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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW  
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Judul Jurnal Ilmiah (Artikel) : Mechanical Properties of Liquid and Solid Repaired on Damaged Model of Glass Fiber-Reinforced Polymer Composites  
 Jumlah Penulis : 2 orang (Khafidin, **Sulardjaka\***) \*) Corresponding author.  
 Status Pengusul : penulis ke-2  
 Identitas Jurnal Ilmiah : a. Nama Jurnal : American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)  
 b. Nomor ISSN : ISSN (Print) 2313-4410, ISSN (Online) 2313-4402  
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Semarang, 2 April 2020

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Ir. Efilta Yohana, M.T, PhD.  
 NIP. 196204281990012001  
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Dr. Agus Suprihanto, S.T, M.T.  
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 Unit Kerja : Teknik Mesin FT UNDIP

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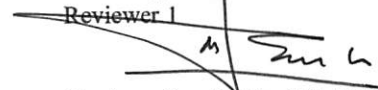
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Semarang, 3 Januari 2020

Reviewer 1



Dr. Agus Suprihanto, S.T, M.T.

NIP. 197108181997021001

Unit Kerja : Teknik Mesin FT UNDISP



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<b>Total = (100%)</b>	<b>20,00</b>			<b>18,70</b>
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Semarang, 30 Maret 2020

Reviewer 2

Ir. Efilta Yohana, M.T, PhD.

NIP. 196204281990012001

Unit Kerja : Teknik Mesin FT UNDIP

## Mechanical Properties of Liquid and Solid Repaired on Damaged Model of Glass Fiber-Reinforced Polymer Composites

K Khafidin, S Sulardjaka - American Scientific Research Journal ..., 2019 - asrjetsjournal.org

This study has investigated the effect of repair method on mechanical properties of Glass Fiber-Reinforced Polymers (GFRP). Composite materials are primarily damaged by mechanical loads. In this study, a damaged composite was repaired by liquid filling and solid filling methods. The damaged composite was modeled by drilled composites specimen with 5 mm drill. The specimen than repaired in the form of the same fluid and solid mixture of epoxy resin composite. The tensile and impact properties of damaged and repaired ...

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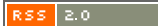
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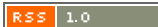
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# Mechanical Properties of Liquid and Solid Repaired on Damaged Model of Glass Fiber-Reinforced Polymer Composites

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## Abstract

This study has investigated the effect of repair method on mechanical properties of Glass Fiber-Reinforced Polymers (GFRP). Composite materials are primarily damaged by mechanical loads. In this study, a damaged composite was repaired by liquid filling and solid filling methods. The damaged composite was modeled by drilled composites specimen with 5 mm drill. The specimen than repaired in the form of the same fluid and solid mixture of epoxy resin composite. The tensile and impact properties of damaged and repaired composites were observed. The results show the increase of tensile and impact strength in each additional glass fiber in both liquid and solid repair. Also, solid repair data show the better and the increase of tensile and impact strength than the liquid repair. They are 23, 40 and 46 MPa for tensile strength of solid repair with 10%, 20% and 30% of additional glass-fiber respectively. Moreover, the impact strength data of solid repair show 0.86, 1.00 and 1.99 J/mm<sup>2</sup> with 10%, 20% and 30% of additional glass fiber respectively. Fractography study shows the fracture of Repaired Solid Hollow Glass-Fiber Reinforced Polymers (RSHGFRP) 30% composite located in the circle of repaired area. Solid repair shows higher mechanical properties than liquid repair.

**Keywords:** impact strength; liquid repair; solid repair; tensile strength; GFRP.

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# Chemical and Sensory Comparison of Classical and Alternative Systems for the Ageing of Wine Distillate

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## Abstract

The chemical components were quantified in artificially aged (with oak chips) and barrel-aged wine distillate. These components belong to various chemical families, including aldehydes (acetaldehyde, propionic aldehyde, furfural, coniferaldehyde, synapaldehyde), higher alcohols (methanol, ethanol, 1-Propanol, butanol, isobutanol, amyl alcohol, isoamyl alcohol, 1-hexanol), volatile acids (ethanoic acid, propionic acid, 3-methylbutanoic acid, hexanoic acid, heptanoic acid, octanoic acid) and esters (methyl formate, ethyl acetate, butyl butyrate, methyl butyrate). Chemical analysis was performed by classical methods of analytical chemistry. During the seven month aging process all the chemical components were affected by ageing systems. The analysis of alcoholic strength by volume, aldehydes and volatile acids showed a great discrimination of the brandies based on the ageing system. The loss of alcohol was lower in a glass vessel with oak chips than in oak wood barrel. Thus, artificial ageing is cost-efficient method than the classical one. Moreover, the ageing system affected the sensory profile of the wine distillates as well. The present study demonstrated that alternative ageing up to five months is the most promising technology to get desirable colour. However, traditional wine spirit ageing method is preferable to produce high quality brandy compared to alternatives as spirit aged in Limousin oak barrels are more matured than the one aged with oak chips.

**Keywords:** wine distillate; oak barrel; artificially aged; chemical components; oak chips.

## 1. Introduction

Brandy is produced from wine spirit, which is matured for at least six months with oak [1]. During the aging period, slow physicochemical changes involving both brandy and wood take place.

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## 2DPSK Signal Detection Based on Cascaded Stochastic Resonance

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### Abstract

In the case of poor channel environment, the detection and reception of digital signal often appear errors. In view of this situation, by reducing the error rate of coherent reception of 2D PSK signals, we propose a new method based on the detection efficiency and improved cascaded stochastic resonance theory. A cascaded bistable stochastic resonance model was established by using stochastic resonance theory. The nonlinear receiver was used to receive 2DPSK signal under small signal-to-noise ratio (SNR). The experimental results show that the spectrum peak of the output signal of cascade stochastic resonance system is 5.70 times that of the traditional model. The output error rate of cascaded nonlinear system model can be reduced by 92.31% compared to the traditional model when the input signal to noise ratio is -7dB. Consequently, the output signal of the system is more likely to be detected and the accuracy can be greatly improved.

**Keywords:** stochastic resonance; 2DPSK signal; bit error rate; cascaded bistable system; signal-to-noise ratio.

### 1. Introduction

The transmission of digital signal requires high efficiency of signal transmission and the low bit error rate of transmission. 2DPSK signal even contents this requirement. The principle of transmitting signal is to transmit digital signal through the relative phase change of multiple front and rear symbols, so it is also called binary relative phase shift keying. Compared with traditional binary amplitude keying (2ASK) and binary frequency shift keying (2FSK), 2DPSK system's anti-noise performance and channel band efficiency are better than amplitude keying (ASK) and frequency shift keying (FSK), and the system have excellent stability when the channel changes.

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