3.3.3 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

Number of books and chapters in edited volumes/books published during the Last Five years

INDEX SHEET

Sl. No.	Name of the teacher	Title of the book/Chapters Published	Title of the paper	Publication. No
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Jyothi Engineering College

Dr. Prajoon P <prajoonp@jecc.ac.in>

RE: K390609/9781138625273/ Handbook for III-V High Electron Mobility Transistor Technologies/ First proof/ Chapter 5

1 message

Preethi.S <preethi.sekar@luminad.com> Wed, Feb 27, 2019 at 12:06 AM
Reply-To: preethi.sekar@luminad.com
To: prajoonp@jecc.ac.in
Cc: dnirmalphd@gmail.com, email2ajayan@gmail.com

Dear Dr. Prajoon,

Attached please find the PDF proofs of your contribution, **Chapter 5** to the above-referenced title, for your review. Please read the pages for factual and/or typographical errors only; do not rewrite any previously acceptable material, because its insertion will cause delays in publication. If corrections must be made, please do so in a manner that will not affect the page layout. Please be sure to answer all of the copyeditor's queries, which appear in the margins of the pages, and update references if necessary, both in the reference list and the citations in text as well.

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p. 235 lowercase in lines 3 & 4: "access network frequency plan"

p. 245 lowercase in end of parag 1: longitudinal conversion loss (LCL)

p. 247 lowercase near bottom: repetitive electrical impulse noise (REIN).

This can easily be e-mailed.

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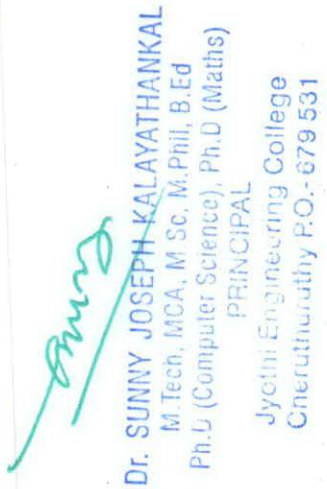

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5

AlGaN/GaN HEMTs for High Power Applications

P. Prajoon and Anuja Menokey

CONTENTS

In developing advanced high-power devices, most of the research and development efforts in Solid state devices and IC's are oriented towards High Electron Mobility Transistors (HEMT) and the III–V compound materials. In the past few years, the GaN-based HEMT has becoming an emerging device because of its high-power and high-frequency applications. This chapter demonstrates various GaN-based high-electron mobility transistor structures for high-power applications. The impact of barrier layer in the device structure especially the back-barrier layer. The DC and RF characteristics of the device is explained in detail. Further, versatile method to improve the breakdown

Security Systems in Design for Testing

M. I. Shiny, R. Reshma, Shine Ross, Siji John, R. Sreevidya and Sumana Moothedeth

Abstract It has become a great problem nowadays that the information contained in an IC chip is not provided with adequate security against the cunning attackers. The modern chip designs inbuilt with a design for testing (DfT) that enable testing process to become more easier, but it also acts as backdoor tool to the hackers to retrieve the sensitive data from the chip. So, in order for providing security for the information contained in the chip, we introduce a reconfigurable PUF design technique with the DfT. This security is achieved by providing a barrier against the hamming distance-based attack. In this paper, we compare the analysis of modified linear feedback shift registers (LFSRs), pseudorandom sequence generator, and physical unclonable function (PUF) in terms of randomness, hamming distance, and security. The result of comparison provides the PUF design have maximum security without effecting the testability of the circuits.

Keywords Linear feedback shift register · Physical unclonable function
Design for testing

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J. Wang et al. (eds.), *Soft Computing and Signal Processing*,
Advances in Intelligent Systems and Computing 898,
https://doi.org/10.1007/978-981-13-3393-4_51

Emerging Trends in Engineering, Science and Technology for Society, Energy and Environment – Vanchipura & Jiji (Eds)
© 2018 Taylor & Francis Group, London, ISBN 978-0-8153-5760-5

Effect of rural highway geometry on driver workload: A step towards safety

Anitha Jacob, K.J. Jinesh, Jisha Akkara & Jose P. Therattil
Jyothi Engineering College, Cheruthuruthy, Thrissur, Kerala, India

ABSTRACT: The research on traffic safety on highways underlines the need for maintaining consistency in the geometric design of highways. This paper focuses on driver workload and how the geometry affects driver's physiological characteristics. The work presented includes development of a device namely, the Road Driver Data Acquisition System (RDDAS). It is comprised of various sensors for capturing heart rate and galvanic skin resistance, and video cameras for capturing eye blink rate. Drivers equipped with the RDDAS were allowed to drive a vehicle with Global Positioning System through study stretches of known geometry. The effect of geometry on driver workload was explored using a scatter plot study and correlation analysis. The results indicate that heart rate and rate of eye blinking are very good indicators of driver workload. The study could be extended to develop mathematical models that can quantify the relationship between highway geometry and driver workload.

Keywords: driver workload, highway geometry, heart rate, galvanic skin resistance, rate of eye blinking

1 INTRODUCTION

The influence of geometry has an upper hand in controlling vehicular movement in rural (non-urban) highways where speed matters much more than traffic volume. Highways through rural areas generally support intercity trips. Drivers read the road ahead of them and adopt a speed that seems comfortable to them. Any unexpected road feature in the highway may surprise the driver and lead to erroneous driving maneuvers which in turn may end up in crashes. As highways are meant for high speed travel, the impact of any collision that occurs will be of a grievous nature. Hence, highways need to be designed in such a way that the geometry itself guides a driver to adapt a maneuver fitting the environs.

To improve traffic safety, designers and planners use many tools and techniques. One technique used to improve safety on roadways is geometric design consistency. Design consistency refers to the highway geometry's conformance with driver expectations. Generally, drivers make fewer errors at geometric features that conform to their expectations.

There are several measures for evaluating the consistency of geometry. These measures are classified as speed-based measures, alignment indices, vehicle stability-based measures and driver workload measures (Fitzpatrick et al., 2000). Among the measures, the driver workload measure is the sole method which directly considers the effect of geometry on drivers. As drivers are the major road users, it is always logical and appropriate to evaluate a road design from the view point of its major beneficiaries. Workload will be increased as and when the mismatch between what a driver observes in the field and what he expects increases. When this inconsistency increases beyond a limit, the driver may adopt an erroneous driving maneuver and this may result in a crash (Messer et al., 1981; Kannellaidis, 1996). Maintaining design consistency minimizes driver workload and thereby reduces the chances of a crash.

This study is part of the research being carried out to derive guidelines for geometric design based on driver workload. The prime objective of this paper is to focus on the effect

Lecture Notes in Civil Engineering

Tom V. Mathew
Gaurang J. Joshi
Nagendra R. Velaga
Shriniwas Arkatkar *Editors*

Transportation Research

Proceedings of CTRG 2017

Springer

Development of Consistency Evaluation Criteria for Indian Two-Lane Rural Highways

Jacob Anitha, Akkara Jisha and R. Midhun Mohan

Abstract Maintaining consistency in the design of highway geometry is an effective method in controlling road crashes from the highway-engineer's point of view. Among the various methods available to measure the consistency of geometry, viz., operating speed, driver workload, alignment index, and vehicle stability, alignment index is a method that is highly suitable for a developing country like India where financial resource is always a concern. It is an index used for quantifying how well the alignment features such as radius, curve length, and rate of change of gradient are coordinated with the overall alignment of the highway section. The particular measure does not require any additional data collection rather than the plan and profile of the highway. Had any criteria exist, with minimum investment, it will be possible to evaluate the consistency and subsequently safety. This paper develops a procedure for evaluating two-lane rural highway consistency and safety for Indian road conditions through alignment index. Highway geometry and crash data were made use of, and it was found that average radius and average curve length can be considered as the good alignment indices. Based on the crash data, criteria were developed for evaluating Indian two-lane rural highways. By using the criteria proposed in the work, planners, designers, and road safety auditors can evaluate the geometric design of a highway section as consistent or not. The output of the work further assists in selection of a plan/design among various alternatives, prioritization of rehabilitation works and in implementation of road safety management measures.

Keywords Highway geometric design · Consistency evaluation · Alignment index · Safety evaluation criteria · Rural highway

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T. V. Mathew et al. (eds.), *Transportation Research*, Lecture Notes in Civil Engineering 45, https://doi.org/10.1007/978-981-32-9042-6_45