st century. Contributions to this volume will connect to readers at all levels of STEM education and workforce participation. Courses that address teaching and learning in STEM fields as well as courses in women's studies and the sociology of education will be enhanced by accessing this volume. Further, students and scholars in STEM fields will identify with the success stories related in some of these chapters and find inspiration in the ways their own journeys are reflected by this volume.

This handbook presents the state of the art of quantitative methods and models to understand and assess the science and technology system. Focusing on various aspects of the development and application of indicators derived from data on scholarly publications, patents and electronic communications, the individual chapters, written by leading experts, discuss theoretical and methodological issues, illustrate applications, highlight their policy context and relevance, and point to future research directions. A substantial portion of the book is dedicated to detailed descriptions and analyses of data sources, presenting both traditional and advanced approaches. It addresses the main bibliographic metrics and indexes, such as the journal impact factor and the h-index, as well as altmetric and webometric indicators and science mapping techniques on different levels of aggregation and in the context of their value for the assessment of research performance as well as their impact on research policy and society. It also presents and critically discusses various national research evaluation systems. Complementing the sections reflecting on the science system, the technology section includes multiple chapters that explain different aspects of patent statistics, patent classification and database search methods to retrieve patent-related information. In addition, it examines the relevance of trademarks and standards as additional technological indicators. The Springer Handbook of Science and Technology Indicators is an invaluable resource for practitioners, scientists and policy makers wanting a systematic and thorough analysis of the potential and limitations of the various approaches to assess research and research performance.

Broad Exposure to Science and Technology (BEST2019) is a conference program on engineering science which took place on August 7-8, 2019 in Bali, Indonesia. The conference was organized by the Engineering Faculty of University of Sultan Ageng, UNTIRTA, Indonesia, and supported by UTC Compiègne France, Alliance Sorbonne Universities France. The Conference provided a setting for discussing recent developments in materials science, metallurgy, biomaterials, and chemical technologies. Results of this Conference will be useful and interesting for many researchers and engineers all over the world.

The 2014 International Conference on Energy and Power Engineering

(EPE2014), will be held on April 26–27, 2014, in Hong Kong, China. The aim of this international convention is to bring together experts and scholars from around the world and offer them a chance to share the latest research results in the field of Energy and Power Engineering. We all know that over the past few decades, a great change has happened in the field of the environment technology, and the science technology is growing faster and faster. In order to keep up with the daily changing situation, we have sent invitations to experts, scholars and other people who have devoted himself in related fields, and it is a great honor to us that most of them have accepted our invitation and supported the EPE2014 with their latest studies. Up till now, we have received over three hundred papers from various countries; this shows that there has been a growing interest in the field of energy and power engineering. Among those papers received, we have eventually chosen about a hundred to be presented and included in this proceeding. These papers generally represented the current research status in this field and the future trend. We sincerely believe that these papers could be valuable to the future work of yours. Finally, on behalf of the committee, I would like to deeply express our gratitude to those who have supported the EPE2014, especially the international experts who helped reviewing papers, the DEStech Publications help publish the conference proceedings, and last but not least, the authors of these inspiring papers. Without the help from these people, EPE2014 would not be as half successful as it is now. Here, welcome to EPE2014 and let’s hope that it will be a great success.
Tim Chou

The Committee's report examines science and mathematics teaching in secondary schools in England, focusing on the following issues: the take-up of science and mathematics at GCSE and A-level, the provision of careers advice to students, problems in the recruitment and retention of teachers, the quality of teaching methods and the role of continuing professional development. The Committee finds that effective science teaching in schools is essential, both in order to ensure a satisfactory general level of scientific literacy in society, and to enable the next generation of scientists and engineers to progress into higher education and beyond. It argues that the current examination system forces students to study an excessively narrow range of subjects at too early an age, and it recommends that the Government should reconsider the Tomlinson proposals for a broader diploma-based system for 14-19 year old students based on the International Baccalaureate. This would ensure that students receive a more rounded education and are not made to over-specialise before they are able to see the merits of studying science and mathematics. Concerns are also raised about the shortage of science teachers, particularly specialist physics and chemistry teachers, the quality of careers advice in schools, and the importance of practical science in schools.