

CAMBRIDGE

JOURNALS

JFM ARCHIVE

Journal of Fluid Mechanics

Digital Archive
1956 – 1996

*Vital research from
the definitive source*

The JFM Digital Archive
contains every article from the
first 40 years of the journal,
scanned and digitised to the
highest standards.

Please speak to your librarian
about gaining access.

journals.cambridge.org/jfm



**CAMBRIDGE
UNIVERSITY PRESS**

CAMBRIDGE

JOURNALS



**JFM FAST
TRACK HAS
EVOLVED**

JFM RAPIDS

.....

- Faster publication
- Greater visibility for papers
- Freely available to all for the first year

For more information visit

journals.cambridge.org/rapids



**CAMBRIDGE
UNIVERSITY PRESS**

CAMBRIDGE

JOURNALS

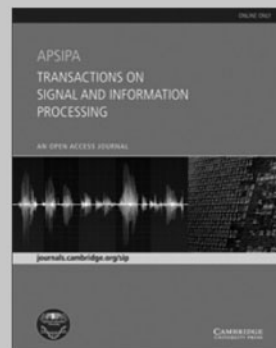
APSIPA Transactions on Signal and Information Processing

Editor-in-Chief

Antonio Ortega, *University of Southern California, USA*

A new Open Access, e-only journal for 2012 launching in partnership with the Asia-Pacific Signal and Information Processing Association (APSIPA).

The Journal will serve as an international forum for signal and information processing researchers across a broad spectrum of research, ranging from traditional modalities of signal processing to emerging areas where either (i) processing reaches higher semantic levels (e.g., from speech recognition to multimodal human behaviour recognition) or (ii) processing is meant to extract information from datasets that are not traditionally considered signals (e.g., mining of Internet or sensor information).



APSIPA Transactions on Signal and Information Processing

is available online at:
<http://journals.cambridge.org/sip>

To subscribe contact Customer Services

in Cambridge:

Phone +44 (0)1223 326070
Fax +44 (0)1223 325150
Email journals@cambridge.org

in New York:

Phone +1 (845) 353 7500
Fax +1 (845) 353 4141
Email
subscriptions_newyork@cambridge.org

Free email alerts

Keep up-to-date with new
material – sign up at

journals.cambridge.org/register

For free online content visit:
<http://journals.cambridge.org/sip>



CAMBRIDGE
UNIVERSITY PRESS

Outstanding Books in Microwave Engineering

The Cambridge RF and Microwave Engineering Series

X-Parameters

Characterization, Modeling,
and Design of Nonlinear RF and
Microwave Components

David E. Root, Jan Verspecht,
Jason Horn, and Mihai Marcu

US\$99.00: Hb: 978-0-521-19323-8: 233 pp.

*Textbook!***High-Frequency
Integrated Circuits**

Sorin Voinigescu

US\$95.00: Hb: 978-0-521-87302-4: 918 pp.

*Textbook!***Microwave and Wireless
Measurement Techniques**

Nuno Borges Carvalho and
Dominique Schreurs

US\$95.00: Hb: 978-1-107-00461-0: 244 pp.

**Modern RF and Microwave
Measurement Techniques**

Edited by Valeria Teppati,
Andrea Ferrero, and
Mohamed Sayed

US\$120.00: Hb: 978-1-107-03641-3: 474 pp.

Transmission Lines

Equivalent Circuits,
Electromagnetic Theory, and Photons

Richard Collier

US\$95.00: 978-1-107-02600-1: 330 pp.

**LCP for Microwave Packages
and Modules**

Anh-Vu H. Pham, Morgan J. Chen,
and Kunia Aihara

US\$127.00: Hb: 978-1-107-00378-1: 266 pp.

**Nonlinear Transistor
Model Parameter
Extraction Techniques**

Edited by Matthias Rudolph,
Christian Fager, and David E. Root

US\$146.00: Hb: 978-0-521-76210-6: 366 pp.

**Nonlinear RF Circuits and
Nonlinear Vector Network
Analyzers**

Interactive Measurement and
Design Techniques

Patrick Roblin

US\$141.00: Hb: 978-0-521-88995-7: 300 pp.

*New in Paperback...***Practical Digital
Wireless Signals**

Earl McCune

US\$75.00: Pb: 978-1-107-67409-7: 434 pp.

**Phase Noise and Frequency
Stability in Oscillators**

Enrico Rubiola

US\$68.00: Pb: 978-0-521-15328-7: 228 pp.

Announcing the
EuMA High Frequency
Technologies Book Series**Wavelet Radio**

Adaptive and Reconfigurable
Wireless Systems Based on Wavelets

Homayoun Nikookar

US\$120.00: Hb: 978-1-107-01780-1: 208 pp.

**Ultra-Wideband RF System
Engineering**

Thomas Zwick, Werner Wiesbeck,
Jens Timmermann,
and Grzegorz Adamiuk

US\$110.00: Hb: 978-1-107-01555-5: 203 pp.

**Plasmonic Nanoelectronics
and Sensing**

Edited by Er-Ping Li
and Hong-Son Chu

US\$125.00: Hb: 978-1-107-02702-2: 264 pp.

Featured Books!

*Textbook!***Electromechanics and MEMS**

Thomas B. Jones
and Nenad G. Nenadic

US\$90.00: Hb: 978-0-521-76483-4: 577 pp.

Modern Small Antennas

Kyohei Fujimoto
and Hisashi Morishita

US\$110.00: Hb: 978-0-521-87786-2: 488 pp.

*New Edition!***Next Generation Wireless LANs
802.11n and 802.11ac**

Second Edition

Eldad Perahia and Robert Stacey

US\$70.00: Hb: 978-1-107-01676-7: 480 pp.

**Compressive Sensing for
Wireless Networks**

Zhu Han, Husheng Li,
and Wotao Yin

US\$110.00: Hb: 978-1-107-01883-9: 304 pp.

Cambridge Wireless Essentials Series

Essentials of Positioning and Location Technology

David Bartlett

US\$65.00: Hb: 978-1-107-00621-8: 212 pp.

Essentials of Mobile Handset Design

Abhi Naha and Peter Whale

US\$69.00: Hb: 978-1-107-01004-8: 249 pp.

Most titles available in electronic format.

Visit ebooks.cambridge.org to view and purchase all books.

Visit www.cambridge.org/engineering to view the
2014 RF and Microwave Engineering online catalog.

Prices subject to change.

www.cambridge.org
@CambUP_engineer
800.872.7423 (North America)
+44 1223 326050 (Europe, Middle East, and Africa)



CAMBRIDGE
UNIVERSITY PRESS

INTERNATIONAL JOURNAL OF

MICROWAVE AND WIRELESS TECHNOLOGIES

Special Issue: IJMWT Special Issue on the 2013 National Microwave Days in France
 Guest Editors: Martine Villegas, Jean-Luc Polleux and Xavier Begaud

CONTENTS

GUEST EDITORIAL

IJMWT Special Issue on the 2013 National Microwave Days in France

Martine Villegas, Jean-Luc Polleux and Xavier Begaud 1

RESEARCH PAPERS

A 10-W S-band class-B GaN amplifier with a dynamic gate bias circuit for linearity enhancement

Pierre Medrel, Audrey Martin, Tibault Reveyrand,
 Guillaume Neveux, Denis Barataud, Philippe Bouysse,
 Jean-Michel Nébus, Luc Lapiere and
 Jean-François Villemazet 3

A new GaN-based high-speed and high-power switching circuit for envelope-tracking modulators

Patrick Augeau, Philippe Bouysse, Audrey Martin,
 Jean Michel Nebus, Raymond Quéré, Luc Lapiere,
 Olivier Jardel and Stéphane Piotrowicz 13

INDUSTRIAL AND ENGINEERING PAPER

A single versatile wideband amplifier from LNA up to MPA

François-Xavier Estagerie, Dominique Langrez,
 Jean-Luc Muraro, Jean-Louis Cazaux and
 Rémy Leblanc 23

RESEARCH PAPERS

A shape optimization library for the design of microwave components

Najib Mahdi, Stephane Bila, Serge Verdeyme,
 Michel Aubourg, Khaled Khoder, Annie Bessaudou,
 Françoise Cosset, Christophe Durousseau,
 Jérôme Puech, Laetitia Estagerie, Damien Pacaud and
 Hervé Leblond 31

Study of porous silicon substrates for the monolithic integration of radiofrequency circuits

Marie Capelle, Jérôme Billoué, Patrick Poveda and
 Gael Gautier 39

Miniature directive antennas

M. Pigeon, C. Delaveaud, L. Rudant and
 K. Belmkaddem 45

A V-band switched-beam transmit-array antenna

José A. Zevallos Luna and Laurent Dussopt 51

Carbon-nanotube-based electrically-short resonant antennas

Pierre Franck, Dominique Baillargeat and
 Beng Kang Tay 57

Automated extraction of device noise parameters based on multi-frequency, source-pull data

Sergio Colangeli, Walter Ciccognani,
 Mirko Palomba and Ernesto Limiti 63

Equivalent circuit model of reliable RF-MEMS switches for component synthesis, fabrication process characterization and failure analysis

Núria Torres Matabosch, Fabio Coccetti,
 Mehmet Kaynak, Beatrice Espana, Bernd Tillack and
 Jean-Louis Cazaux 73

Design and analysis of a high-power radial multi-way combiner

Akhilesh Jain, Alok K. Gupta, Deepak Kumar Sharma,
 Pundlik Rama Hannurkar and Surya Kant Pathak 83

Novel dual-band multistrip monopole antenna with defected ground structure for WLAN/IMT/BLUETOOTH/WIMAX applications

Jaswinder Kaur, Rajesh Khanna and
 Machavaram Kartikeyan 93

Implantable CPW-fed rectangular patch antenna for ISM band biomedical applications

Srinivasan Ashok Kumar and
 Thangavelu Shanmuganatham 101