Journal of Integrated Circuits and Systems

Volume 9 • Number 1 • September 2014 • ISSN 1807-1953

Drop of Thermal Contact Resistance between Multi-Layer Graphene and Metals by Laser Annealing V. Ermakov, A. Vaz. A. Alaferdov and S. Moshkalev

Observation of the Two-Sided Read Window on UTBOX SOI 1T-DRAM: Measurement Setup, Numerical and Empirical Results

A. Nissimoff, K. R. A. Sasaki, M. Aoulaiche, J. A. Martino, E. Simoen and C. Claeys

Parasitic Conduction Response to X-ray Radiation in Unstrained and Strained Triple-Gate SOI MuGFETs

F. Teixeira, C. Bordallo, M. Silveira, P. Agopian, J. A. Martino, E. Simoen and C. Claeys

Local Laser Annealing of Contacts Between MWCNTs and Metallic Electrodes J. Silveira, R. Savu, J. Swart, J. M. Filho, A. Gomes and S. Moshkalev

The Roles of the Gate Bias, Doping Concentration, Temperature and Geometry on the Harmonic Distortion of Junctionless Nanowire Transistors Operating in the Linear Regime R. Doria, R. Trevisoli, M. de Souza, M. Estrada, A. Cerdeira and M. A. Pavanello

Love Wave Sensor Based on Thin Film Molecularly Imprinted Polymer: Study of VOCs adsorption H. Hallil, N. O. Aouled, B. Plano, R. Delepee, L. Agrofoglio, C. Dejous and D. Rebiere





www.sbc.org.br/jics www.sbmicro.org.br/jics



The **Journal of Integrated Circuits and Systems** (**JICS**) is a publication from SBMicro – Brazilian Microelectronics Society and SBC – Brazilian Computer Society whose are non-profit scientific societies aiming to foster the microelectronics and computer science teaching, research and development.

Editor-in-chief:

Marcelo Antonio Pavanello, FEI University, Brazil

Co-Editor:

Fernanda Kastensmidt, UFRGS, Brazil

Associate Editors:

Process and Materials

Jacobus Swart, State University of Campinas, Brazil Magali Estrada, CINVESTAV, Mexico Olivier Bonnaud, University of Rennes, France

Devices and Characterization

Cor Claeys, IMEC, Belgium João Antonio Martino, USP, Brazil

Design

Elmar Uwe Kurt Melcher, Federal University of Campina Grande, Brazil Jürgen Becker, Karlsruhe Institute of Technology, Germany Guido Araújo, State University of Campinas, Brazil

Test

Alex Orailoglu, UCSD, USA Michel Renovell, LIRMM, France

Sponsored by:

Brazilian Computer Society Av. Bento Gonçalves, 9500 Porto Alegre, Brazil Caixa Postal 15012 – CEP 91501-970 Brazilian Microelectronics Society Av. Prof. Luciano Gualberto, trav. 3 n. 158 CEP 05508-900, São Paulo, Brazil

JICS - Journal of Integrated Circuits and Systems

Professor Marcelo Antonio Pavanello, Editor
Departament of Electrical Engineering, Centro Universitario da FEI
Av. Humberto de Alencar Castelo Branco, 3972
CEP 09850-901, São Bernardo do Campo - SP – Brazil

Manuscript Preparation:

General:

Editors reserve the right to adjust style to certain standards of uniformity. Original manuscripts are discarded one month after publication unless the Publisher is asked to return original material after use. Please use Word or Word Perfect files for the text of your manuscript.

Structure:

We suggest following this order when typing manuscripts: Title, Authors, Affiliations, Abstract, Keywords, Main text, Acknowledgements, Appendix, References, Figure Captions and then Tables. Please supply figures imported into the text AND also separately as original graphics files. Collate acknowledgements in a separate section at the end of the article and do not include them on the title page, as a footnote to the title or otherwise.

Text Layout:

The manuscript must be typed using double spacing and wide A4 paper (3 cm) margins (Top, Bottom, Left, Right) with 12 pt Times New Roman font size up to 18 pages (maximum). Present tables and figure legends on separate pages at the end of the manuscript. All the manuscript pages must be numbered consecutively.

Abstract:

A self-contained abstract outlining in a single paragraph the aims, scope and conclusions of the paper must be supplied.

Keywords:

Immediately after the abstract, please provide a maximum of six keywords (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible.

Symbols:

As there is considerable variation in nomenclature and unit systems from country to country, authors are required to include a list of symbols, which they have used in their manuscripts, and of the units in which the corresponding qualities are measured. Another possibility is to define the symbols along the manuscript. SI units should be used where possible.

Units

Follow internationally accepted rules and conventions: use the international system of units (SI). If other quantities are mentioned, give their equivalent in SI.

Maths:

Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

References:

All publications cited in the text should be presented in a list of references following the text of the manuscript. Along the text, indicate references by number(s) in square brackets in line with the text.

The papers are submitted online following the link www.sbmicro.org.br/jics.

After acceptance, the author will be notified about the final paper format to be submitted for printing.

Journal of Integrated Circuits and Systems

Volume 9 • Number 2 • September 2014 • ISSN 1807-1953

CONTENTS

Foreword8	5
Drop of Thermal Contact Resistance between Multi-Layer Graphene and Metals by Laser Annealing V. Ermakov, A. Vaz, A. Alaferdov and S. Moshkalev	7
Observation of the Two-Sided Read Window on UTBOX SOI 1T-DRAM: Measurement Setup, Numerical and Empirical Results A. Nissimoff, K. R. A. Sasaki, M. Aoulaiche, J. A. Martino, E. Simoen and C. Claeys	1
Parasitic Conduction Response to X-ray Radiation in Unstrained and Strained Triple-Gate SOI MuGFETs F. Teixeira, C. Bordallo, M. Silveira, P. Agopian, J. A. Martino, E. Simoen and C. Claeys	7
Local Laser Annealing of Contacts Between MWCNTs and Metallic Electrodes J. Silveira, R. Savu, J. Swart, J. M. Filho, A. Gomes and S. Moshkalev10.	3
The Roles of the Gate Bias, Doping Concentration, Temperature and Geometry on the Harmonic Distortion of Junctionless Nanowire Transistors Operating in the Linear Regime R. Doria, R. Trevisoli, M. de Souza, M. Estrada, A. Cerdeira and M. A. Pavanello	0
Love Wave Sensor Based on Thin Film Molecularly Imprinted Polymer: Study of VOCs adsorption H. Hallil, N. O. Aouled, B. Plano, R. Delepee, L. Agrofoglio, C. Dejous and D. Rebiere	8

FOREWORD

In this issue of JICS some of the papers have been selected from the presented at SBMicro2013 (28th Symposium on Microelectronics Technology and Devices), which has been held in Curitiba, Brazil, in 2013. Among the contributions presented at the Symposium, only a few best rated were selected by the JICS Editorial Board and have been invited to submit an extended version to the Journal. These extended papers have passed through the usual reviewing process before acceptance. In addition to the best papers presented at the conference, spontaneous submissions passed through the usual reviewing process and have been accepted as regular papers.

We would like to thank the authors for their effort in preparing these high quality papers, as well as the reviewers for their valuable contribution on paper evaluation and selection, which guarantees the scientific level of this issue. We sincerely hope that JICS readers will enjoy these contributions.

Marcelo Antonio Pavanello

JICS Editor-in-chief

Fernanda Kastensmidt

JICS Co-Editor