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Global Trends 2030 Office of the Director of National Intelligence Council 2017-03-11
This publication covers global megatrends for the next 20 years and how they will affect the United States. This is the fifth installment in the National Intelligence Council's series aimed at providing a framework for thinking about possible futures and their implications. The report is intended to stimulate strategic thinking about the rapid and vast geopolitical changes characterizing the world today and possible global trajectories during the next 15-20 years by identifying critical trends and potential discontinuities. The authors distinguish between megatrends, those factors that will likely occur under any scenario, and game-changers, critical variables whose trajectories are far less certain. NIC 2012-001. Several innovations are included in Global Trends 2030, including: a review of the four previous Global Trends reports, input from academic and other experts around the world, coverage of disruptive technologies, and a chapter on the potential trajectories for the US role in the international system and the possible the impact on future international relations. Table of Contents: Introduction 1 Megatrends 6 Individual Empowerment 8 Poverty Reduction 8 An Expanding Global Middle Class 8 Education and the Gender Gap 10 Role of Communications Technologies 11 Improving Health 11 A MORE CONFLICTED IDEOLOGICAL LANDSCAPE 12 Diffusion of Power 15 THE RISE AND FALL OF COUNTRIES: NOT THE SAME OLD STORY 17 THE LIMITS OF HARD POWER IN THE WORLD OF 2030 18 Demographic Patterns 20 Widespread Aging 20 Shrinking Number of Youthful Countries 22 A New Age of Migration 23 The World as Urban 26 Growing Food, Water, and Energy Nexus 30 Food, Water, and Climate 30 A Brighter Energy Outlook 34 Game-Changers 38 The Crisis-Prone Global Economy 40 The Plight of the West 40 Crunch Time Too for the Emerging Powers 43 A Multipolar Global Economy: Inherently More Fragile? 46 The Governance Gap 48 Governance Starts at Home: Risks and Opportunities 48 INCREASED FOCUS ON EQUALITY AND OPENNESS 53 NEW GOVERNMENTAL FORMS 54 A New Regional Order? 55 Global Multilateral Cooperation 55 The Potential for Increased Conflict 59 INTRASTATE CONFLICT: CONTINUED DECLINE 59 Interstate Conflict: Chances Rising 61 Wider Scope of Regional Instability 70 The Middle East: At a Tipping Point 70 South Asia: Shocks on the Horizon 75 East Asia: Multiple Strategic Futures 76 Europe: Transforming Itself 78 Sub-Saharan Africa: Turning a Corner by 2030? 79 Latin America: More Prosperous but Inherently Fragile 81 The Impact of New Technologies 83 Information Technologies 83 AUTOMATION AND MANUFACTURING TECHNOLOGIES 87 Resource Technologies 90 Health Technologies 95 The Role of the United States 98 Steady US Role 98 Multiple Potential Scenarios for the United States' Global Role 101 Alternative Worlds 107 Stalled Engines 110 FUSION 116 Gini-out-of-the-Bottle 122 Nonstate World 128 Acknowledgements 134 GT2030 Blog References 137 Audience: Appropriate for anyone, from businesses to banks, government agencies to start-ups, the technology sector to the teaching sector, and more. This publication helps anticipate where the world will be: socially, politically, technologically, and culturally over the next few decades. Keywords:

Global Trends 2030 Alternative Worlds, global trends 2030, Global Trends series, National Intelligence Council, global trajectories, global megatrends, geopolitics, geopolitical changes

Essential Rendering David L. Meeker 2006-01-01

***Lymphedema* Byung-Boong Lee 2018-01-10** The second edition of this book serves as a central source of theoretical and practical knowledge to optimize the evaluation and treatment of patients with lymphedema. The book covers all aspects of the disease from anatomical and histological features to diagnosis as well as physical/medical and surgical management of the disease. Updated from the first edition to reflect the substantial progress in diagnostics, medical care and surgical intervention for this patient population, this volume has been reorganized to meet today's practice requirements. It addresses the challenges faced by clinicians in the management of chronic lymphedema enabling them to meet the medical needs of this large patient community. Edited by world leaders in Vascular Medicine and Surgery, this comprehensive volume provides clear, concise background and recommendations in an easy-to-use format. It is a valuable reference tool for clinical practitioners (physicians/nurse practitioners/technicians) who wish to deliver state-of-the-art health care to their patients with lymphatic and venous disorders.

Leong's Manual of Diagnostic Antibodies for Immunohistology Runjan Chetty 2016-11-28 Providing a unique A-Z guide to antibodies for immunohistology, this is an indispensable source for pathologists to ensure the correct application of immunohistochemistry in daily practice. Each entry includes commercial sources, clones, descriptions of stained proteins/epitopes, the full staining spectrum of normal and tumor tissues, staining pattern and cellular localization, the range of conditions of immunoreactivity, and pitfalls of the antibody's immunoprofile, giving pathologists a truly thorough quick-reference guide to sources, preparation and applications of specific antibodies. Appendices provide useful quick-reference tables of antibody panels for differential diagnoses, as well as summaries of diagnostic applications. Expanded from previous editions with over forty new entries, this handbook for diagnostic, therapeutic, prognostic and research applications of antibodies is an essential desktop book for practicing pathologists as well as researchers, residents and trainees.

***Dysphagia* Julie A. Y. Cichero 2006-07-11** This book offers a concise, readable explanation of the theory of dysphagia and bridges that with material on clinical application. Covering both adult and paediatric swallowing assessment, treatment and management, the book will provide clinicians with common clinical presentations of dysphagia and a framework for a problem based learning approach.

Global Trends 2030 National Intelligence Council (U.S.) 2012 This report is intended to stimulate thinking about the rapid and vast geopolitical changes characterizing the world today and possible global trajectories over the next 15 years. As with the NIC's previous Global Trends reports, we do not seek to predict the future, which would be an impossible feat, but instead provide a framework for thinking about possible futures and their implications. In-depth research, detailed modeling and a variety of analytical tools drawn from public, private and academic sources were employed in the production of Global Trends 2030. NIC leadership engaged with experts in nearly 20 countries, from think tanks, banks, government offices and business groups, to solicit reviews of the report.

***Triumphs and Wonders of the 19th Century: The True Mirror of a Phenomenal Era* James P. Boyd 2019-11-22** "Triumphs and Wonders of the 19th Century: The True Mirror of a Phenomenal Era" by James P. Boyd. Published by Good Press. Good Press publishes a wide range of titles that encompasses every genre. From well-known classics & literary fiction and non-fiction to forgotten—or yet undiscovered gems—of world literature, we issue the books that need to be read. Each Good Press edition has been meticulously edited and formatted to boost readability for all e-readers and devices. Our goal is to produce eBooks that are user-friendly and accessible to everyone in a high-quality digital format.

The Australasian Engineer 1956

Managing aquifer recharge UNESCO 2021-11-25

Caring for People who Sniff Petrol Or Other Volatile Substances National Health and Medical Research Council (Australia) 2011 These guidelines provide recommendations that outline the critical aspects of infection prevention and control. The recommendations were developed using the best available evidence and consensus methods by the Infection Control Steering Committee. They have been prioritised as key areas to prevent and control infection in a healthcare facility. It is recognised that the level of risk may differ according to the different types of facility and therefore some recommendations should be justified by risk assessment. When implementing these recommendations all healthcare facilities need to consider the risk of transmission of infection and implement according to their specific setting and circumstances.

Practical Investment Management Robert A. Strong 2007 PRACTICAL INVESTMENT MANAGEMENT is intended for learners studying investments for the first time. Very practical and applied, it is comprehensive enough for those who plan to become Certified Financial Analysts, but remains user-friendly due to its clarity of explanation and its pedagogy. The book contains all standard topics found in the typical modern investments text, but in addition, several chapters of Practical Investment Management are unique. In addition to being an increasingly important asset class, mortgage-backed securities provide some thought-provoking questions on fixed income valuation. Bob Strong has an engaging writing style along with practical experience making this a very solid, yet very friendly, book for readers.

Industrial & Mining Standard 1926

Orthogeriatrics Paolo Falaschi 2020 This new open access edition supported by the Fragility Fracture Network aims at giving the widest possible dissemination on fragility fracture (especially hip fracture) management and notably in countries where this expertise is sorely needed. It has been extensively revised and updated by the experts of this network to provide a unique and reliable content in one single volume.

Throughout the book, attention is given to the difficult question of how to provide best practice in countries where the discipline of geriatric medicine is not well established and resources for secondary prevention are scarce. The revised and updated chapters on the epidemiology of hip fractures, osteoporosis, sarcopenia, surgery, anaesthesia, medical management of frailty, peri-operative complications, rehabilitation and nursing are supplemented by six new chapters. These include an overview of the multidisciplinary approach to fragility fractures and new contributions on pre-hospital care, treatment in the emergency room, falls prevention, nutrition and systems for audit. The reader will have an exhaustive overview and will gain essential, practical knowledge on how best to manage fractures in elderly patients and how to develop clinical systems that do so reliably.

Pocket Book of Hospital Care for Children World Health Organization 2013 The Pocket Book is for use by doctors nurses and other health workers who are responsible for the care of young children at the first level referral hospitals. This second edition is based on evidence from several WHO updated and published clinical guidelines. It is for use in both inpatient and outpatient care in small hospitals with basic laboratory facilities and essential medicines. In some settings these guidelines can be used in any facilities where sick children are admitted for inpatient care. The Pocket Book is one of a series of documents and tools that support the Integrated Management.

Semi-solid Processing of Alloys David H. Kirkwood 2009-11-27 Semisolid metallurgy (SSM) is now some 37-years-old in terms of time from its conception and first reduction to practice in the laboratory. In the intervening years, there has been a steadily growing body of research on the subject and the beginning of significant industrial applications. The overall field of SSM comprises today a large number of specific process routes, almost all of which fall in the category of either "Rheocasting" or "Thixocasting." The former begins with liquid metal and involves agitation during partial solidification followed by forming. The latter begins with solid metal of suitable structure and

involves heating to the desired fraction solid and forming. Research over the past 37 years, and particularly over the last decade, has provided a detailed picture of process fundamentals and led to a wide range of specific SSM processes and process innovations. Industrial studies and actual production experience are providing a growing picture of the process advantages and limitations. At this time, the conditions for eventual wide adoption of SSM appear favorable, both for nonferrous and ferrous alloys. It must, however, be recognized that major innovations, such as SSM become adopted only slowly by industries where capital costs are high, profit margins are modest, and failure to meet customer commitments carries a high penalty.

Loose Leaf for Case Studies in Finance Kenneth Eades 2017-12-13 Case Studies in Finance links managerial decisions to capital markets and the expectations of investors. At the core of almost all of the cases is a valuation task that requires students to look to financial markets for guidance in resolving the case problem. The focus on value helps managers understand the impact of the firm on the world around it. These cases also invite students to apply modern information technology to the analysis of managerial decisions. The cases may be taught in many different combinations. The eight-part sequence indicated by the table of contents relates to course designs used at the authors' schools. Each part of the casebook suggests a concept module, with a particular orientation.

Parentology Dalton Conley 2014-03-18 An award-winning scientist offers his unorthodox approach to childrearing: "Parentology is brilliant, jaw-droppingly funny, and full of wisdom...bound to change your thinking about parenting and its conventions" (Amy Chua, author of *Battle Hymn of the Tiger Mother*). If you're like many parents, you might ask family and friends for advice when faced with important choices about how to raise your kids. You might turn to parenting books or simply rely on timeworn religious or cultural traditions. But when Dalton Conley, a dual-doctorate scientist and full-blown nerd, needed childrearing advice, he turned to scientific research to make the big decisions. In *Parentology*, Conley hilariously reports the results of those experiments, from bribing his kids to do math (since studies show conditional cash transfers improved educational and health outcomes for kids) to teaching them impulse control by giving them weird names (because evidence shows kids with unique names learn not to react when their peers tease them) to getting a vasectomy (because fewer kids in a family mean smarter kids). Conley encourages parents to draw on the latest data to rear children, if only because that level of engagement with kids will produce solid and happy ones. Ultimately these experiments are very loving, and the outcomes are redemptive—even when Conley's sassy kids show him the limits of his profession. *Parentology* teaches you everything you need to know about the latest literature on parenting—with lessons that go down easy. You'll be laughing and learning at the same time.

Advances in Experimental Surgery Paulo N. Martins 2017-11 Experimental surgery is an important link for the development in clinical surgery, research and teaching. Experimental surgery was part of the most important surgical discoveries in the past century. Since 1901 nine Nobel Prizes have been awarded to the pioneers had remarkable achievements in the basic or practical surgery. In recent 20 years, experimental surgery has achieved new advances, like laparoscopic and robotic surgery, tissue engineering, and gene therapy which are widely applied in clinic surgery. The present book covers wide experimental surgery in preclinical research models subdivided in two volumes. Volume I introduces surgical basic notions, techniques, and different surgical models involved in basic experimental surgery and review the biomechanical models, ischemia/reperfusion injury models, repair and regeneration models, and organ and tissue transplantation models, respectively. Volume II introduces several specific experimental models such as laparoscopic and bariatric experimental surgical models. The second volume also introduces graft-versus-host disease, and other experimental models. Review the advances and development of recent techniques

such as tissue engineering, organ preservation, wound healing and scarring, gene therapy and robotic surgery. The book documents the enormous volume of knowledge we have acquired in the field of experimental surgery. In this book, we have invited experts from the United States, Canada, France, Germany, China, Japan, Korea, UK, Sweden, Netherland, Hungary and Turkey to contribute 36 chapters in the fields of their expertise. These two volumes are the compilation of basic experimental surgery and updated advances of new development in this field that will be invaluable to surgeons, residents, graduate students, surgical researchers, physicians, immunologists, veterinarians and nurses in surgery.

Integrated Groundwater Management Anthony J Jakeman 2016-08-05 The aim of this book is to document for the first time the dimensions and requirements of effective integrated groundwater management (IGM). Groundwater management is a formidable challenge, one that remains one of humanity's foremost priorities. It has become a largely non-renewable resource that is overexploited in many parts of the world. In the 21st century, the issue moves from how to simply obtain the water we need to how we manage it sustainably for future generations, future economies, and future ecosystems. The focus then becomes one of understanding the drivers and current state of the groundwater resource, and restoring equilibrium to at-risk aquifers. Many interrelated dimensions, however, come to bear when trying to manage groundwater effectively. An integrated approach to groundwater necessarily involves many factors beyond the aquifer itself, such as surface water, water use, water quality, and ecohydrology. Moreover, the science by itself can only define the fundamental bounds of what is possible; effective IGM must also engage the wider community of stakeholders to develop and support policy and other socioeconomic tools needed to realize effective IGM. In order to demonstrate IGM, this book covers theory and principles, embracing: 1) an overview of the dimensions and requirements of groundwater management from an international perspective; 2) the scale of groundwater issues internationally and its links with other sectors, principally energy and climate change; 3) groundwater governance with regard to principles, instruments and institutions available for IGM; 4) biophysical constraints and the capacity and role of hydroecological and hydrogeological science including water quality concerns; and 5) necessary tools including models, data infrastructures, decision support systems and the management of uncertainty. Examples of effective, and failed, IGM are given. Throughout, the importance of the socioeconomic context that connects all effective IGM is emphasized. Taken as a whole, this work relates the many facets of effective IGM, from the catchment to global perspective.

Inquiries Into Human Faculty and Its Development Sir Francis Galton 1907-01-01

Computer Methods in Biomechanics and Biomedical Engineering J. Middleton 1996-03-18 These papers are concerned with new advances and novel solutions in the areas of biofluids, image-guided surgery, tissue engineering and cardiovascular mechanics, implant analysis, soft tissue mechanics, bone remodeling and motion analysis. The contents also feature a special section on dental materials, dental adhesives and orthodontic mechanics. This edition contains many examples, tables and figures, and together with the many references, provides the reader with invaluable information on the latest theoretical developments and applications.

Recent Progress in Slow Sand and Alternative Biofiltration Processes Rolf Gimbel 2006-03-31 Slow sand filtration is typically cited as being the first "engineered" process in drinking-water treatment. Proven modifications to the conventional slow sand filtration process, the awareness of induced biological activity in riverbank filtration systems, and the growth of oxidant-induced biological removals in more rapid-rate filters (e.g. biological activated carbon) demonstrate the renaissance of biofiltration as a treatment process that remains viable for both small, rural communities and major cities. Biofiltration is expected to become even more common in the future as efforts intensify to decrease the presence of disease-causing microorganisms and disinfection by-products in drinking water, to minimize microbial regrowth potential in distribution

systems, and where operator skill levels are emphasized. **Recent Progress in Slow Sand and Alternative Biofiltration Processes** provides a state-of-the-art assessment on a variety of biofiltration systems from studies conducted around the world. The authors collectively represent a perspective from 23 countries and include academics, biofiltration system users, designers, and manufacturers. It provides an up-to-date perspective on the physical, chemical, biological, and operational factors affecting the performance of slow sand filtration (SSF), riverbank filtration (RBF), soil-aquifer treatment (SAT), and biological activated carbon (BAC) processes. The main themes are: comparable overviews of biofiltration systems; slow sand filtration process behavior, treatment performance and process developments; and alternative biofiltration process behaviors, treatment performances, and process developments.

Oh's Intensive Care Manual E-Book Andrew D Bersten 2018-08-15 For nearly 40 years, Oh's Intensive Care Manual has been the quick reference of choice for ICU physicians at all levels of experience. The revised 8th edition maintains this tradition of excellence, providing fast access to practical information needed every day in today's intensive care unit. This bestselling manual covers all aspects of intensive care in sufficient detail for daily practice while keeping you up to date with the latest innovations in the field. Short, to-the-point chapters distill the essential information you need to know for safe, effective care of patients in the ICU. Each topic includes theoretical knowledge, practical methods of treating the condition described, a review of the available evidence, and common pitfalls in treatment and management. Ideal for daily quick reference as well as an efficient review for professional examinations in critical care medicine.

The Pyramids and Temples of Gizeh William Matthew Flinders Petrie 1883

Teaching and Learning Methods in Medicine Shabih Zaidi 2014-10-18 This book considers the evolution of medical education over the centuries, presents various theories and principles of learning (pedagogical and andragogical) and discusses different forms of medical curriculum and the strategies employed to develop them, citing examples from medical schools in developed and developing nations. Instructional methodologies and tools for assessment and evaluation are discussed at length and additional elements of modern medical teaching, such as writing skills, communication skills, evidence-based medicine, medical ethics, skill labs and webinars, are fully considered. In discussing these topics, the authors draw upon the personal experience that they have gained in learning, teaching and disseminating knowledge in many parts of the world over the past four decades. **Medical Education in Modern Times** will be of interest for medical students, doctors, teachers, nurses, paramedics and health and education planners.

The Sailor's Word-book William Henry Smyth 1867

Textbook of Paediatric Emergency Medicine E-Book George Jelinek 2011-12-02 A comprehensive textbook of paediatric emergency medicine for trainee doctors - covers all the problems likely to present to a trainee in the emergency department. Short concise chapters, with key point boxes at the beginning - easy to use for the hard-pressed trainee. Aims to give a consensus approach to assessment and treatment, based on the latest evidence. Highlights areas of controversy.

Case Studies in Finance Robert F. Bruner 1994

Technics and Civilization Lewis Mumford 2010-10-30 Technics and Civilization first presented its compelling history of the machine and critical study of its effects on civilization in 1934—before television, the personal computer, and the Internet even appeared on our periphery. Drawing upon art, science, philosophy, and the history of culture, Lewis Mumford explained the origin of the machine age and traced its social results, asserting that the development of modern technology had its roots in the Middle Ages rather than the Industrial Revolution. Mumford sagely argued that it was the moral, economic, and political choices we made, not the machines that we used, that determined our then industrially driven economy. Equal parts powerful history and polemic criticism, Technics and Civilization was the first comprehensive attempt in English to portray the development of the machine age over the last thousand

years—and to predict the pull the technological still holds over us today. “The questions posed in the first paragraph of Technics and Civilization still deserve our attention, nearly three quarters of a century after they were written.”—Journal of Technology and Culture

Management of Legionella in Water Systems National Academies of Sciences, Engineering, and Medicine 2020-02-20 Legionnaires' disease, a pneumonia caused by the Legionella bacterium, is the leading cause of reported waterborne disease outbreaks in the United States. Legionella occur naturally in water from many different environmental sources, but grow rapidly in the warm, stagnant conditions that can be found in engineered water systems such as cooling towers, building plumbing, and hot tubs. Humans are primarily exposed to Legionella through inhalation of contaminated aerosols into the respiratory system. Legionnaires' disease can be fatal, with between 3 and 33 percent of Legionella infections leading to death, and studies show the incidence of Legionnaires' disease in the United States increased five-fold from 2000 to 2017. Management of Legionella in Water Systems reviews the state of science on Legionella contamination of water systems, specifically the ecology and diagnosis. This report explores the process of transmission via water systems, quantification, prevention and control, and policy and training issues that affect the incidence of Legionnaires' disease. It also analyzes existing knowledge gaps and recommends research priorities moving forward.

The Gastro-Archeologist Jeremy Woodward 2021-02-03 In order to understand common conditions such as coeliac disease and Crohn's disease, one must view the gut in its evolutionary context. This is the novel approach to the gut and its diseases that is adopted in this book. The first part tells the story of the evolution of the gut itself - why it came about and how it has influenced the evolution of animals ever since. The second part focuses on the evolution of immunity and how the layers of immune mechanisms are retained in the gut, resembling the strata revealed in an archeological dig. The final part, 'The Gastro-Archeologist', ties the first two together and highlights how understanding the gut and immune system in their evolutionary context can help us understand diseases affecting them. Ambitious in its scope but telling a unique story from a refreshingly novel perspective, the book offers an informative and enjoyable read. As the story of the gut, immunity and disease unfolds, the author aims to endow readers with the same sense of awe and excitement that the subject evokes in him. Difficult concepts are illustrated using simple and colourful analogies, and the main content is supplemented with anecdotes and unusual and amusing facts throughout the book. The book is intended for anyone with an interest in the gut, its immunity and diseases, ranging from school and college biology and biomedical students, to professionals working in the field, and to patients suffering from intestinal diseases who want to understand more about their conditions.

Management Information Systems Kenneth C. Laudon 2004 Management Information Systems provides comprehensive and integrative coverage of essential new technologies, information system applications, and their impact on business models and managerial decision-making in an exciting and interactive manner. The twelfth edition focuses on the major changes that have been made in information technology over the past two years, and includes new opening, closing, and Interactive Session cases.

Ecopolis Paul F. Downton 2008-11-19 From 2008, for the first time in human history, half of the world's population now live in cities. Yet despite a wealth of literature on green architecture and planning, there is to date no single book which draws together theory from the full range of disciplines - from architecture, planning and ecology - which we must come to grips with if we are to design future cities which are genuinely sustainable. Paul Downton's Ecopolis takes a major step along this path. It highlights the urgent need to understand the role of cities as both agents of change and means of survival, at a time when climate change has finally grabbed world attention, and it provides a framework for designing cities that integrates knowledge - both academic and practical - from a range of relevant disciplines. Identifying key theorists,

practitioners, places and philosophies, the book provides a solid theoretical context which introduces the concept of urban fractals, and goes on to present a series of design and planning tools for achieving Sustainable Human Ecological Development (SHED). Combining knowledge from diverse fields to present a synthesis of urban ecology, the book will provide a valuable resource for students, researchers and practitioners in architecture, construction, planning, geography and the traditional life sciences.

The Essence of Mathematics Through Elementary Problems Alexandre Borovik 2019-06-11

Laboratory Techniques in Rabies World Health Organization 1973

Electrical & Electronics Abstracts 1997

The History and Traditions of Marblehead Samuel Roads 1880 The History and Traditions of Marblehead by Samuel Roads, first published in 1880, is a rare manuscript, the original residing in one of the great libraries of the world. This book is a reproduction of that original, which has been scanned and cleaned by state-of-the-art publishing tools for better readability and enhanced appreciation. Restoration Editors' mission is to bring long out of print manuscripts back to life. Some smudges, annotations or unclear text may still exist, due to permanent damage to the original work. We believe the literary significance of the text justifies offering this reproduction, allowing a new generation to appreciate it.

Modern Control Design Ashish Tewari 2002-04-03 In this book, Tewari emphasizes the physical principles and engineering applications of modern control system design. Instead of detailing the mathematical theory, MATLAB examples are used throughout.

Semi-Solid Processing of Alloys and Composites Shahrooz Nafisi 2020-06-18 Semi-solid metal (SSM) processing, as a viable alternative manufacturing route to those of conventional casting and forging, has not yet been fully exploited despite nearly half a century since its introduction to the metal industry. The slow pace of adopting SSM routes may be due to various reasons, including capital costs, profit margins, and, most importantly, the lack of detailed analysis of various SSM processes in open literature to confidently establish their advantages over more conventional routes. Therefore, the SSM community must disseminate their findings more effectively to generate increased confidence in SSM processes in the eyes of our industrial leaders. As such, we have embarked on the task to invite the leaders in SSM research to share their findings in a Special Issue dedicated to semi-solid processing of metals and composites. SSM processing takes advantage of both forming and shaping characteristics usually employed for liquid and solid materials. In the absence of shear forces, the semi-solid metal has similar characteristics to solids, i.e., easily transferred and shaped; by applying a defined force, the viscosity is reduced and the material flows like a liquid. These unique dual characteristics have made SSM routes attractive alternatives to conventional casting on an industrial scale. With the intention of taking full advantage of SSM characteristics, it is crucial to understand SSM processing, including topics such as solidification and structural evolution, flow behavior through modelling and rheology, new processes and process control, alloy development, and properties in general. This Special Issue focuses on the recent research and findings in the field with the aim of filling the gap between industry and academia, and to shed light on some of the fundamentals of science and technology of semi-solid processing.

Character Samuel Smiles 1879