

materials, research, and the business of additive manufacturing from start-ups to Fortune 500 companies. As an important part of the Women in Science and Engineering book series, the work highlights the contribution of women leaders in additive manufacturing, inspiring women and men, girls and boys to enter and apply themselves to world of 3D printing and be a part of bringing the true potential of 3D printing to fruition. The book features contributions of prominent female engineers, scientists, business and technology leaders in additive manufacturing from academia, industry and government labs. Provides insight into womens contributions to the field of additive manufacturing; Presents information from academia, research, government labs and industry into advances and applications in the rapidly evolving and growing field of 3D printing; Includes applications in industries such as medicine, aerospace, and automotive.

La fabrication additive est constituée de sept familles normalisées de procédés de fabrication par ajout de matière, plus précisément tranchage numérique puis reconstruction physique couche par couche. Contribuant à la 4e révolution industrielle, elle a un impact sur de nombreux métiers. Devenue réalité industrielle dans les années 1990 sous les vocables de « prototypage rapide » puis « outillage rapide » et « fabrication rapide », elle est maintenant appelée « impression 3D ». Cet ouvrage définit ces concepts dans la chaîne numérique du développement rapide de produit et au sein des processus technologiques associés à la fabrication additive. Sont ainsi traités les règles de conception, l'hygiène et la sécurité, les moyens de mesure, des études de cas, l'offre marché... Ce livre est destiné aux ingénieurs en bureau d'études, aux concepteurs et aux designers mais aussi aux makers et à tous les passionnés de ces nouveaux procédés.

This open access book is among the first cross-disciplinary works about Manufacturing 4.0. It includes chapters about the technical, the economic, and the social aspects of this important phenomenon. Together the material presented allows the reader to develop a holistic picture of where the manufacturing industry and the parts of the society that depend on it may be going in the future. Manufacturing 4.0 is not only a technical change, nor is it a purely technically driven change, but it is a societal change that has the potential to disrupt the way societies are constructed both in the positive and in the negative. This book will be of interest to scholars researching manufacturing, technological innovation, innovation management and industry 4.0.

Advanced Machining Processes of Metallic Materials: Theory, Modelling and Applications, Second Edition, explores the metal cutting processes with regard to theory and industrial practice. Structured into three parts, the first section provides information on the fundamentals of machining, while the second and third parts include an overview of the effects of the theoretical and experimental considerations in high-level machining technology and a summary of production outputs related to part quality. In particular, topics discussed include: modern tool materials, mechanical, thermal and tribological aspects of machining, computer simulation of various process phenomena, chip control, monitoring of the cutting state, progressive and hybrid machining operations, as well as practical ways for improving machinability and generation and modeling of surface integrity. This new edition addresses the present state and future development of machining technologies, and includes expanded coverage on machining operations, such as turning, milling, drilling, and broaching, as well as a new chapter on sustainable machining processes. In addition, the book provides a comprehensive description of metal cutting theory and experimental and modeling techniques, along with basic machining processes and their effective use in a wide range of manufacturing applications. The research covered here has contributed to a more generalized vision of machining technology, including not only traditional manufacturing tasks, but also potential (emerging) new applications, such as micro and nanotechnology. Includes new case studies illuminate experimental methods and outputs from different sectors of the manufacturing industry Presents metal cutting processes that would be applicable for various technical, engineering, and scientific levels Includes an updated knowledge of standards, cutting tool materials and tools, new machining technologies, relevant machinability records, optimization techniques, and surface integrity

The Valuation Handbook – U.S. Guide to Cost of Capital, 2011 Essentials Edition includes two sets of valuation data: Data previously published in the 2011 Duff & Phelps Risk Premium Report Data previously published in the Morningstar/Ibbotson 2011 Stocks, Bonds, Bills, and Inflation (SBBI) Valuation Yearbook The Valuation Handbook – 2011 U.S. Essentials Edition includes data through December 31, 2010, and is intended to be used for 2011 valuation dates. The Valuation Handbook – U.S. Guide to Cost of Capital, Essentials Editions are designed to function as historical archives of the two sets of valuation data previously published annually in: The Morningstar/Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Valuation Yearbook from 1999 through 2013 The Duff & Phelps Risk Premium Report from 1999 through 2013 The Duff & Phelps Valuation Handbook – U.S. Guide to Cost of Capital from 2014 The Valuation Handbook – U.S. Essentials Editions are ideal for valuation analysts needing "historical" valuation data for use in: The preparation of carve-out historical financial statements, in cases where historical goodwill impairment testing is necessary Valuing legal entities as of vintage date for tax litigation related to a prior corporate restructuring Tax litigation related to historical transfer pricing policies, etc. The Valuation Handbook – U.S. Essentials Editions are also designed to serve the needs of: Corporate finance officers for pricing or evaluating mergers and acquisitions, raising private or public equity, property taxation, and stakeholder disputes Corporate officers for the evaluation of investments for capital budgeting decisions Investment bankers for pricing public offerings, mergers and acquisitions, and private equity financing CPAs who deal with either valuation for financial reporting or client valuations issues Judges and attorneys who deal with valuation issues in mergers and acquisitions, shareholder and partner disputes, damage cases, solvency cases, bankruptcy reorganizations, property taxes, rate setting, transfer pricing, and financial reporting For more information about Duff & Phelps valuation data resources published by Wiley, please visit www.wiley.com/go/valuationhandbooks.

The transformation of the economy being brought about by Industrie 4.0 is leading to the emergence of highly flexible value networks. Businesses now need to network their production activities both in-house and with the systems of external partners. This in turn requires new forms of cooperation, both nationally and globally. Common norms and standards enabling interoperability between different systems are equally essential. This acatech STUDY analyses the opportunities and challenges for businesses of international cooperation and the current competition to establish norms and standards. It is based on interviews and discussions with more than 150 experts from Germany, China, Japan, South Korea, the US and the UK. Detailed country profiles describe the background situation and Industrie 4.0 status quo in the focus countries. Finally, the study makes a number of recommendations for German actors regarding cooperation with international partners.

Diagnostic Medical Parasitology covers all aspects of human medical parasitology and provides detailed, comprehensive, relevant diagnostic methods in one volume. The new edition incorporates newly recognized parasites, discusses new and improved diagnostic methods, and covers relevant regulatory requirements and has expanded sections detailing artifact material and histological diagnosis, supplemented with color images throughout the text.

C.H. Spurgeon, the "Prince of Preachers," first published in weekly installments over a twenty-year period in the periodical *The Sword and the Trowel*. Originally published in seven volumes all of which are included here.

"CNC programmers and service technicians will find this book a very useful training and reference tool to use in a production environment. Also, it will provide the basis for exploring in great depth the extremely wide and rich field of programming tools that macros truly are."--BOOK JACKET.

Unsaturated Soils: Research and Applications contains 247 papers presented at 6th International Conference on Unsaturated Soils (UNSAT2014, Sydney, Australia, 2-4 July 2014). The two volumes provide an overview of recent experimental and theoretical advances in a wide variety of topics related to unsaturated soil mechanics:- Unsaturated Soil Behavi

The Role of Plant Roots in Crop Production presents the state of knowledge on environmental factors in root growth and development and their effect on the improvement of the yield of annual crops. This book addresses the role of roots in crop production and includes references to numerous annual crops. In addition, it brings together the issues and the state-of-the-art technologies that affect root growth, with comprehensive reviews to facilitate efficient, sustainable, economical, and environmentally responsible crop production. Written for plant scientists, crop scientists, horticulturalists, and soil scientists, plant physiologists, breeders, environmental scientists, agronomists, and undergraduate and graduate students in different disciplines of agricultural science, *The Role of Plant Roots in Crop Production: Addresses root architecture and development dynamics to help users improve crop productivity Emphasizes crop production, plant nutrition, and soil chemistry relative to root growth and functions Covers root morphology, root functions, nutrient and water uptake by roots, root-soil interactions, root-environment interactions, root-microbe interactions, physiology of root crops, and management practices to improve root growth Supports content with experimental results, and additional data is presented with pictures* Increasing food production worldwide has become a major issue in the 21st century. Stagnation in grain yield of important food crops in recent years in developed, as well as developing, countries has contributed to a sharp increase in food prices. Furthermore, higher grain yield will be needed in the future to feed a burgeoning world population with a rising standard of living that requires more grain per capita. Technologies that enhance productivity, ensure environmental safety, and conserve natural resources are required to meet this challenge.

A chilling, fast-moving study of the nuclear weapons plant in the Denver suburbs, told through the experiences of managers, workers, activists, and neighbors who were all so deeply affected by the hazardous plant.

Become more culturally competent in an increasingly diverse world Recent years have seen dramatic changes to several institutions worldwide. Our increasingly interconnected, digitized, and globalized world presents immense opportunities and unique challenges. Modern businesses and schools interact with individuals and organizations from a diverse range of cultural and national backgrounds—increasing the likelihood for miscommunication, errors in strategy, and unintended consequences in the process. This has also spilled into our daily lives and the way we consume information today. Understanding how to navigate these and other pitfalls requires adaptability, nuanced cross-cultural communication, and effective conflict resolution. Use *Your Difference to Make a Difference* provides readers with a skills-based, actionable plan that transforms differences into agents of inclusiveness, connection, and mutual understanding. This innovative and timely guide illustrates how to leverage differences to move beyond unconscious biases, manage a culturally-diverse workplace, create an environment for more tolerant schooling environments, more trusted media, communicate across borders, find and retain diverse talent, and bridge the gap between working locally and expanding globally. Expert guidance on a comprehensive range of topics—teamwork, leadership styles, information sharing, delegation, supervision, giving and receiving feedback, coaching and motivation, recruiting, managing suppliers and customers, and more—helps you manage the essential aspects of international relationships and cultural awareness. This valuable resource contains the indispensable knowledge required to: Develop self-awareness needed to be a cross-cultural communicator Develop content, messaging techniques, marketing plans, and business strategies that translate across cultural borders Help your employees to better understand and collaborate with clients and colleagues from different backgrounds Help teachers build safe environments for students to be themselves Strengthen cross-cultural competencies in yourself, your team, and your entire organization Understand the cultural, economic, and political factors surrounding our world Use *Your Difference to Make a Difference* is a must-have resource for any educator, parent, leader, manager, or team member of an organization that interacts with co-workers and customers from diverse cultural backgrounds.

Lonely because he is the only mouse in the church, Arthur asks all the town mice to join him. Unfortunately the congregation aren't so welcoming. But all is not lost when a robber tries to steal the church candlesticks, the mice foil his plans and win back their home.

Featuring more than 4100 references, *Drug-Induced Liver Disease* will be an invaluable reference for gastroenterologists, hepatologists, family physicians, internists, pathologists, pharmacists, pharmacologists, and clinical toxicologists, and graduate and medical school students in these disciplines.

One of the world's most widely read gynecology texts for nearly 50 years, Speroff 's *Clinical Gynecologic Endocrinology and Infertility* provides a complete explanation of the female endocrine system and offers practical guidance for evaluation and treatment of common disorders. In this fully revised ninth edition, the editorial and author team from Yale School of Medicine have assumed the reins of Dr. Speroff's landmark work, retaining the clear, concise writing style and illustrations that clarify and explain complex concepts. This classic text remains indispensable for students, residents, and clinicians working in reproductive endocrinology and infertility, bringing readers up to date with recent advances that have occurred in this fast-changing field.

A Complete Reference Covering the Latest Technology in Metal Cutting Tools, Processes, and Equipment Metal Cutting Theory and Practice, Third Edition shapes the future of material removal in new and lasting ways. Centered on metallic work materials and traditional chip-forming cutting methods, the book provides a physical understanding of conventional and high-speed machining processes applied to metallic work pieces, and serves as a basis for effective process design and troubleshooting. This latest edition of a well-known reference highlights recent developments, covers the latest research results, and reflects current areas of emphasis in industrial practice. Based on the authors' extensive automotive production experience, it covers several structural changes, and includes an extensive review of computer aided engineering (CAE) methods for process analysis and design. Providing updated material throughout, it offers insight and understanding to engineers looking to design, operate, troubleshoot, and improve high quality, cost effective metal cutting operations. The book contains extensive up-to-date references to both scientific and trade literature, and provides a description of error mapping and compensation strategies for CNC machines based on recently issued international standards, and includes chapters on cutting fluids and gear machining. The authors also offer updated information on tooling grades and practices for machining compacted graphite iron, nickel alloys,

and other hard-to-machine materials, as well as a full description of minimum quantity lubrication systems, tooling, and processing practices. In addition, updated topics include machine tool types and structures, cutting tool materials and coatings, cutting mechanics and temperatures, process simulation and analysis, and tool wear from both chemical and mechanical viewpoints. Comprised of 17 chapters, this detailed study: Describes the common machining operations used to produce specific shapes or surface characteristics Contains conventional and advanced cutting tool technologies Explains the properties and characteristics of tools which influence tool design or selection Clarifies the physical mechanisms which lead to tool failure and identifies general strategies for reducing failure rates and increasing tool life Includes common machinability criteria, tests, and indices Breaks down the economics of machining operations Offers an overview of the engineering aspects of MQL machining Summarizes gear machining and finishing methods for common gear types, and more Metal Cutting Theory and Practice, Third Edition emphasizes the physical understanding and analysis for robust process design, troubleshooting, and improvement, and aids manufacturing engineering professionals, and engineering students in manufacturing engineering and machining processes programs.

This work reviews the current state of the art in metallic microlattice structures, manufactured using the additive manufacturing processes of selective laser melting, electron beam melting, binder jetting and photopolymer wave guides. The emphasis is on structural performance (stiffness, strength and collapse). The field of additively manufactured metallic microlattice structures is fast changing and wide ranging, and is being driven by developments in manufacturing processes. This book takes a number of specific structural applications, viz. sandwich beams and panels, and energy absorbers, and a number of conventional metallic materials, and discusses the use of additive manufactured metallic microlattice structures to improve and enhance these structural performances. Structural performances considered includes such non linear effects as plasticity, material rupture, elastic and plastic instabilities, and impact loading. The specific discussions are put into the context of wider issues, such as the effects of realisation processes, the effects of structural scale, use of sophisticated analysis and synthesis methodologies, and the application of existing (conventional) structural theories. In this way, the specific discussions are put into the context of the emerging general fields of Architected (Architected) Materials and Mechanical Metamaterials.

In just sixty years, Hoffman Estates blossomed from a small bedroom community into the kind of commercial destination that draws commuters of its own. And while it has retained many of the institutions that were present at its inception, its very tradition of committed growth means that every year brings dynamic change. As the Village assumed a crucial role in the recent economic development of the Golden Corridor that runs northwest of Chicago, its leadership has been charged with stewarding expansion without compromising community. Marcos Reynolds traces that ongoing transition through the remarkable people and events that embody its living heritage.

The true, inspiring story and photos of Beauty, the wild bald eagle that made world news when she injured, rescued, and for the first time ever, received a 3D-printed prosthetic beak.

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