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

Judul Prosiding (Artikel)	:	Adaptive Neuro Fuzzy Inference System (ANFIS) approach for modeling paddy production data in Central Java		
Nama/ Jumlah Penulis	:	Tarno, A Rusgiyono and Sugito		
Status Pengusul	:	penulis ke-1		
Identitas Prosiding	:	a. Nama Prosiding	:	Journal of Physics: Conference Series. The 8th International Seminar on New Paradigm and Innovation on Natural Science and Its Application 26 September 2018, Central Java, Indonesia
		b. Nomor ISBN	:	17426588
		c. Vol, No., Bln Thn	:	Volume 1217, Issue 117 June 2019 Article number 12083
		d. Penerbit	:	IOP Publishing Ltd
		e. DOI artikel (jika ada)	:	
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		g. Terindex	:	Scopus

Kategori Publikasi Prosiding (beri ✓pada kategori yang tepat) :

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d. Kelengkapan unsur dan kualitas terbitan/ Prosiding (30%)	5,2	5,7	5,45
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Nilai Pengusul = 60% x 18,3 = 10,98			

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d. Kelengkapan unsur dan kualitas terbitan/ Prosiding (30%)	9			5,2
Total = (100%)	**30**			18,4
Nilai Pengusul = 60% x 18,4 = 11,04				

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Semarang, April 2023
Reviewer 1

Prof. Dr. Widowati, S.Si., M.Si
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Adaptive Neuro Fuzzy Inference System (ANFIS) approach for modeling paddy production data in Central Java

Tarno, A Rusgiyono and Sugito

IOP Conf. Series: Journal of Physics: Conf. Series **1217** (2019) 012003 doi:10.1088/1742-6596/1217/1/012003

Growth and fabrication of 850 nm AlGaAs/GaAs vertical cavity surface emitting laser structure

N I Cabello*, P M Tingzon, H A Husay, J D Vasquez, R Jagus, K L Patrocenio, K C Gonzales, G A Catindig, E A Prieto, A Somintac, A Salvador and E Estacio

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Abstract. In this work, we demonstrate the NIP's all in-house development of a vertical cavity surface emitting laser structure. The VCSEL structure grown via MBE consists of an AlAs/AlGaAs distributed Bragg reflector and an AlGaAs/GaAs quantum well designed to issue at the 850 nm region. Reflectance spectroscopy showed that the stop band is centered around the designed wavelength. The electroluminescence spectra displayed that the maximum light emission corresponded to its design. This is a crucial step in the NIP's development of semiconductor lasers, leading towards future high-speed and highly-tunable VCSEL devices.

1. Introduction

Semiconductor lasers have been at the forefront of high-speed interconnects, thanks to the development of lasers capable of operating at gigahertz speeds [1]. Expansion to other applications such as proximity sensing [2] and light detection and ranging (LIDAR) [3] have driven further research on this field. For high-speed devices, switching speeds at the gigahertz range are desired [1], while high tuning speeds and increased tunability are sought for wavelength-tunable devices [4]. With its molecular beam epitaxy (MBE) and device fabrication facilities, the National Institute of Physics (NIP) has recently renewed its research thrust in this field, most notably on vertical cavity surface emitting lasers (VCSELs).

The VCSEL is a type of semiconductor laser with light emission orthogonal to the wafer plane. Its main advantages over other conventional semiconductor lasers such as edge-emitting lasers are the ease of coupling to optical fibers, direct wafer scale probing and low threshold operation [5]. A standard VCSEL design is composed of an optical cavity with an active region in the center, which is usually a quantum well (QW). The optical cavity is then sandwiched between two distributed Bragg reflectors (DBRs), which are highly reflecting mirrors composed of alternating high and low refractive index medium materials. The stop band of the DBR, which is the wavelength region with the highest reflectance, should coincide with the QW emission wavelength. Oxidation apertures, usually situated near the active region, are also employed for optical and current confinement [6].

In this paper, we report on the all in-house development of an AlGaAs/GaAs-based DBR VCSEL structure at the chip level. The whole process entails the whole production processes: the growth of the layers, device fabrication, and characterization of both as-grown and device-fabricated layers. Oxidation was also performed to explore the possibility of current and optical confinement effects [6].

2. Experimental Details

IOP Conf. Series: Journal of Physics: Conf. Series **1217** (2019) 012014 doi:10.1088/1742-6596/1217/1/012014

Analysis of non-Newtonian lubricated textured contact for mixed slip/no-slip configuration considering cavitation

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Abstract. The increasing use of non-Newtonian fluids as lubricants has received much attention due to their high shear. The present study explores a lubrication mechanism in lubricated textured contact for mixed slip/no-slip pattern considering cavitation. The effect of texturing depth on the bearing performance is also investigated. The numerical method based on commercial CFD (computational fluid dynamic) software is carried out to analyze the tribological characteristics (i.e., hydrodynamic pressure distribution) of lubricated textured contact. To model slip, the enhanced user-defined-function (UDF) in the FLUENT® package is developed. The analysis results show that giving textures as well as a slip to one of the parallel sliding surfaces can generate significant hydrodynamic pressure to affect the load support. The increase in the load support is also indicated by increasing the streamline recirculating flow. Besides, numerical results suggest that cavitation modeling has a significant effect on performance. Ignoring cavitation leads to less accurate results.

1. Introduction

The bearing has offered technological advances and has played an essential role in many relevant fields. However, the main problem limiting the development of the bearing extensively is friction and wear. To solve this problem, the use of artificial texture and slip is important in lubricated devices because of the benefits associated with load support and friction [1-2]. As a consequence of the development of modern machines, improved lubricant characteristics have received great attention. The researchers found the desired oil by adding some polymers to the Newtonian fluid, which in turn causes the fluid properties to be non-Newtonian. Experimental studies suggested that non-Newtonian fluids can improve lubrication performance in hydrodynamic bearing systems [3-4].

Recently, research on adding texture and slip on the bearings have been conducted by researchers [5-8]. Many researchers have also introduced an experimental work for the analysis of textured bearings with non-Newtonian lubricants [9-10]. In most existing studies, it is known that the width and/or height of texture and slip can increase the load and reduce friction. However, the consequence of growing load support causes changes in film thickness, causing changes in pressure on

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An investigation of a CT noise reduction using a modified of wiener filtering-edge detection

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Abstract. The aims of this study were to investigate the noise reduction in a CT image using a modified Wiener filtering-edge detection method. We modified the noise reduction algorithm of a combination of the Wiener filter and edge detection by addition of a dilation stage after edge detection. We then evaluated kernel size of the Wiener filter, threshold values in the edge detection, and size of structuring elements in the dilation process. Images of adult anthropomorphic and self-built wire phantoms were acquired by the new 4-row multislice CT Toshiba Alexion™. The images of the anthropomorphic phantom were used for a visual evaluation, while the images of the wire-phantom were used to obtain the spatial resolution and noise of the images. A Wiener filter-edge detection filter coupled with dilation, potentially reduced more CT noise. We found that the spatial resolution and noise of the filtered images were influenced by the size of the Wiener filter kernel, threshold of edge detection, and size of structuring element.

1. Introduction

Several approaches have been proposed to reduce CT dose without compromising image quality. One method has been proposed is the tube current modulation (TCM) [1, 2]. In TCM, tube currents decrease and increase proportionally with the decreasing and increasing attenuation of body parts [3]. Tube current modulation could be implemented by the rotation of the x-ray tube (angle-modulation) or by modulation in the direction of the longitudinal axis (Z-modulation), or a combination of both [4]. Another method proposed for reducing the dose is to utilize iterative reconstruction (IR) [5], instead of filtered back-projection (FBP). In fact, the IR technique is not only iterative during reconstruction but also iteratively processes in either the sinogram [6] or image spaces [7], in accordance with the specific physical modeling or statistical approaches. There are several IR software products used by major CT vendors including ASIR, AIDR, VEO, IRIS, SAFIRE, and iDose [8]. However, the details of the algorithms are very sparse, and they are still considered proprietary algorithms [5].

Another method that can be used for CT dose reduction is the use of noise reduction in the image space [8]. A noisy image due to acquisition with a small tube current-time (mAs) parameter can have