

## Synthesis Digital Library of Engineering and Computer Science

## 使用簡介

## ■ 資料庫簡介：

M&C出版社崛起於2005年，致力於工程學與電腦資訊科學的研究、發展及教育，是一個創新的電子資源，集結來自國外知名大學教授的課堂講義及手稿，讓您身在台灣就可以親受大師的薰陶。內容皆出於專家獨特的見解，並且出版快速，讓讀者獲得比電子期刊更新穎更精闢的內容與分析，頁數介於100頁-200頁，與傳統紙本、電子參考資源、電子期刊或電子專題論文相較下更多了優越的時效性與功能性。

目前Collection 1已完整出版，共有100個titles，2008年將陸續出版Collection 2，預計包含125個titles。

## ■ 資料庫首頁

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②

可選擇瀏覽最新(或即將)出版的title，或按照Series主題瀏覽，或是按照主題小專輯瀏覽

快速搜尋欄位，可直接鍵入關鍵字搜尋

①

可按此瀏覽已出版完成的Collection 1

## ■ 瀏覽方式

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<a href="#">Home</a>	<a href="#">Synthesis</a>	<a href="#">Search</a>	<a href="#">Profile</a>	<a href="#">Access</a>	<a href="#">Author</a>	<a href="#">Help</a>	<a href="#">About</a>
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Quick search:  within:

## Synthesis Digital Library of Engineering and Computer Science

### Complete Collection One

Title 名稱

- [Adaptive Mesh Refinement for Time-Domain Numerical Electromagnetics](#) (Sarris) [Synthesis Lectures on Computational Electromagnetics](#)
- [Advanced Probability Theory for Biomedical Engineers](#) (Enderle/Farden/Krause) [Synthesis Lectures on Biomedical Engineering](#)
- [Antennas with Non-Foster Matching Networks](#) (Aberle/Loepsinger-Romak) [Synthesis Lectures on Antennas](#)
- [Articulation and Intelligibility](#) (Allen) [Synthesis Lectures on Speech and Audio Processing](#)
- [Artificial Organs](#) (Miller) [Synthesis Lectures on Biomedical Engineering](#)
- [Atmel AVR Microcontroller Primer: Programming and Interfacing](#) (Barrett/Pack) [Synthesis Lectures on Digital Circuits & Systems](#)
- [Basic Probability Theory for Biomedical Engineers](#) (Enderle/Farden/Krause) [Synthesis Lectures on Biomedical Engineering](#)
- [Bioinstrumentation](#) (Enderle) [Synthesis Lectures on Biomedical Engineering](#)
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- [A Blossoming Development of Splines](#) (Mann) [Synthesis Lectures on Computer Graphics and Animation](#)
- [Brain-Machine Interface Engineering](#) (Sanchez/Principe) [Synthesis Lectures on Biomedical Engineering](#)
- [Capstone Design Courses: Producing Industry-Ready Biomedical Engineers](#) (Goldberg) [Synthesis Lectures on Biomedical Engineering](#)
- [Chip Multiprocessor Architecture: Techniques to Improve Throughput and Latency](#) (Olukotun, Hammond, Laudon) [Synthesis Lectures on Computer Architecture](#)

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### Synthesis Series

The following is a list of the current Synthesis series and their editors. Title links lead to series descriptions and lists of lectures if available.

#### [Algorithms and Software in Engineering](#)

Andreas Spanias, *Arizona State University*

#### [Antennas](#)

Constantine A. Balanis, *Arizona State University*

#### [Artificial Intelligence and Machine Learning](#)

Ronald Brachman, *Yahoo! Research* and Thomas Dietterich, *Oregon State University*

#### [Biomedical Engineering](#)

John D. Enderle, *University of Connecticut*

#### [Communication Networks](#)

Jean Walrand, *University of California-Berkeley*

#### [Communications](#)

William Tranter, *Virginia Tech*

#### [Computational Electromagnetics](#)

Constantine A. Balanis, *Arizona State University*

編輯者 名稱

主題名稱，可點選進入觀看其下包含哪些title。部分主題尚在建置中。

## ■ 瀏覽功能介紹

假設由上述方式點選一本 title 進入後，頁面如下

### Advanced Probability Theory for Biomedical Engineers Synthesis Lectures on Biomedical Engineering

2006, 108 pages, (doi:10.2200/S00063ED1V01Y200610BME011)

John D. Enderle  
Program Director & Professor of Biomedical Engineering, University of Connecticut

David C. Farden  
Professor of Electrical and Computer Engineering, North Dakota State University

Daniel J. Krause  
Emeritus Professor of Electrical and Computer Engineering, North Dakota State University

#### Abstract

This is the third in a series of short books on probability theory and random processes for biomedical engineers. This book focuses on standard probability distributions commonly encountered in biomedical engineering. The exponential, Poisson and Gaussian distributions are introduced, as well as important approximations to the Bernoulli PMF and Gaussian CDF. Many important properties of jointly Gaussian random variables are presented. The primary subjects of the final chapter are methods for determining the probability distribution of a function of a random variable. We first evaluate the probability distribution of a function of one random variable using the CDF and then the PDF. Next, the probability distribution for a single random variable is determined from a function of two random variables using the CDF. Then, the joint probability distribution is found from a function of two random variables using the joint PDF and the CDF.

The aim of all three books is as an introduction to probability theory. The audience includes students, engineers and researchers presenting applications of this theory to a wide variety of problems—as well as pursuing these topics at a more advanced level. The theory material is presented in a logical manner—developing special mathematical skills as needed. The mathematical background required of the reader is basic knowledge of differential calculus. Pertinent biomedical engineering examples are throughout the text. Drill problems, straightforward exercises designed to reinforce concepts and develop problem solution skills, follow most sections.

[PDF \(853.873 KB\)](#) [PDF Plus \(758.293 KB\)](#)

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#### Authors:

- John D. Enderle
- David C. Farden
- Daniel J. Krause

#### Keywords:

- Probability Theory
- Random Processes
- Engineering Statistics

可利用作者名或文章關鍵字在資料庫中進行快速搜尋

## ■ 搜尋功能介紹

除了在每個頁面上方都有快速搜尋鍵，可直接鍵入關鍵字搜尋之外，也可以按下上方工具列的Search，選擇 Simple 或 Advanced Search

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Synthesis Digital Library of Engineering and Computer Science

- 2008 Best Reference Work Award Synthesis was recently recognized by the ASEE Engineering Library Division - see press release [here](#).

## Simple Search

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Tip: You can select more than one item by holding the CTRL key while clicking.  
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 Synthesis Lectures on Antennas  
 Synthesis Lectures on Artificial Intelligence and Machine Learning

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## Advanced Search

**Advanced search**  
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Enter your search term(s) here and specify the field(s) to search. In any field, use quotation marks to group multiple terms into a single search item. Limit your search to a category or to one or more series in the Series box, below. Using the Time Frame boxes, delimit a range of years.

Authors   
Lecture title   
All

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 Display snippets:  yes  no  
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限定出版時間範圍

搜尋結果是否包含部份摘要

搜尋結果每頁顯示比數

## ■ 搜尋結果頁面

假設我們以 **Power converters** 作為關鍵字，在整個資料庫內容中進行搜尋，搜尋結果畫面如下：

The screenshot shows a search results page for the query "Power converters". The page displays 14 matches found. The search results are listed in a table with columns for checkboxes, item numbers, titles, authors, and publication details. The first four results are:

- 1. **Digital Control in Power Electronics**  
Simone Buso, Paolo Mattavelli  
Synthesis Lectures on Power Electronics Jan 2006, Vol. 1, No. 1: 1-158.  
Abstract | PDF (2049 KB) | PDF Plus | Add to Favorites | Related
- 2. **Power Electronics for Modern Wind Turbines**  
Frede Blaabjerg, Zhe Chen  
Synthesis Lectures on Power Electronics Jan 2006, Vol. 1, No. 1: 1-68.  
Abstract | PDF (3253 KB) | PDF Plus | Add to Favorites | Related
- 3. **Antennas with Non-Foster Matching Networks**  
James T. Aberle, Robert Loepsinger-Romak  
Synthesis Lectures on Antennas Jan 2007, Vol. 2, No. 1: 1-53.  
Abstract | PDF (3133 KB) | PDF Plus (858 KB) | Add to Favorites | Related
- 4. **Microcontrollers Fundamentals for Engineers and Scientists**  
Steven F. Barrett, Daniel J. Pack  
Synthesis Lectures on Digital Circuits and Systems Jan 2006, Vol. 1, No. 1: 1-124.  
Abstract | PDF (4276 KB) | PDF Plus (2219 KB) | Add to Favorites | Related

Annotations on the right side of the page include:

- A box pointing to the search results count: "總共找到幾筆搜尋結果"
- A box pointing to the search query: "Search Results: 14 matches found Search Query: All: Power converters"
- A box pointing to the "Refine Search" section: "回到搜尋頁面，重新修正搜尋條件"
- A box pointing to the "Refine Search" links: "開始一個新的搜尋"
- A box pointing to the "Search within results" section: "在搜尋結果內再加入關鍵字進行搜尋"
- A box pointing to the "Save Search" section: "存取搜尋結果，並可設定 e-mail alert"

