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

Judul Jurnal Ilmiah (Paper)	:	Autist mobile seat's frame strength simulation used in a car	
Jumlah Penulis	:	6 orang (Suryo, S.H., Jamari, J., Naufal, G.K., Ismail, A.P, Bayuseno, A.P., **Dinie Ratri Desiningrum**)	
Status Pengusul	:	Penulis Anggota	
Identitas Karya Ilmiah	:	a. Nama Prosiding	: AIP Conference Proceedings Volume 1725, 3rd International Conference on Advanced Materials Science and Technology, ICAMST 2015
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		c. Tahun Terbit, Tempat Pelaksana	: 2015 (Semarang 6-7 Oktober 2015)
		d. Penerbit/Organizer	: AIP Publishing
		e. Alamat Repository PT/web prosiding	: https://aip.scitation.org/doi/abs/10.1063/1.4945540
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a. Kelengkapan unsur isi buku (10%)	2,5	2,5	2,5
b. Ruang lingkup dan kedalaman pembahasan (30%)	8	8,5	8,25
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d. Kelengkapan unsur dan kualitas penerbit (30%)	8,5	8,5	8,5
Total = (100%)	27	28	27.5

Penulis Anggota = (27,5 x 40%)/5 = 2,20

Reviewer 1

(Prof. Dian Ratna Sawitri, S.Psi., M.Si., Ph.D.)

NIP. 197809012002122001

Unit kerja: Fakultas Psikologi Undip

Reviewer 2

(Dra. Endang Sri Indrawati, M.Si)

NIP. 196102121987032001

Unit kerja: Fakultas Psikologi Undip

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Status Pengusul	:	Penulis ke-6	
Identitas Karya Ilmiah	:	a. Nama Prosiding	: AIP Conference Proceedings Volume 1725, 3rd International Conference on Advanced Materials Science and Technology, ICAMST 2015
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b. Ruang lingkup dan kedalaman pembahasan (30%)	9		8
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	9		8
d. Kelengkapan unsur dan kualitas penerbit (30%)	9		8,5
Total = (100%)	30		27
Nilai Yang Diperoleh = 0,4 x 27 : 5 = 2,16			

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Semarang, 29 Juli 2022

Reviewer 1

Prof. Dian Ratna Sawitri, S.Psi., M.Si., Ph.D.

NIP. 197809012002122001

Unit kerja: Fakultas Psikologi Undip

Bidang Ilmu: Psikologi

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b. Ruang lingkup dan kedalaman pembahasan (30%)	9		8,5
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	9		8,5
d. Kelengkapan unsur dan kualitas penerbit (30%)	9		8,5
Total = (100%)	30		28
Nilai Yang Diperoleh = 0,4 x 28 : 5 = 2,24			

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e. Orisinalitas artikel baik dilihat dari hasil cek Turnitin dengan Similarity Index 16%, menunjukkan tidak terdapat indikasi plagiasi.
f. Artikel prosiding ini melibatkan bidang ilmu pengusul secara signifikan, yaitu psikologi perkembangan anak berkebutuhan khusus, khususnya autisme.

Semarang, 24 Agustus 2022
Reviewer 2

Dra. Endang Sri Indrawati, M.Si., Psikolog
NIP. 196102121987032001
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Bidang Ilmu: Psikologi

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Autist mobile seat's frame strength simulation used in a car

Suryo S.H.[a] ✉, Jamari J.[a], Naufal G.K.[a], Ismail R.[a], Bayuseno A.P.[b], Desiningrum D.R.[c]

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[c] Faculty of Psychology, Diponegoro University, Tembalang Campus, Semarang, 50275, Indonesia

Abstract

Going on a car with autistic children needs a special handling. Autistic children that tend to be hyperactive in the car may disturb driving. A tool is needed to keep them in a calm state when they are in the car. Autist Mobile Seat is an aid for the autistic children when going on a car. The aid is an additional seat paired with the main seat of the car. This aid consists of three main things: Main frame, body skin, and pneumatic system. Frame as the main component supporting the Autist Mobile Seat functions as a holder as well as a body skin retainer in order to be able to retain the body of the autistic children. The strength of the frame from this Autist Mobile Seat should be

counted as an anticipation from the failure of the frame function when receiving load when used by the autistic children in the car. Consequently, a test on the frame of the Autist Mobile Seat towards the load received should be conducted by using a method of FEM (Finite Element Method) with the help of commercial software. The simulation produces the maximum strength, the frame towards the load received as well as the critical point on the frame when loading occurs. © 2016 Author(s).

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AISBL

Suryo, S.H.; Laboratory for Engineering Design and Tribology, Department of Mechanical Engineering, University of Diponegoro, Jl. Prof. Soedharto, Tembalang, Semarang, Indonesia; email:sumarhs.undip@gmail.com

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Rahmat Doni Widodo and Azwar Manaf

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Optical properties of planar nematic liquid crystals samples which are parallel oriented by nanofibers

Yusril Yusuf, Ervanggis Minggar Kusumasari, Nur Mufidatul Ula, Khannah Jahidah, Kuwat Triyana, Harini Sosiati and Harsojo

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Study of parallel oriented electrospun *polyvinyl alcohol* (PVA) nanofibers using modified electrospinning method

Yusril Yusuf, Nur Mufidatul Ula, Khannah Jahidah, Ervanggis Minggar Kusumasari, Kuwat Triyana, Harini Sosiati and Harsojo

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Effect of Alloying Elements Al and Ca on Corrosion Resistance of Plasma Anodized Mg Alloys

Anawati[1, 2, a)], Hidetaka Asoh,[2, 3] and Sachiko Ono[2, 3 b)]

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[2]*Research Institute for Science and Technology,*
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Abstract. Plasma anodizing is a surface treatment used to form a ceramic-type oxide film on Mg alloys by the application of a high anodic voltage to create intense plasma near the metal surface. With proper selection of the process parameters, the technique can produce high quality oxide with superior adhesion, corrosion resistance, micro-hardness, wear resistance and strength. The effect of alloying element Al on plasma anodizing process of Mg alloys was studied by comparing the anodizing curves of pure Mg, AZ31, and AZ61 alloys while the effect of Ca were studied on AZ61 alloys containing 0, 1, and 2 wt% Ca. Anodizing was performed in 0.5 M Na_3PO_4 solution at a constant current density of 200 Am^{-2} at 25°C. Anodic oxide films with lava-like structure having mix composition of amorphous and crystal were formed on all of the alloys. The main crystal form of the oxide was $Mg_3(PO_4)_2$ as analyzed by XRD. Alloying elements Al and Ca played role in modifying the plasma lifetime during anodization. Al tended to extend the strong plasma lifetime and therefore accelerated the film thickening. The effect of Ca on anodizing process was still unclear. The anodic film thickness and chemical composition were altered by the presence of Ca in the alloys. Electrochemical corrosion test in 0.9% NaCl solution showed that the corrosion behavior of the anodized specimens depend on the behavior of the substrate. Increasing Al and Ca content in the alloys tended to increase the corrosion resistance of the specimens. The corrosion resistance of the anodized specimens improved significantly about two orders of magnitude relative to the bare substrate.

INTRODUCTION

During the last decade, there has been great interests in investigating Mg and its alloys as materials for application in cardiovascular and orthopaedic devices [1-7]. This is due to the unique property of Mg that degrades spontaneously in physiological solutions and due to the proximity of the mechanical properties to that of the natural bone [8]. The dissolved Mg ions are tolerable in human body and beneficial for some metabolic reactions [9]. In many cases of implantation, the body needs a temporary implant or device in which case biodegradable materials represent better than an inert one. Historically, Mg and its alloys have been studied as implant material since 1878 [7], however commercial medical devices are still not available. Mg application was limited due to the relatively poor corrosion resistance when exposed to physiology environment which led to liberation of strong hydrogen gas and loss of mechanical integrity.

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The Effect of Tempering Temperature on Pitting Corrosion Resistance of 420 Stainless Steels

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Abstract. The AISI Type 420 stainless steels are commonly used to steam generators, mixer blades, etc. These stainless steels are most prone to pitting in dissolved Cl^- containing environments. In this paper, the effect of tempering temperature on pitting corrosion resistance of AISI Type 420 stainless steels was studied. The AISI Type 420 stainless steels specimens were heat treated at the temperature of 1050°C for 1 hour to reach austenite stabilization and then quench in the oil. After that, the specimens were tempered at the temperature of 150, 250, 350 and 450°C for 30 minutes and then air cooled to the room temperature. The electrochemical potentiodynamic polarization test was conducted at 3.5% sodium chloride solution to evaluate corrosion rate and pitting corrosion behaviour. The Scanning Electron Microscope (SEM), Energy Dispersive X-Ray Spectroscopy (EDS) were used to evaluate the pitting corrosion product. The result have shown that highest pitting potential was found in the sample tempered at 250°C and corrosion pits were found to initiate preferentially around chromium carbides.

INTRODUCTION

Pitting corrosion is one of the most destructive and costly problem in the chemical process and desalination plants, water storage tank and pipeline, pump and valves, petroleum refineries etc [1,2]. Depending on the environment and material, the resultant pits can be wide and shallow or narrow and deep which can easily pierce the wall thickness of metal [3]. A typical example of pitting corrosion is the pit that occurs on a steam turbine blade working with neutral chloride.

The pitting corrosion of a material can be prevented through appropriate material selection, cathodic protection and change of environment. Among them, appropriate material selection has been considered the best way to prevent pitting [4]. The selection of martensitic stainless steel for steam turbine blade application is based on hardened and strengthened ability by heat treatment, high temperature and corrosion resistance ability [5]. However, It is still having susceptibility to pitting corrosion in a neutral chloride environment. For example Li et al. mentioned that when NaCl concentration is increase, the pitting potential of the domestic super martensitic stainless steel is decrease [6].

In the recent year, such studies have been further extended to improve pitting potential of martensitic stainless steel. The study of Marcuci et al indicate that martensitic stainless steel with austenizing temperature more than 900 °C, the dissolution of carbide can influence protective film stability and increasing the pitting corrosion resistance [7]. The study by Ashkan Reza Gholi indicate that the stainless steel by applying different tempering temperature result in different corrosion resistance [8]. The studies by Isfahanya et al. [9] and Candelaria et al. [10] indicated that the martensitic stainless steel by applying hardening and heat treatment process will improve hardness and corrosion resistant.

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Fixation Strength Analysis of Cup to Bone Material using Finite Element Simulation

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Abstract. Fixation of acetabular cup to bone material is an important initial stability for artificial hip joint. In general, the fixation in cement less-type acetabular cup uses press-fit and screw methods. These methods can be applied alone or together. Based on literature survey, the additional screw inside of cup is effective; however, it has little effect in whole fixation. Therefore, an acetabular cup with good fixation, easy manufacture and easy installation is required. This paper is aiming at evaluating and proposing a new cup fixation design. To prove the strength of the present cup fixation design, the finite element simulation of three dimensional cup with new fixation design was performed. The present cup design was examined with twist axial and radial rotation. Results showed that the proposed cup design was better than the general version.

INTRODUCTION

This research is initiated by previous research which focusesthe study in impingement between neck stem surface and liner rim due to human activities [1-3]. Further, the scope of these researchesalso had been developed into the activity of Salat as special daily activity [4-5]. In the real condition, the impingement process will result in push-force for all hip joint components, in particular for cup component. The cup component will be suppressed in axial or radial direction due to impingement process. Therefore, the focus of this research is to continue the research by investigating the cup fixation.

In general, artificial hip joint in total hip arthroplasty (THA) consists of acetabular cup or cup, acetabular liner or liner, femoral head, and stem. In the THA, cup and stem are component that experiencing direct contact with bone. In order to lock the hip component with bone, the good fixation method is required. Especially for the cup, cemented and cement less methods are widely used in the THA. In this paper, the cup fixation in cement-less method will be discussed.

The cup fixation of cement-less method usually uses press-fit and screw methods.Press-fit involves pressure bonding by differences in elasticity between the acetabulum bone and cup. To obtain it, the diameter of the cup is usually bigger than the reaming diameter of the acetabulum [6]. The screw is widely used to support press-fit

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Influence of substrate orientation on the structural properties of GaAs nanowires in MOCVD

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Abstract. In this study, the effect of substrate orientation on the structural properties of GaAs nanowires grown by a metal organic chemical vapor deposition has been investigated. Gold colloids were used as catalyst to initiate the growth of nanowiresby the vapour-liquid-solid (VLS) mechanism. From the field-emission scanning electron microscopy (FE-SEM), the growth of the nanowires were at an elevation angle of 90°, 60°, 65° and 35° with respect to the GaAs substrate for (111)B, (311)B, (110) and (100) orientations respectively. The preferential NW growth direction is always <111>B. High-resolution transmission electron microscope (HRTEM) micrograph showed the NWs that grew on the GaAs(111)B has more structural defects when compared to others. Energy dispersive X-ray analysis (EDX) indicated the presence of Au, Ga and As. The bigger diameter NWs dominates the (111)B substrate surface.

INTRODUCTION

An interesting subject in the VLS growth of NWs is changing their crystalline orientation. Typically, the commonly used GaAs(111)B substrate results in III-V semiconductor NWs grown in to the [111]B direction. This has been reported by several groups in the growth of GaAs NWs [1-5], InP NWs [6] and InAs NW [7]. Important features found in the study of NW when it is grown in the [111] orientation is a high density of twin stacking faults than growing in other orientation. Moreover, NWs also crystallize in a hexagonal structure with higher grown temperature and higher V/III ratio. Thus, from the perspective of quality crystal produced, the NW growth with orientation other than [111] would be beneficial. One method that can be used to change the direction of NW growth is by using different substrate orientation. There are several problems that may arise as result of different substrate orientation such as catalyst particle annealing [8] and chemical treatment of the substrate surface [9], which can affect the substrate surface. On the basis of energy consideration, Wang and co-workers concludes that the (111)B direction is favorable as it minimizes the surface free energy of the liquid-solid interface [10].

EXPERIMENTAL

The experiment starts with semi insulating undoped GaAs substrates immersed in 0.1% poly-L-lysine (PLL) solution for 3 mins. After cleaning with deionize water and subsequent drying with N_2, the 30 nm diameter gold colloids were dispersed on the substrate surface and immediately washed after 20 sec. Due to the positive charge on the surface of the PLL layer, they attract the negative charged of the gold colloids. Nanowires were grown by vertical flow MOCVD at a pressure of 76 Torr. Trimethylgallium (TMGa) and arsine (AsH_3; 10% in H_2) were used as the gasessource and V/III ratio was set at 166. The substrate was annealed in situ at 600°C under AsH_3 ambient for 10 min to desorbed surface contaminants and form eutectic alloy between Ga and gold colloid (Au) [11]. After

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