



Local Knowledge Online

As Morgan & Claypool's exclusive reseller serving the corporate market in the United States, Local Knowledge Online offers the [Synthesis Digital Library](#), which provides engineers and scientists with the relevant information required to solve business problems with technical solutions.



Synthesis Digital Library

The [Synthesis Digital Library](#) is a "next generation" eContent solution that synthesizes important research or development topics into current, authoritative content for engineers and computer scientists.

The basic component of the library is a 50- to 100-page "lecture"; a self-contained electronic book that synthesizes an important research or development topic, authored by an expert contributor to the field. Lectures provide more analysis and depth than the typical research journal article as well as being more dynamic and convenient than traditional print or digital handbooks, contributed volumes, and monographs.

Each series is managed by a prominent consulting editor. The editor guides topic and author selection as well as peer review. New series and lectures are added continuously and existing lectures are revised as needed. This makes the [Synthesis Digital Library](#) dynamic in a way that has not been achieved with traditional reference products.

Computer & Information Science

Comprised of Synthesis lectures from series in Artificial Intelligence, Communication Networks, Architecture, Graphics, Human Language Technologies, Information Security, Mobile Computing, and Quantum Computing.

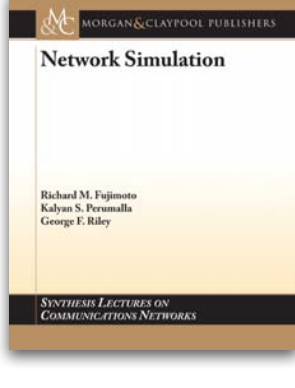
Sample Titles:

- *Chip Multiprocessor Architecture: Techniques to Improve Throughput and Latency* (Olukotun, Hammond, Laudon)
- *Controlling Energy Demand in Mobile Computing Systems* (Ellis)
- *Intelligent Autonomous Robotics: A Robot Soccer Case Study* (Stone)
- *Network Simulation* (Fujimoto/Perumalla/Riley)
- *RFID Explained* (Want)
- *Transactional Memory* (Larus/Rajwar)

Electromagnetics & Antennas

Sample Titles:

- *Fundamentals of Electromagnetics 1: Internal Behavior of Lumped Elements* (Voltmer)
- *Fundamentals of Electromagnetics 2: Quasistatics and Waves* (Voltmer)
- *Implanted Antennas in Medical Wireless Communications* (Rahmat-Samii/Kim)
- *Introduction to Smart Antennas* (Balanis/Ioannides)
- *Reconfigurable Antennas* (Bernhard)
- *Three-Dimensional Integration and Modeling: A Revolution in RF and Wireless Packaging* (Lee/Tentzeris)



The screenshot shows the website interface with navigation tabs: Home, Synthesis, Search, Profile, Access, Author, Help. The main content area displays search results for "Synthesis Lectures on Biomedical Engineering" by John D. Enderle. A detailed view of a lecture is shown, including a title "A Biosystems Approach to Industrial Patient Monitoring and Diagnostic Devices" by Gail Baur. The page includes a description of the lecture series, a list of available lectures, and a detailed view of a specific lecture with its abstract and a figure showing the growth of the medical device industry.

2. A BIOSYSTEMS APPROACH TO INDUSTRIAL PATIENT MONITORING & DIAGNOSTIC DEVICES

2.1. MEDICAL DEVICE INDUSTRY

In the United States, there are approximately 6000 medical device companies, covering 50 clinical specialties. Only about 100 of these companies produce annual revenues over \$100 million. Approximately 72% of these manufacturers employ fewer than 50 people each (Marwick 2000). According to a 2003 survey by the United States Department of Labor, 15,790 engineers were employed in the industry in 2003 (United States Department of Labor 2006).

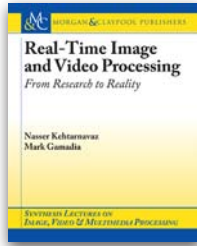
Overall, these companies have been very successful. Three years after regulation began, the U.S. medical device industry shipped \$9.8 billion of goods in 1979. By 2004, these shipments had grown by approximately an order of magnitude to \$93.8 billion. As shown in Figs. 1.1 and 1.2, the mix of devices has not changed dramatically over 25 years. In both 1979 and 2004, surgical/medical instruments and surgical appliances/supplies accounted for the largest shipment percentages. Similarly, in

Signal Processing & Communications

Comprised of Synthesis lectures from series in Communications, Image, Video, and Multimedia Processing, Networks, Mobile Computing, Signal Processing, and Speech & Audio Processing.

Sample Titles:

- *Code Division Multiple Access (CDMA)* (Buehrer)
- *Game Theory for Wireless Engineers* (MacKenzie/DaSilva)
- *Modern Image Quality Assessment* (Wang/Bovik)
- *Real-Time Image and Video Processing* (Kehtarnavaz/Gamadia)
- *RFID Explained* (Want)
- *Super Resolution of Images and Video* (Katsaggelos, Molina, Mateos)



Digital Circuits & General Electrical Engineering

Comprised of Synthesis lectures from series in Digital Circuits & Systems, Engineers, Technology, & Society, and General Electrical Engineering.

Sample Titles:

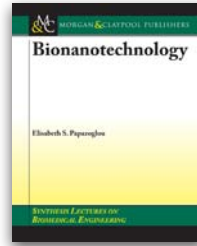
- *Engineering Ethics* (Catalano)
- *High-Speed Digital System Design* (Davis)
- *Learning Programming using MATLAB* (Sayood)
- *Microcontrollers Fundamentals for Engineers and Scientists* (Barrett/Pack)
- *Pragmatic Logic* (Eccles)
- *Understanding Circuits* (Sayood)



Biomedical Engineering

Sample Titles:

- *Bioinstrumentation* (Enderle)
- *BioNanotechnology* (Papazoglou/Parthasarathy)
- *Brain-Machine Interface Engineering* (Sanchez/Principe)
- *Estimation of Cortical Connectivity in Humans: Advanced Signal Processing Techniques* (Astolfi/Babiloni)
- *Fundamentals of Respiratory Sounds and Analysis* (Moussavi)
- *Multimodal Imaging in Neurology: Special Focus on MRI Applications and MEG* (Müller/Kassubek)



Synthesis Complete

Synthesis Complete includes all collections PLUS additional series such as Synthesis Lectures on Energy and the Environment, Synthesis Lectures on Power Electronics, Synthesis Lectures on Technology Management and Entrepreneurship, and much more.

What are the key features and advantages?

The Synthesis Digital Library is:

- **Authoritative** – authors focus on their area of active research.
- **Current** – lectures in fast moving fields are updated frequently. [Email alert service](#) delivers notification of new lectures.
- **Comprehensive** – exhaustively complete since the format can accommodate contributions on even the most specialized topics.
- **Efficient** – enables user to more efficiently find information specific to their interest. Both simple and advanced searching is supported with the ability to personalize and save results.
- **Accessible** - through MARC records, Google, and traditional indexes such as INSPEC and COMPENDEX

Corporate Pricing

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