**LEMBAR**
**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW***
**KARYA ILMIAH : *PROSIDING* ***

| | | |
|---|---|---|
| Judul Karya Ilmiah (Artikel) | : | Extraction of SPICE Model for Double Gate Vertical MOSFET |
| Nama/Jumlah Penulis | : | **Jatmiko E. Suseno**, Muhammad Taghi Ahmadi, Munawar A. Riyadi, dan Razali Ismail (4) |
| Status Pengusul | : | Penulis pertama/~~penulis ke.....~~ /~~penulis korespondensi **~~ |
| Identitas Makalah | : | a. Judul Prosiding : 2009 Third Asia International Conference on Modelling & Simulation (AMS 2009) |
| | | b. ISBN/ISSN : 978-1-4244-4154-9/2376-1164 |
| | | c. Tahun Terbit, Tempat Pelaksanaan : 2009, Bali, Indonesia DOI:10.1109/AMS.2009.129 |
| | | d. Penerbit/Organiser : IEEE |
| | | e. Alamat repository PT/web prosiding : https://ieeexplore.ieee.org/document/5072084 |
| | | f. Terindeks di (jika ada) : Scopus |
| Kategori Publikasi Jurnal Ilmiah (beri ✓pada kategori yang tepat) | : | ☑ *Prosiding* Forum Ilmiah Internasional<br>☐ Jurnal Ilmiah Nasional Terakreditasi |

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1. **Kesesuaian dan kelengkapan unsur isi jurnal:** Makalah telah ditulis dengan baik, persamaan yang digunakan telah runtut. Bahasa Inggris standard dan mudah dimengerti
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4. **Kelengkapan unsur dan kualitas terbitan:** Unsur-unsur dalam penerbitan sudah baik dan mengikuti standard IEEE. Namun pada penataan daftar pustaka masih kurang baik

$X = 60\% \times 24,2$

$=$

Semarang, 10 Februari 2020
Reviewer 1

Prof. Dr. Muhammad Nur, DEA
NIP. 195711261990011001
Bidang ilmu/Unit kerja : Fisika FSM UNDIP

* dinilai oleh dua Reviewer secara terpisah
**coret yang tidak perlu

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| g. Kecukupan dan kemutahiran data/informasi dan metodologi (30%) | 7,5 | | 7,4 |
| h. Kelengkapan unsur dan kualitas penerbit (30%) | 7,5 | | 7,4 |
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2. **Ruang lingkup dan kedalaman pembahasan:** Lingkup artikel ttg model SPICE pd MOSFET. Hasil kurang telah dibahas dg baik.
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:** Data pendukung yg ada artikel sesuai dg metode yg digunakan. Artikel di duking 10 referensi, namun 5 ref. lama mutakhir < 10 th.
4. **Kelengkapan unsur dan kualitas terbitan:** Kelengkapan unsur penerbit baik. Prosiding pd artikel ini telah terindeks Scopus pada 2019 bkn ada SJR.

Semarang, 7 – 2 – 2020
Reviewer 2

Prof. Dr. Heri Sutanto, MSi
NIP. 197502151998021001
Bidang ilmu/Unit kerja : Fisika FSM UNDIP

* dinilai oleh dua Reviewer secara terpisah
**coret yang tidak perlu

**LEMBAR**
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| d. Kelengkapan unsur dan kualitas penerbit (30%) | 7,4 | 7,4 | |
| **Total = (100%)** | 24,2 | 24,4 | |
| **Nilai untuk Pengusul :** | | | |

Semarang, 2020

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# AMS 2009

## Asia Modelling Symposium 2009

**Third Asia International Conference on Modelling & Simulation**

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# *Certificate of Merit*

*Mr Jatmiko Endro Suseno*

*I am Pleased to confirm that you have attended AMS2009 and presented your paper.*

*I would like to take this opportunity to thank you for your contribution to AMS2009 and look forward to your participation in our future events.*

*Best wishes.*

Nottingham Trent University
School of Science and Technology
Clifton Lane
Nottingham
NG11 8NS

**Professor David Al-Dabass**
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# Document details





Proceedings - 2009 3rd Asia International Conference on Modelling and Simulation, AMS 2009
2009, Article number 5072084, Pages 761-766
2009 3rd Asia International Conference on Modelling and Simulation, AMS 2009; Bandung, Bali; Indonesia; 25 May 2009 through 26 May 2009; Category numberP3648; Code 77516

## Extraction of SPICE model for double gate vertical MOSFET (Conference Paper)

Suseno, J.E.[a,b], Ahmadi, M.T.[a], Riyadi, M.A.[a,c], Ismail, R.[a]

[a]Electrical Engineering Faculty, Universiti Teknologi Malaysia, Malaysia
[b]Physics Department, Diponegoro University, Indonesia
[c]Electrical Engineering Department, Diponegoro University, Indonesia

### Abstract

View references (10)

Vertical MOSFETs device have one important disadvantage, which is higher overlap capacitances such as the separated gate-source and gate-drain parasitic capacitances (CGSO and CGDO), which is known to be most crucial to the high-frequency/speed performance but very hard to extract. In this paper presents parameter extraction techniques to create an extended BSIM model card of vertical p-MOSFETs for circuit simulation with SPICE can be accurately obtained for these overlap capacitances determination. This device was modeled as a subcircuit with any sub elements such as resistors, capacitors and diodes that capture the parasitic effects. The subcircuit was simplified in order to modeling in BSIM easily. The overlap capacitances of vertical p-MOSFET can be determined by using capacitance parameter extraction of quasi static small signal equivalent circuit. The result showed that gate-drain paracitic capacitance ($C_{GDO}$) is larger than gate-source parasitic capacitance ($C_{GSO}$). © 2009 IEEE.

### SciVal Topic Prominence

Topic: MOSFET | Transconductance | Gates

Prominence percentile: 55.159

### Indexed keywords

Engineering uncontrolled terms: Capacitance parameter, Double gate, Gate drain, Overlap capacitance, p-MOSFETs, Parasitic capacitance, Parasitic effect, pMOSFET, Quasi-static, Separated gate, Small signal equivalent circuit, SPICE model, Sub-circuits, Sub-element, Vertical MOSFETs

Engineering controlled terms: Capacitance, Circuit simulation, Heterojunction bipolar transistors, MOSFET devices, Parameter extraction, Simulators

Engineering main heading: SPICE

ISBN: 978-076953648-4
Source Type: Conference Proceeding
Original language: English

DOI: 10.1109/AMS.2009.129
Document Type: Conference Paper
Sponsors: Universitas Katolik Parahyangan,Nottingham Trent University,UKSim,IEEE Computer Society,Asia Modelling and Simulation Society, AMSS

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# 2009 Third Asia International Conference on Modelling & Simulation

# *AMS 2009*

# Table of Contents



## Plenary Abstracts



## TRACK: 01(A) Intelligent Systems

## TRACK: 15(R) Performance Engineering of Computer and Communication Systems



## TRACK: 16(S) Circuits, Sensors, and Devices

## TRACK: 17(T) Supply Chain Simulation

# DNA Computing Models and Practice

**Publisher:** IEEE

Cite This

PDF

Osamu Ono **All Authors**





**Abstract:**
This paper will introduce the theory and practice of DNA-based computing models (DNAbCM). Several models will be provided with the basic tools necessary to understand current research in DNAbCM. Discussion will focus on potential applications to artificial intelligence, scheduling problem, molecular memory and smart machines (or bio-robotics). Following a brief review of DNA structure, an overview of the basic tools from molecular biology utilized in biotechnology (e.g., DNA molecular annealing, ligation, polymerization, restriction enzyme, PCR and POA etc.) will be undertaken. A discussion of the major, basic computational architectures of classical DNA computing models (e.g., Adleman's algorithm for HPP, DNA Chip-based SAT, and etc.) will be provided in each presenting an animation detailing execution of a simple example. Attention will then turn to advanced topics related to molecular memory, hybrid artificial intelligence, in particular, a new semantic network and scheduling smart machine will be presented and implemented on a DNAbCM-inspired semantic model. This discussion on the models and implementations will be undertaken with attention to both theoretical and chemical points of view.

**Published in:** 2009 Third Asia International Conference on Modelling & Simulation

**Date of Conference:** 25-29 May 2009

**INSPEC Accession Number:** 10717249

**Date Added to IEEE *Xplore*:** 12 June 2009

**DOI:** 10.1109/AMS.2009.149

**ISBN Information:**

**Publisher:** IEEE

**ISSN Information:**

**Conference Location:** Bali, Indonesia

This paper will introduce the theory and practice of DNA-based Computing Models (DNAbCM). Several models will be provided with the basic tools necessary to understand current research in DNAbCM. Discussion will focus on potential applications to artificial intelligence, scheduling problem, molecular memory and smart machines (or bio-robotics). Following a brief review of DNA structure, an overview of the basic tools from molecular biology utilized in biotechnology (e.g., DNA molecular annealing, ligation, polymerization, restriction enzyme, PCR and POA etc.) will be undertaken. A discussion of the major, basic computational architectures of classical DNA computing models (e.g., Adleman's algorithm for HPP, DNA Chip-based SAT, and etc.) will be provided in each presenting an animation detailing execution of a simple example. Attention will then turn to advanced topics related to molecular memory, hybrid artificial intelligence, in particular, a new semantic network and scheduling smart machine will be presented and implemented on a DNAbCM-inspired



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Professor Dr. Osamu ONO

Director: Institute of Applied DNA Computing and Control Systems, (IADC & CSL), Meiji University

President: Japan Society for Simulation Technology (JSST)

# Future Cyberspace and 3D Telepresence Collaborative Environments

**Publisher:** IEEE

Cite This

PDF

Eduard Babulak All Authors





**Abstract:**
The ubiquity of current Internet and future cyberspace facilitate creation of very effective and real-time collaborative environment supported with the Telepresence in 3D imaging. The ubiquity of current internet and future cyber-space facilitates creation of very effective and real-time collaborative environment supported with the 3D Telepresence and a new generation of Video Conferencing Technologies. Past decade will be remembered by dynamic developments and innovation in the field of information technologies (IT), communications and ubiquitous Internet technologies. Given the current economic climate, researchers and engineers worldwide are looking for new financially viable software/hardware solutions and platforms for the creation of virtual global corporations. Globalization of world trades open doors to mobility of workers as well as creation of virtual teams of experts and virtual companies bringing together experts from all over the world via 3D Telepresence combined with next generation of Holographic Image Technologies. Due to the ever increasing pressures to save oil and gas, the future transportation may break less air traffic across Atlantic and promote ocean travel bringing us back to glorious times of the Titanic. A trip from New York to London via air takes 7-8 hours. The same trip via Atlantic ferry may take 7-8 days. This would contribute to saving oil/gas and at the same time researchers, engineers, innovators, developers would have 7-8 days free time to dedicate to writing research proposals and work online with other colleagues as if they would never leave their own office and workplace. In support of telemarketing, CISCO has introduced new 3D Telepresense technologies that allow creation of virtual boardrooms where experts from all over the world would be able to conduct Round Table discussions in real-time, while seeing each other in 3D as if they would all be physically present in the same room at the same time. The author will discuss the ...

(View more)

**Published in:** 2009 Third Asia International Conference on Modelling & Simulation

**Date of Conference:** 25-29 May 2009

**INSPEC Accession Number:** 10717250

**Date Added to IEEE *Xplore*:** 12 June 2009

**DOI:** 10.1109/AMS.2009.150

**ISBN Information:**

**Publisher:** IEEE

**ISSN Information:**

**Conference Location:** Bali, Indonesia

The ubiquity of current Internet and future cyberspace facilitate creation of very effective and real-time collaborative environment supported with the Telepresence in 3D imaging. The ubiquity of current internet and future cyber-space facilitates creation of very effective and real-time collaborative environn



sence and a new generation of Video Conferenci be remembered by dynamic developments and innovation in the field of information technologies (IT),

## Authors

Eduard Babulak
University of Vancouver, Canada

Professor Babulak is international scholar, researcher, consultant, educator, professional engineer and polyglot with more than twenty five years of teaching experience and industrial experience as a professional engineer and consultant. Invited Speaker at University of Cambridge, UK in March, 2009. Invited Speaker at MIT, USA in September 2005. He currently holds Visiting Professorships in Vancouver and works as Expert-Evaluator for the European Commission in Brussels. He is Fellow of British Computer Society, Nominated Fellow of the IET, Chair of the IEEE Vancouver Ethics, Professional and Conference Committee, Mentor and Senior member of IEEE and ACM.

# A Proposed Research for Conceptual Modeling of Policy-Based Mobile Agent Groups

**Publisher:** IEEE

Cite This

PDF

Amir Talaei-Khoei ; Pradeep K. Ray ; Nandan Parameswaran **All Authors**





**Abstract:**
Mobile agents are increasingly play significant role in distributed information systems. This article addresses the problem that happens when a mobile agent leaves a group and wants to join another one. Therefore, it has to follow different polices which may have conflicts with its own requirements. The paper studies the problem from cooperative management point of view and goes to the technological level. The multi-disciplinary nature of this problem makes the conceptualization beneficial to build a mutual understanding of the situation and recognize policy conflicts. Our research question specifies how to recognize conflicts between requirements of the agent and policies of locations, where it recently has moved. The paper discusses about a proposed research to build a meta-model for conceptual modeling of this situation that should cover agency, ldquomobility, ldquocooperationrdquo, and ldquopoliciesrdquo.

**Published in:** 2009 Third Asia International Conference on Modelling & Simulation

**Date of Conference:** 25-29 May 2009

**INSPEC Accession Number:** 10703305

**Date Added to IEEE *Xplore*:** 12 June 2009

**DOI:** 10.1109/AMS.2009.74

**ISBN Information:**

**Publisher:** IEEE

**ISSN Information:**

**Conference Location:** Bali, Indonesia

## 1 Introduction

Mobile agent systems present a way of analyzing, designing, and implementing distributed systems. This view offers powerful tools and techniques that have the potential to considerably improve the way in which people conceptualize and implement many types of distributed software. Mobile agents are being used in increasingly wide variety of applications ranging from infrastructures such as network management to some information system implementation technologies. At the same time, policies play a significant role to derive this kin



sually come from management, but regarding to different strategies in different organization, movement from one organization to another one may cause conflicts between polices and requirements of moving entities. Therefore, the problem comes from different fields, which people do not have mutual understanding. Conceptualization helps to fill the gap between cooperative

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# An Immune Bidirectional Regulation-Based Decoupling Control in Single Shift Gas Turbine Plant

**Publisher: IEEE**



Xiang-feng Zhang ; Jun Liu ; Zhi-jie Wang **All Authors**





**Abstract:**
Gas turbine is a complex, strong non-linear and multi-variable coupling pneumatic thermodynamics system. Its typical model in stability studies consists of load-frequency control, temperature control, and acceleration control. A strong coupling relationship exists among three control systems which affect the rotate speed of turbine and the exhaust temperature of turbine. A decoupling control method is proposed inspired by the immune system and its bidirectional regulation mechanism in this paper. The structure of the decoupling controllers is designed and then the decoupling control algorithm is proposed. The decoupling control method is applied to the gas turbine system. The system is regarded as two single-input single-output systems. Finally, some simulation experiments are done to evaluate the control performance and the results show that the method is effective and feasible. The method extends the decoupling control types in the modern control theory.

**Published in:** 2009 Third Asia International Conference on Modelling & Simulation

**Date of Conference:** 25-29 May 2009

**INSPEC Accession Number:** 10703306

**Date Added to IEEE *Xplore*:** 12 June 2009

**DOI:** 10.1109/AMS.2009.51

**ISBN Information:**

**Publisher:** IEEE

**ISSN Information:**

**Conference Location:** Bali, Indonesia

## 1. Introduction

Nowadays, the association cycle plant with gas and stream turbines are used in the electricity factory. In order to maintain the devices operating normally and efficiently, some parameters should be controlled. According to the gas turbine, the rotate speed of turbine and the exhaust temperature of



ters. Keeping the rotate speed steady affects directly th e invariable exhaust temperature is extremely important to guarantee the efficiency of the exhaust-heat boiler. However, there is a strong coupling relationship between the temperature control system

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