

## Aperture 221 Performance Aperture Magazine

Explores the contemporary history of Lebanon, scarred by civil war. Here, the author asks if and when experiences of a guerilla war can ever be documented.

The ocean covers approximately 71% of the Earth's surface, 90% of the biosphere and contains 97% of Earth's water. The Synthetic Aperture Radar (SAR) can image the ocean surface in all weather conditions and day or night. SAR remote sensing on ocean and coastal monitoring has become a research hotspot in geoscience and remote sensing. This book--Progress in SAR Oceanography--provides an update of the current state of the science on ocean remote sensing with SAR. Overall, the book presents a variety of marine applications, such as, oceanic surface and internal waves, wind, bathymetry, oil spill, coastline and intertidal zone classification, ship and other man-made objects' detection, as well as remotely sensed data assimilation. The book is aimed at a wide audience, ranging from graduate students, university teachers and working scientists to policy makers and managers. Efforts have been made to highlight general principles as well as the state-of-the-art technologies in the field of SAR Oceanography.

This book presents the technology of millimetre waves and Terahertz (THz) antennas. It highlights the importance of moderate and high-gain aperture antennas as key devices for establishing point-to-point and point-to-multipoint radio links for far-field and near-field applications, such as high data-rate communications, intelligent transport, security imaging, exploration and surveillance systems. The book provides a comprehensive overview of the key antenna technologies developed for the mm wave and THz domains, including established ones – such as integrated lens antennas, advanced 2D and 3D horn antennas, transmit and reflect arrays, and Fabry-Perot antennas – as well as emerging metasurface antennas for near-field and far-field applications. It describes the pros and cons of each antenna technology in comparison with other available solutions, a discussion supplemented by practical examples illustrating the step-by-step implementation procedures for each antenna type. The measurement techniques available at these frequency ranges are also presented to close the loop of the antenna development cycle. In closing, the book outlines future trends in various antenna technologies, paving the way for further developments. Presenting content originating from the five-year ESF research networking program 'Newfocus' and co-authored by the most active and highly cited research groups in the domain of mm- and sub-mm-wave antenna technologies, the book offers a valuable guide for researchers and engineers in both industry and academia.

Includes a foreword by Major General David A. Rubenstein. From the editor: "71F, or "71 Foxtrot," is the AOC (area of concentration) code assigned by the U.S. Army to the specialty of Research Psychology. Qualifying as an Army research psychologist requires, first of all, a Ph.D. from a research (not clinical) intensive graduate psychology program. Due to their advanced education, research psychologists receive a direct commission as Army officers in the Medical Service Corps at the rank of captain. In terms of numbers, the 71F AOC is a small one, with only 25 to 30 officers serving in any given year. However, the

71F impact is much bigger than this small cadre suggests. Army research psychologists apply their extensive training and expertise in the science of psychology and social behavior toward understanding, preserving, and enhancing the health, well being, morale, and performance of Soldiers and military families. As is clear throughout the pages of this book, they do this in many ways and in many areas, but always with a scientific approach. This is the 71F advantage: applying the science of psychology to understand the human dimension, and developing programs, policies, and products to benefit the person in military operations. This book grew out of the April 2008 biennial conference of U.S. Army Research Psychologists, held in Bethesda, Maryland. This meeting was to be my last as Consultant to the Surgeon General for Research Psychology, and I thought it would be a good idea to publish proceedings, which had not been done before. As Consultant, I'd often wished for such a document to help explain to people what it is that Army Research Psychologists "do for a living." In addition to our core group of 71Fs, at the Bethesda 2008 meeting we had several brand-new members, and a number of distinguished retirees, the "grey-beards" of the 71F clan. Together with longtime 71F colleagues Ross Pastel and Mark Vaitkus, I also saw an unusual opportunity to capture some of the history of the Army Research Psychology specialty while providing a representative sample of current 71F research and activities. It seemed to us especially important to do this at a time when the operational demands on the Army and the total force were reaching unprecedented levels, with no sign of easing, and with the Army in turn relying more heavily on research psychology to inform its programs for protecting the health, well being, and performance of Soldiers and their families."

GaN is considered the most promising material candidate in next-generation power device applications, owing to its unique material properties, for example, bandgap, high breakdown field, and high electron mobility. Therefore, GaN power device technologies are listed as the top priority to be developed in many countries, including the United States, the European Union, Japan, and China. This book presents a comprehensive overview of GaN power device technologies, for example, material growth, property analysis, device structure design, fabrication process, reliability, failure analysis, and packaging. It provides useful information to both students and researchers in academic and related industries working on GaN power devices. GaN wafer growth technology is from Enkris Semiconductor, currently one of the leading players in commercial GaN wafers. Chapters 3 and 7, on the GaN transistor fabrication process and GaN vertical power devices, are edited by Dr. Zhihong Liu, who has been working on GaN devices for more than ten years. Chapters 2 and 5, on the characteristics of polarization effects and the original demonstration of AlGaIn/GaN heterojunction field-effect transistors, are written by researchers from Southwest Jiaotong University. Chapters 6, 8, and 9, on surface passivation, reliability, and package technologies, are edited by a group of researchers from the Southern University of Science and Technology of China.

Training Circular (TC) 3-22.9 / FM 3-22.9 "Rifle and Carbine," provides Soldiers with the critical information for their rifle or carbine and how it functions, its capabilities, the capabilities of the optics and ammunition, and the application of the functional elements of the shot process.

Describing a field that has been transformed by the recent availability of data from a new generation of space and airborne

systems, the authors offer a synthetic geometrical approach to the description of synthetic aperture radar, one that addresses physicists, radar specialists, as well as experts in image processing.

This book covers recent advances in image processing and imaging sciences from an optimization viewpoint, especially convex optimization with the goal of designing tractable algorithms. Throughout the handbook, the authors introduce topics on the most key aspects of image acquisition and processing that are based on the formulation and solution of novel optimization problems. The first part includes a review of the mathematical methods and foundations required, and covers topics in image quality optimization and assessment. The second part of the book discusses concepts in image formation and capture from color imaging to radar and multispectral imaging. The third part focuses on sparsity constrained optimization in image processing and vision and includes inverse problems such as image restoration and denoising, image classification and recognition and learning-based problems pertinent to image understanding. Throughout, convex optimization techniques are shown to be a critically important mathematical tool for imaging science problems and applied extensively. *Convex Optimization Methods in Imaging Science* is the first book of its kind and will appeal to undergraduate and graduate students, industrial researchers and engineers and those generally interested in computational aspects of modern, real-world imaging and image processing problems.

The fields of computer vision and image processing are constantly evolving as new research and applications in these areas emerge. Staying abreast of the most up-to-date developments in this field is necessary in order to promote further research and apply these developments in real-world settings. *Computer Vision: Concepts, Methodologies, Tools, and Applications* is an innovative reference source for the latest academic material on development of computers for gaining understanding about videos and digital images. Highlighting a range of topics, such as computational models, machine learning, and image processing, this multi-volume book is ideally designed for academicians, technology professionals, students, and researchers interested in uncovering the latest innovations in the field.

*The Optical Unconscious* is a pointed protest against the official story of modernism and against the critical tradition that attempted to define modern art according to certain sacred commandments and self-fulfilling truths. The account of modernism presented here challenges the vaunted principle of "vision itself." And it is a very different story than we have ever read, not only because its insurgent plot and characters rise from below the calm surface of the known and law-like field of modernist painting, but because the voice is unlike anything we have heard before. Just as the artists of the optical unconscious assaulted the idea of autonomy and visual mastery, Rosalind Krauss abandons the historian's voice of objective detachment and forges a new style of writing in this book: art history that insinuates diary and art theory, and that has the gait and tone of fiction. *The Optical Unconscious* will be deeply vexing to modernism's standard-bearers, and

to readers who have accepted the foundational principles on which their aesthetic is based. Krauss also gives us the story that Alfred Barr, Meyer Shapiro, and Clement Greenberg repressed, the story of a small, disparate group of artists who defied modernism's most cherished self-descriptions, giving rise to an unruly, disruptive force that persistently haunted the field of modernism from the 1920s to the 1950s and continues to disrupt it today. In order to understand why modernism had to repress the optical unconscious, Krauss eavesdrops on Roger Fry in the salons of Bloomsbury, and spies on the toddler John Ruskin as he amuses himself with the patterns of a rug; we find her in the living room of Clement Greenberg as he complains about "smart Jewish girls with their typewriters" in the 1960s, and in colloquy with Michael Fried about Frank Stella's love of baseball. Along the way, there are also narrative encounters with Freud, Jacques Lacan, Georges Bataille, Roger Caillois, Gilles Deleuze, and Jean-François Lyotard. To embody this optical unconscious, Krauss turns to the pages of Max Ernst's collage novels, to Marcel Duchamp's hypnotic Rotoreliefs, to Eva Hesse's luminous sculptures, and to Cy Twombly's, Andy Warhol's, and Robert Morris's scandalous decoding of Jackson Pollock's drip pictures as "Anti-Form." These artists introduced a new set of values into the field of twentieth-century art, offering ready-made images of obsessional fantasy in place of modernism's intentionality and unexamined compulsions. This memoir of Michelle Dunn Marsh's life and work as a book designer, cultural producer, and publisher unfolds through photographs drawn from the author's collection (featuring many prints gifted to her from projects, or obtained through trade), and notes on her formative encounters with some of American photography's master practitioners over the last twenty-five years. Portraits of her by Stephen Shore, Larry Fink, Sylvia Plachy, Will Wilson, and others punctuate a loosely chronological narrative exploring the author's evolution of seeing, the influences of family, education, geographies, mentors, and photography itself on that process, and her commitment to the printed book as a vessel of future histories.

Words Without Pictures was originally conceived of by curator Charlotte Cotton as a means of creating spaces for thoughtful and urgent discourse around current issues in photography. Every month for a year, beginning in November 2007, an artist, educator, critic, art historian, or curator was invited to contribute a short, un-illustrated, and opinionated essay about an aspect of photography that, in his or her view, was either emerging or in the process of being rephrased. Each piece was available on the Words Without Pictures website for one month and was accompanied by a discussion forum focused on its specific topic. Over the course of its month-long life, each essay received both invited and unsolicited responses from a wide range of interested parties: students, photographers active in the commercial sector, bloggers, critics, historians, artists of all kinds, educators, publishers, and photography enthusiasts alike all coming together to consider the issues at hand. All of these essays, responses, and other provocations are gathered together in

a volume designed by David Reinfurt of Dexter Sinister. Previously issued as a print-on-demand title, Aperture is pleased to present Words Without Pictures to the trade for this first time as part of the Aperture Ideas series.

This issue of Aperture considers the natural world in the age of climate change, extreme weather, and dramatically politicized landscapes.

Powerful portraits from the 1960s "Black Is Beautiful" movement Accessible fusion of fashion, art, and social history The first book on this influential African American photographer, now being widely recognized

This is the first book to fully review the Mexican health system, its organization and governance, health financing, health care provision, health reforms and health system performance. The book is based on the most recent data and focuses on the three main components that constitute Mexico's health system: 1) employment-based social insurance programs, 2) public assistance services for the uninsured, and 3) a private sector composed of service providers, insurers, and pharmaceutical and medical device manufacturers and distributors.

In Peter Read Miller on Sports Photography, the 30-year Sports Illustrated veteran photographer takes you into the action of many of his most iconic shots, relating the stories behind the photos of some of the world's greatest athletic events, including the Olympics and the Super Bowl. Discussing the circumstances surrounding particular shots, Peter shares observations of the athletes themselves, and provides tips and techniques for sports photographers of all levels looking to capture great photos of football, track and field, gymnastics, and swimming, as well as dynamic portraits of athletes. Unlike photo collections by other greats of sports photography, this book seamlessly interweaves the images and the fascinating stories behind them with photographic instruction, while giving you an inside look at what it's like to work at the nation's leading sports publication. Beautifully illustrated with images from the Olympics, football, and portrait sessions with professional athletes, this book offers a rich and inspiring experience for sports photographers, sports fans, and Sports Illustrated readers.

Synthetic aperture radar (SAR) is a well-known remote sensing technique, but conventional single-antenna SAR is inherently limited by the minimum antenna area constraint. Although there are still technical issues to overcome, multi-antenna SAR offers many benefits, from improved system gain to increased degrees-of-freedom and system flexibility. Multi-Antenna Synthetic Aperture Radar explores the potential and challenges of using multi-antenna SAR in microwave remote sensing applications. These applications include high-resolution imaging, wide-swath remote sensing, ground moving target indication, and 3-D imaging. The book pays particular attention to the signal processing aspects of various multi-antenna SAR from a top-level system perspective. Explore Recent Extensions of Synthetic Aperture Radar Systems The backbone of the book is a series of innovative microwave remote sensing approaches developed by the author. Centered around multi-antenna SAR imaging, these approaches address specific challenges and potential problems in future microwave remote sensing. Chapters examine single-input multiple-output (SIMO) multi-antenna SAR, including azimuth and elevation multi-antenna SAR, and multiple-input multiple-output (MIMO) SAR. The book details the corresponding system scheme, signal models, time/phase/spatial synchronization methods, and high-precision imaging algorithms. It also investigates their potential applications. Introductory Tutorials and Novel Approaches in Multi-Antenna SAR Imaging Rigorous and self-contained, this is a unique reference for researchers and industry professionals working with microwave remote sensing, SAR imaging, and radar signal processing. In addition to novel approaches, the book also presents tutorials that serve as an introduction to multi-antenna SAR imaging for those who are new to the field.

"... collection of photographs assembled around a particular theme: in each image, the gaze of the subject is averted, the face obscured or

the eyes firmly closed. The pictures present a catalog of anti-portraiture, characterized at first glance by what its subjects conceal, not by what the camera reveals. Amassed over the course of thirty years by New York collector W. M. Hunt, the collection includes works by masters such as Richard Avedon, Diane Arbus, Imogen Cunningham, William Klein, Robert Mapplethorpe, and Robert Frank as well as lesser-known artists and vernacular images." --book jacket.

Photography does more than simply represent the world. It acts in the world, connecting people to form relationships and shaping relationships to create communities. In this beautiful book, Margaret Olin explores photography's ability to "touch" us through a series of essays that shed new light on photography's role in the world. Olin investigates the publication of photographs in mass media and literature, the hanging of exhibitions, the posting of photocopied photographs of lost loved ones in public spaces, and the intense photographic activity of tourists at their destinations. She moves from intimate relationships between viewers and photographs to interactions around larger communities, analyzing how photography affects the way people handle cataclysmic events like 9/11. Along the way, she shows us James VanDerZee's Harlem funeral portraits, dusts off Roland Barthes's family album, takes us into Walker Evans and James Agee's photo-text *Let Us Now Praise Famous Men*, and logs onto online photo albums. With over one hundred illustrations, *Touching Photographs* is an insightful contribution to the theory of photography, visual studies, and art history.

Compact, fluff-free, full-color guide to getting the most out of Apple's Aperture digital photography software This handy Portable Genius guide is designed to help you avoid hassle, save time, and quickly learn what you need to know to use Apple's Aperture digital photography software effectively—and have fun while you're doing it! In a trim size that fits in your laptop bag, this practical guide gives you tips, tricks, and savvy advice on everything from navigating Aperture's user interface to advanced RAW image processing, publishing albums on the Web, and how to create your own photo book. Provides tips and techniques for the new or most useful features of Apple's Aperture 3 digital photography and digital manipulation program Includes savvy advice and plenty of no-nonsense content in a hip way that is easy to access Covers key tools and topics, including keyboard shortcuts, how to streamline workflows, advanced RAW image processing, and more Features Genius icons throughout the book—smart or innovative ways to handle tasks and save yourself time Learn Aperture in a fun way and get even more out of your Apple digital lifestyle with Aperture 3 Portable Genius.

p.p1 {margin: 0.0px 0.0px 0.0px 0.0px; font: 12.0px Cambria} p.p2 {margin: 0.0px 0.0px 0.0px 0.0px; font: 11.0px Verdana; min-height: 13.0px} p.p3 {margin: 0.0px 0.0px 0.0px 0.0px; font: 12.0px Cambria; min-height: 14.0px} span.s1 {font: 11.0px Verdana} span.Apple-tab-span {white-space:pre}

In this book, X-Pert Corner columnist and workshop mentor Rico Pfisteringer teaches you all about the capabilities of the Fujifilm X series lineup of cameras, which he's discovered through years of in-depth research, experience, and experimentation. No matter which X series camera you own—whether it be the X-T3, X-H1, X-T2, X-Pro2, X100F, X-T20, X-E3, GFX, or any other Fuji X series camera—Rico cuts to the chase and provides a plethora of tips and practical instructions not found in user manuals or anywhere else. With this knowledge, you will be able to take full advantage of your X series camera.

The Fujifilm X series boasts amazing features, but some users may require an adjustment period if they are new to these cameras—even photographers who have been lifetime DSLR shooters. This guide will help you to quickly feel comfortable using your camera so that you can

achieve excellent results.

Rico reveals many hidden features, functions, and procedures, so photographers of every level—beginners, enthusiasts, and experienced pros—will learn new and better ways to use their Fuji X series camera to its full potential. Beyond beneficial practices for all X series shooters, Rico also covers advanced concepts, such as the capabilities of Fujifilm's ISOless sensors with Dual Conversion Gain, and offers solutions for common issues, such as inaccurate focus or RAW conversion artifacts.

Topics covered include:

- Firmware upgrades, lens issues, OIS and IBIS
- Menus shortcuts, Custom Settings, My Menu, Quick Menu, and Fn buttons
- Mirrorless exposure metering
- Maximizing dynamic range
- ISOless photography
- Autofocus settings, challenges, and strategies
- Film simulations, white balance, and JPEG settings
- RAW conversion (internal and external)
- Flash photography
- And much more...

This volume explores the making of Gordon Parks' first photographic essay for Life magazine in 1948, "Harlem Gang Leader". After gaining the trust of one particular group of gang members and their leader, Leonard "Red" Jackson, Parks produced a series

of photographs that are artful, poignant, and, at times, shocking. From this large body of work (Parks made hundreds of negatives) the editors at Life selected twenty-one pictures to print in the magazine, often cropping or enhancing details in the pictures.

*Gordon Parks : The Making of an Argument* traces this editorial process and parses out the various voices and motives behind the production of the picture essay. This volume, together with an exhibition of the same name at the New Orleans Museum of Art (NOMA), considers Parks' photographic practice within a larger discussion about photography as a narrative device. Featuring vintage photographs, original issues of Life magazine, contact sheets, and proof prints, *Gordon Parks : The Making of an Argument* raises important questions about the role of photography in addressing social concerns, its use as a documentary tool, and its function in the world of publishing. The book includes contributions from Susan M Taylor, The Montine McDaniel Freeman Director of the New Orleans Museum of Art ; Péter W Kunhardt, Jr., Executive Director of The Gordon Parks Foundation ; and Irvin Mayfield, Artistic Director of the New Orleans Jazz Orchestra.

*Performing for the camera* examines how the photograph has both documented and developed our understanding of performance since the invention of the photographic medium. It engages with both the serious business of art and performance and the humour and improvisation of posing for the camera. Featuring many of the most compelling and experimental photographers in history, it explores the works by artists such as Yves Klein, Yayoi Kusama, Nadar, Merce Cunningham, Charles Ray, Boris Mikhailov, Samuel Fosso, Cindy Sherman, Keith Arnatt and Masahisa Fukase. Edited by curator Simon Baker, this book provides fresh insight into the inter-relationship between performance and photography. With over 300 illustrations, this is the definitive publication on two of the most popular and intriguing art forms of our time. Exhibition: Tate Modern, London, UK (18.02-12.06.2016).

*Essays on photography and the medium's history and evolving identity.* In *Each Wild Idea*, Geoffrey Batchen explores a wide range of photographic subjects, from the timing of the medium's invention to the various implications of cyberculture. Along the way, he reflects on contemporary art photography, the role of the vernacular in photography's history, and the Australianness of Australian photography. The essays all focus on a consideration of specific photographs—from a humble combination of baby photos and bronzed booties to a masterwork by Alfred Stieglitz. Although Batchen views each photograph within the context of broader social and political forces, he also engages its own distinctive formal attributes. In short, he sees photography as something that is simultaneously material and cultural. In an effort to evoke the lived experience of history, he frequently relies on sheer description as the mode of analysis, insisting that we look right at—rather than beyond—the photograph being discussed. A constant theme throughout the book is the question of photography's past, present, and future identity.

*Snapshot of America at a crucial moment of transition.*

*Mutual Coupling Between Antennas* A guide to mutual coupling between various types of antennas in arrays such as wires, apertures and microstrip patches or antennas co-sited on platforms *Mutual Coupling Between Antennas* explores the theoretical underpinnings of mutual coupling, offers an up-to-date description of the physical effects of mutual coupling for a variety of

antennas, and contains techniques for analysing and assessing its effects. The book puts the topic in historical context, presents an integral equation approach, includes the current techniques, measurement methods, and discusses the most recent advances in the field. With contributions from noted experts on the topic, the book reviews practical aspects of mutual coupling and examines applications that clearly demonstrate where the performance is impacted both positively and negatively. Mutual Coupling Between Antennas contains information on how mutual coupling can be analysed with a wide range of methods from direct computer software using discrete methods, to integral equations and Greens function methods as well as approximate asymptotic methods. This important text: Provides a theoretical background for understanding mutual coupling between various types of antennas Describes the interaction that occurs between antennas, both planned and unplanned Explores a key aspect of arrays in any wireless, radar or sensing system operating at radio frequencies Offers a groundbreaking book on antenna mutual coupling Written for antenna engineers, technical specialists, researchers and students, Mutual Coupling Between Antennas is the first book to examine mutual coupling between various types of antennas including wires, horns, microstrip patches, MIMO antennas, co-sited antennas and arrays in planar or conformal configurations.

In this groundbreaking work, Ariella Azoulay thoroughly revises our understanding of the ethical status of photography. It must, she insists, be understood in its inseparability from the many catastrophes of recent history. She argues that photography is a particular set of relations between individuals and the powers that govern them and, at the same time, a form of relations among equals that constrains that power. Anyone, even a stateless person, who addresses others through photographs or occupies the position of a photograph's addressee, is or can become a member of the citizenry of photography. The crucial arguments of the book concern two groups that have been rendered invisible by their state of exception: the Palestinian noncitizens of Israel and women in Western societies. Azoulay's leading question is: Under what legal, political, or cultural conditions does it become possible to see and show disaster that befalls those with flawed citizenship in a state of exception? *The Civil Contract of Photography* is an essential work for anyone seeking to understand the disasters of recent history and the consequences of how they and their victims are represented.

Langford's *Basic Photography* is a seminal photography text. First published in 1965, it has informed the work and career of many of the world's leading photographers. The new, 9th edition, continues the tradition of its predecessors, reflecting the same comprehensive mix of scholarly and practical information. It covers every aspect of photography, from capture through to output, both digital and analogue. There is an emphasis on explaining the 'how to' of photography, but Langford's *Basic* also includes in-depth coverage of the fundamental principles that govern the art, such as how light behaves, optics, and the shutter. This ensures that the reader comes away with not only a good grasp of photographic technique, but also an in-depth understanding of the fundamentals that will help them to better understand how great photography is made. As such, it functions both as an excellent coursebook for students of photography, and a great primer and reference for amateur enthusiasts. The new edition has been fully updated to reflect dynamic changes in the industry. These changes include: an expansion and overhaul of the information on

digital cameras and digital printing; an emphasis on updating photographs to include a wider range of international work; replacement of many diagrams with photos; overhaul of the analogue sections to give a more modern tone (ie exposure measurement and film and filters with some more dynamic photo illustrations); a fully edited and updated photography timeline. This landmark text is an essential purchase, both for new photographers as an introduction, and for established photographers as an invaluable reference work.

This Snapshots book will teach owners how to take great shots using their new Panasonic GX7 or GM1 camera. Users learn how to create the type of photos that inspired them to buy the camera in the first place. Featuring beautiful images; clear design; and a friendly knowledgeable voice, everything in the book is in service of creating a great image. Starting with the top ten things users needed to know about the camera, photographer Rob Knight carefully guides readers through the operating features. Owners get practical advice from a pro on which settings to use when, great shooting tips, and even end of chapter assignments. The book will also include coverage of shooting video. Both the GX7 and GM1, which have the same sensor and are similar in operation, will be covered. Significant new features: 16MP Live MOS sensor In-body image stabilization (works with any lens) Front and rear control dials Flip-up, 1024 x 768 pixel (2.3M dot equivalent) electronic viewfinder 3-inch tilting LCD 3-level focus peaking 1080 video at 60p/60i/24p in MP4 or AVCHD format Built-in Wi-Fi with NFC Magnesium-alloy frame 1/8000 second max shutter speed, 1/320th flash sync speed Highlight and shadow curve adjustments Built-in pop-up flash The Panasonic GX7 is now available for MSRP \$999 (body only). The Panasonic GM1 is now available for MSRP \$749 (with kit lens)

Computational Photography combines plentiful computing, digital sensors, modern optics, actuators, probes, and smart lights to escape the limitations of traditional film cameras and enables novel imaging applications. This book provides a practical guide to topics in image capture and manipulation methods for generating compelling pictures for graphics, special effects, scene comprehension, and art. The computational techniques discussed cover topics in exploiting new ideas in manipulating optics, illumination, and sensors at time of capture. In addition, the authors describe sophisticated reconstruction procedures from direct and indirect pixel measurements that go well beyond the traditional digital darkroom experience.

This book describes the application of polarimetric synthetic aperture radar to earth remote sensing based on research at the NASA Jet Propulsion Laboratory (JPL). This book synthesizes all current research to provide practical information for both the newcomer and the expert in radar polarimetry. The text offers a concise description of the mathematical fundamentals illustrated with many examples using SAR data, with a main focus on remote sensing of the earth. The book begins with basics of synthetic aperture radar to provide the basis for understanding how polarimetric

SAR images are formed and gives an introduction to the fundamentals of radar polarimetry. It goes on to discuss more advanced polarimetric concepts that allow one to infer more information about the terrain being imaged. In order to analyze data quantitatively, the signals must be calibrated carefully, which the book addresses in a chapter summarizing the basic calibration algorithms. The book concludes with examples of applying polarimetric analysis to scattering from rough surfaces, to infer soil moisture from radar signals.

Modern airborne and spaceborne imaging radars, known as synthetic aperture radars (SARs), are capable of producing high-quality pictures of the earth's surface while avoiding some of the shortcomings of certain other forms of remote imaging systems. Primarily, radar overcomes the nighttime limitations of optical cameras, and the cloud-cover limitations of both optical and infrared imagers. In addition, because imaging radars use a form of coherent illumination, they can be used in certain special modes such as interferometry, to produce some unique derivative image products that incoherent systems cannot. One such product is a highly accurate digital terrain elevation map (DTEM). The most recent (ca. 1980) version of imaging radar, known as spotlight-mode SAR, can produce imagery with spatial resolution that begins to approach that of remote optical imagers. For all of these reasons, synthetic aperture radar imaging is rapidly becoming a key technology in the world of modern remote sensing. Much of the basic 'workings' of synthetic aperture radars is rooted in the concepts of signal processing. Starting with that premise, this book explores in depth the fundamental principles upon which the spotlight mode of SAR imaging is constructed, using almost exclusively the language, concepts, and major building blocks of signal processing. *Spotlight-Mode Synthetic Aperture Radar: A Signal Processing Approach* is intended for a variety of audiences. Engineers and scientists working in the field of remote sensing but who do not have experience with SAR imaging will find an easy entrance into what can seem at times a very complicated subject. Experienced radar engineers will find that the book describes several modern areas of SAR processing that they might not have explored previously, e.g. interferometric SAR for change detection and terrain elevation mapping, or modern non-parametric approaches to SAR autofocus. Senior undergraduates (primarily in electrical engineering) who have had courses in digital signal and image processing, but who have had no exposure to SAR could find the book useful in a one-semester course as a reference.

Electron microscopy has revolutionized our understanding the extraordinary intellectual demands required of the materials by completing the processing-structure-property relationship in order to do the job properly: crystallography, links down to atomistic levels. It now is even possible diffraction, image contrast, inelastic scattering events, and to tailor the microstructure (and meso structure) of materials spectroscopy. Remember, these used to be fields in themselves to achieve specific sets of properties; the extraordinary abilities. Today, one has to understand the fundamentals ties of

modern transmission electron microscopy-TEM of all of these areas before one can hope to tackle significant instruments to provide almost all of the structural, phase, and cant problems in materials science. TEM is a technique of and crystallographic data allow us to accomplish this feat. characterizing materials down to the atomic limits. It must Therefore, it is obvious that any curriculum in modern materials must be used with care and attention, in many cases involving materials education must include suitable courses in electron microscopy teams of experts from different venues. The fundamentals of microscopy. It is also essential that suitable texts be available are, of course, based in physics, so aspiring materials scientists for the preparation of the students and researchers who must exist would be well advised to have prior exposure to, for carry out electron microscopy properly and quantitatively.

This open access book focuses on the practical application of electromagnetic polarimetry principles in Earth remote sensing with an educational purpose. In the last decade, the operations from fully polarimetric synthetic aperture radar such as the Japanese ALOS/PALSAR, the Canadian Radarsat-2 and the German TerraSAR-X and their easy data access for scientific use have developed further the research and data applications at L, C and X band. As a consequence, the wider distribution of polarimetric data sets across the remote sensing community boosted activity and development in polarimetric SAR applications, also in view of future missions. Numerous experiments with real data from spaceborne platforms are shown, with the aim of giving an up-to-date and complete treatment of the unique benefits of fully polarimetric synthetic aperture radar data in five different domains: forest, agriculture, cryosphere, urban and oceans.

This book covers in detail the various aspects of joining materials to form parts. A conceptual overview of rapid prototyping and layered manufacturing is given, beginning with the fundamentals so that readers can get up to speed quickly. Unusual and emerging applications such as micro-scale manufacturing, medical applications, aerospace, and rapid manufacturing are also discussed. This book provides a comprehensive overview of rapid prototyping technologies as well as support technologies such as software systems, vacuum casting, investment casting, plating, infiltration and other systems. This book also: Reflects recent developments and trends and adheres to the ASTM, SI, and other standards Includes chapters on automotive technology, aerospace technology and low-cost AM technologies Provides a broad range of technical questions to ensure comprehensive understanding of the concepts covered

[Copyright: bf8f8687e04bc8dca669965028186564](https://www.aperturemagazine.com/copyright/bf8f8687e04bc8dca669965028186564)