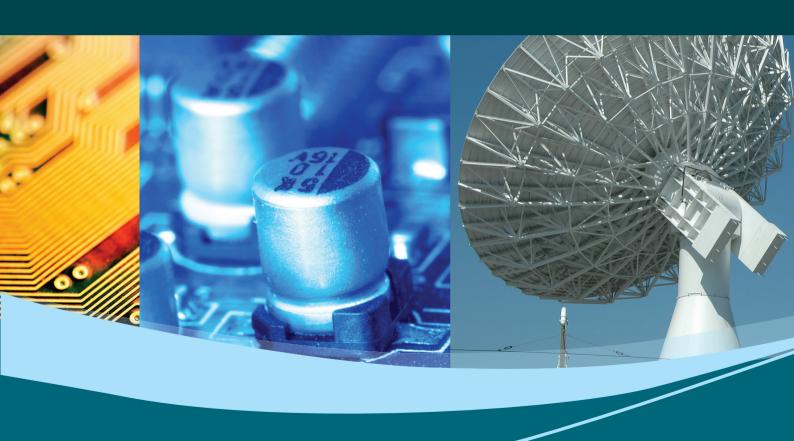
ISSN: 1759-0787

# INTERNATIONAL JOURNAL OF

# MICROWAVE AND WIRELESS TECHNOLOGIES

cambridge.org/mrf





CAMBRIDGE UNIVERSITY PRESS

# INTERNATIONAL JOURNAL OF

# MICROWAVE AND WIRELESS TECHNOLOGIES

#### EDITOR-IN-CHIEF

**Prof. Francisco Medina-Mena,** Professor of Electromagnetism

Department of Electronics & Electromagnetism University of Sevilla Av. Reina Mercedes s/n 41012-Seville, Spain medina@us.es

#### **EDITORIAL BOARD**

**Dr Luigi Boccia**, University of Calabria, Italy **Dr. Eduardo Carrasco**, Universidad Politécnica de Madrid, Spain

**Prof. Paolo Colantonio,** Università di Tor Vergata Roma, Italy

**Prof. Alessandra Costanzo,** University of Bologna, Italy

**Prof. Philippe Ferrari,** IMEP Grenoble, France

**Prof. Gaspare Galati,** Università di Tor Vergata Roma, Italy

**Prof. Alessandro Galli,** Sapienza University of Rome, Italy

**Prof. Antonio García-Pino,** University of Vigo, Spain

**Dr. Anthony Ghiotto,** IMS Laboratory, Talence, France

Dr. J. Sebastián Gómez-Diaz, UC Davis,

**Prof. Roberto Gómez-Garcia,** University of Alcalá, Spain

**Prof. Shiban K Koul,** Indian Institute of Technology Delhi, India

**Prof. Krzysztof S Kulpa,** Warsaw University of Technology, Poland

**Prof. Asher Madjar,** M2Microwaves LLC, Philadelphia, USA and Tel Aviv University, Israel

**Dr. Steve Nightingale,** Cobham, UK **Prof. Marco Pasian,** University of Pavia, Italy

**Dr. Xianming Qing,** Institute for Infocomm Research, Singapore

**Dr. Ruediger Quay,** Fraunhofer Institute Freiburg, Germany

**Prof. Raymond Quéré,** XLIM-University of Limoges, France.

Dr. Fred Schindler, RFMD, USA

**Prof. Dominique Schreurs,** KU Leuwen, Belgium

**Prof. Roberto Sorrentino,** University of Perugia, Italy

**Prof. Almudena Suárez,** Universidad de Cantabria, Spain

**Prof. Luciano Tarricone,** University of Salento, Italy

**Prof. Huei Wang,** NTU, Taiwan

**Dr. Hung-Wei Wu,** Kun Shan University, Taiwan

**Prof. Felix Yanovsky,** National Aviation University, Ukraine

# Scope of the journal

International Journal of Microwave and Wireless Technologies is interdisciplinary and application oriented, providing a platform for the microwave industry. Subjects covered include: applied electromagnetic field theory, components, analogue and mixed-signal circuits, systems, optical-microwave interactions, electromagnetic compatibility, industrial applications, biological effects and medical applications.

## Submission of Manuscripts

All manuscripts should be submitted online at http://mc.manuscriptcentral.com/mrf. Please consult the instructions for authors at http://cambridge.org/mrf

### Subscriptions

International Journal of Microwave and Wireless Technologies (ISSN 1759-0787) is published ten times a year in February, March, April, May, June, July, September, October, November and December. The subscription price (excluding VAT) of Volume 12 (2020) for institutional subscribers is £878 net (US \$1647 in the USA, Canada and Mexico) Members of the European Microwave Association receive free online access to the Journal. Single parts are £101 (US \$189 in the USA, Canada and Mexico). Orders, which must be accompanied by payment, may be sent to a bookseller, subscription agent or direct to the publisher: Cambridge University Press, Journals Fulfilment Dept, UPH, Shaftesbury Road, Cambridge CB2 8BS, UK; or in the USA, Canada and Mexico: Cambridge University Press, Journals Fulfillment Department, 1 Liberty Plaza, Floor 20, New York, NY, 10006, USA. EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Japanese prices for institutions are available from Kinokuniva Company Ltd, P.O. Box 55, Chitose, Tokyo 156, Japan.

# Advertising

For all parts of the world except USA, Canada and Mexico to Journals Advertising: ad\_sales@cambridge.org Address enquiries in the USA, Mexico and Canada only to: journals\_advertising@cup.org

#### Copying

This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of U.S. Copyright law) subject to promotional or commercial purposes. Code 0266–4674/2018. *ISI Tear Sheet Service*, 3501 Market Street, Philadelphia, PA 19104, USA, is authorized to supply single copies of separate articles for private use only.

Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions. For all other use, permission should be sought from Cambridge or the American Branch of Cambridge University Press.

## Internet Access

This journal is included in Cambridge Core and can be found at cambridge.org/mrf. For further information on other Press titles access http://www.cambridge.org

© Cambridge University Press and the European Microwave Association 2020 Cambridge University Press, UPH, Shaftesbury Road, Cambridge CB2 8BS, United Kingdom 1 Liberty Plaza, Floor 20, New York, NY, 10006, USA USA 477 Williamstown Road, Port Melbourne, VIC 3207, Australia Ruiz de Alarcón 13, 28014 Madrid, Spain Dock House, The Waterfront, Cape Town 8001, South Africa