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**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW**  
**KARYA ILMIAH : JURNAL ILMIAH**


Judul Jurnal Ilmiah (Artikel) : Evaluation Of Drop Test Performance Of Glass Fiber Reinforced Plastic (GFRP) Modular Pontoon Unit Using Numerical Analysis  
 Jumlah Penulis : 4 orang  
 Status Pengusul : penulis pertama/utama  
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 b. Nomor ISSN : 1024-1752 (Print)  
 c. Vol, No., Bln Thn : Vol. 42, No. 2 Tahun 2019  
 d. Penerbit : Zibeline International Publishing  
 e. DOI artikel (jika ada) : DOI :10.26480/jmerd.02.2019.106.110  
 f. Alamat web jurnal : https://jmerd.org.my/jmerd-02-2019-106-110/  
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 g. Terindex : Scopus, Q4

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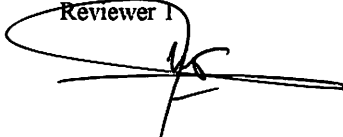
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 NIP. 197307021999031001  
 Unit Kerja : S1 Teknik Mesin FT UNDIP

Reviewer 1  


Dr.Eng. Hartono Yudo, S.T., M.T.  
 NIP. 197510211999031004  
 Unit Kerja : S1 Teknik Perkapalan FT UNDIP

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Artikel memiliki kesesuaian dan kelengkapan unsur sesuai template dari jurnal yang dituju (Title, Abstract, Introduction, Material and Methods, Result and Discussion, Conclusion and Reference). Substansi sesuai bidang penulis (teknik perkapalan).

**2. Ruang lingkup dan kedalaman pembahasan:**

Ruang lingkup hanya terbatas pada posisi drop yang didefinisikan pada scenario, pembahasan telah dilakukan dengan cukup baik

**3. Kecukupan dan kemutakhiran data/informasi dan metodologi:**

Novelty cukup baik, Informasi yang dihasilkan cukup mutakhir untuk pengembangan teknologi ponton unit, metodologi sudah dijelaskan dengan baik, index similarity (17%)

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Jurnal memiliki reputasi biasa, SJR (0.12), Kategori Q4, jurnal dapat digunakan sebagai prasyarat untuk kenaikan ke LK, untuk pengusul yang bergelar S3.

Semarang, Juli 2019  
 Reviewer 1

Dr. Eng. Hartono Yudo, S.T., M.T.  
 NIP. 197510211999031004

Unit Kerja : S1 Teknik Perkapalan FT UNDIP

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- Ruang lingkup dan kedalaman pembahasan:**  
 Pembahasan menggunakan contact algorithm yang biasa digunakan pada studi yang sudah ada, namun pembahasan telah dilakukan dengan baik
- Kecukupan dan kemutakhiran data/informasi dan metodologi:**  
 Informasi tentang drop test yang diberikan baik dan cukup mutakhir dalam pengembangan teknologi ponton unit Referensi yang digunakan juga cukup baik, Indeks similarity menunjukkan tingkat kemiripan 17% .(masih memenuhi persyaratan penerimaan tingkat kemiripan), Novelty artikel cukup baik, kontribusi biasa.
- Kelengkapan unsur dan kualitas terbitan:**  
 Jurnal cukup baik dan dapat digunakan sebagai prasyarat ke LK, tapi hanya dari S3 lektor. SJR Index (0.12), Kategori Q4 dan H-Index 4

Semarang, 1 Juli 2019  
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Dr. Eng. Achmad Widodo, S.T., M.T.  
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Journal of Mechanical Engineering Research and Developments [Open Access](#)  
Volume 42, Issue 2, 2019, Pages 106-110

## Evaluation of drop test performance of glass fiber reinforced plastic (GFRP) modular pontoon unit using numerical analysis (Article) [\(Open Access\)](#)

Zakki, A.F.<sup>a</sup>, Windyandari, A.<sup>b</sup>, Medina, Q.T.<sup>c</sup>, Abar, I.A.C.<sup>d</sup>

<sup>a</sup>Diponegoro University, Engineering Faculty, Naval Architecture Department, Central Java, Semarang, Indonesia

<sup>b</sup>Diponegoro University, School of Vocation, Industrial Technology Department, Central Java, Semarang, Indonesia

<sup>c</sup>Sepuluh Nopember Institute of Technology, Marine Technology Faculty, Marine Engineering Department, East Java, Surabaya, Indonesia

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### Abstract

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The main objective of the research was to investigate the structural response of the Glass Fiber Reinforced Plastic modular pontoon unit due to the impact load during the drop test. The impact load was defined as the drop phenomena that might be occurred while GFRP modular pontoon unit is being packaged, stacked and transported. Numerical simulation was performed using nonlinear finite element method to obtain the response characteristics. The maximum effective (Von Mises) stress of the GFRP modular pontoon unit was estimated as a design consideration for the structure strength. The external dynamics parameter which includes as the drop orientation and drop velocity which is equivalent to the drop height is being considered on the simulation analysis. According to the simulation result, it can be found that the maximum effective stress is occurred on the corner side drop position. The magnitude of maximum effective stress is larger than the yield strength of the GRFP material. Therefore the plastic deformation is observed on the corner side of the modular pontoon unit. The results of simulation analysis present that the most vulnerable drop position is the corner side position. It is recommended that the corner side of the modular pontoon unit is the important part for design improvement to increase the structure reliability during the drop phenomena. © 2019 Bangladesh University of Engineering and Technology. All Rights Reserved.

### SciVal Topic Prominence

Topic: Soldering alloys | Soldered joints | Pad cratering

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### Author keywords

Absorbed ruptured energy Drop test simulation GFRP modular pontoon unit Structural response

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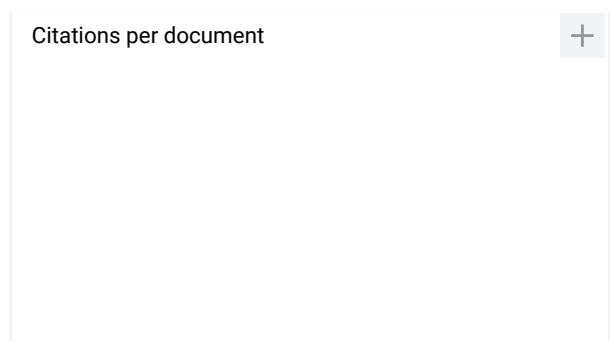
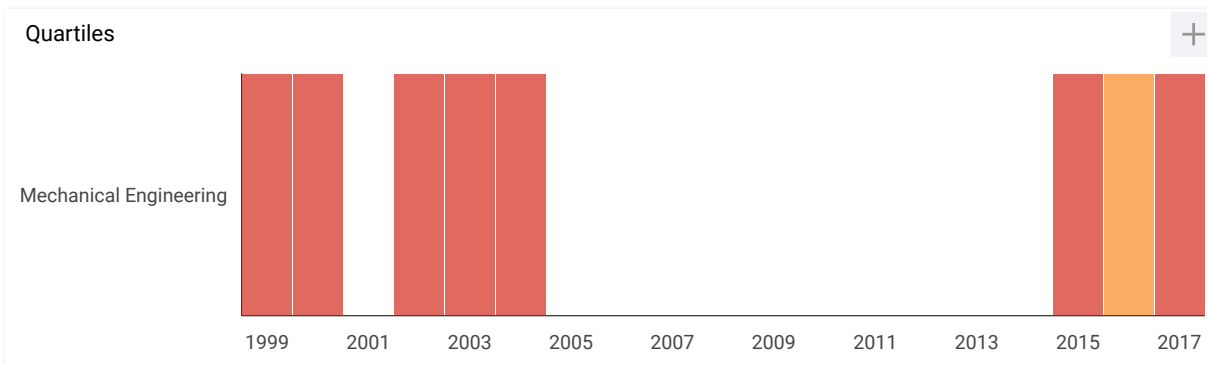
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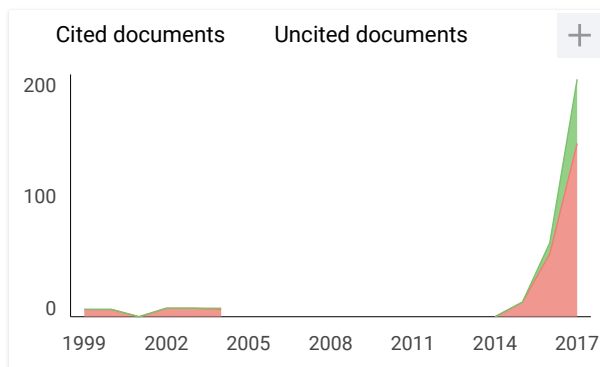
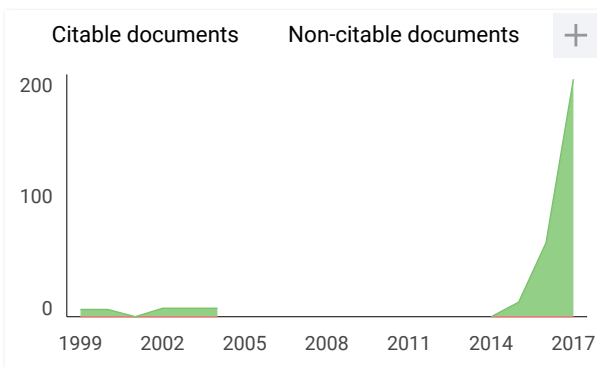
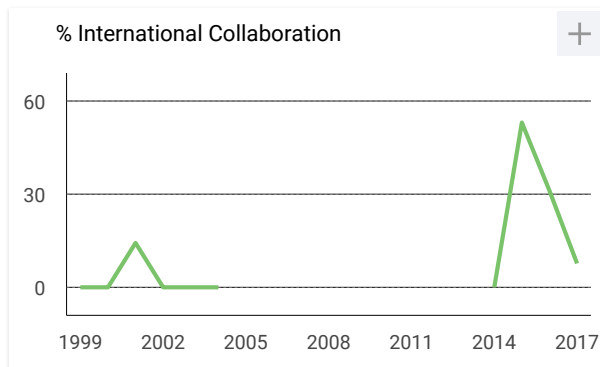
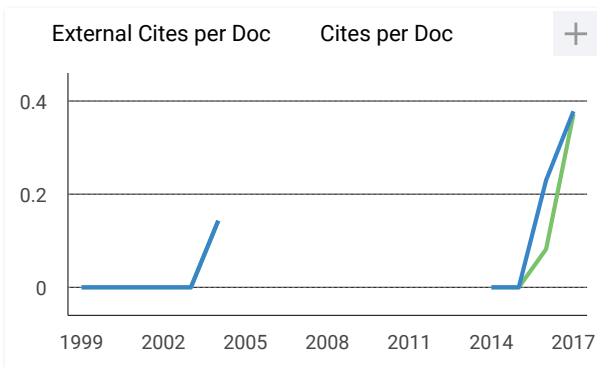
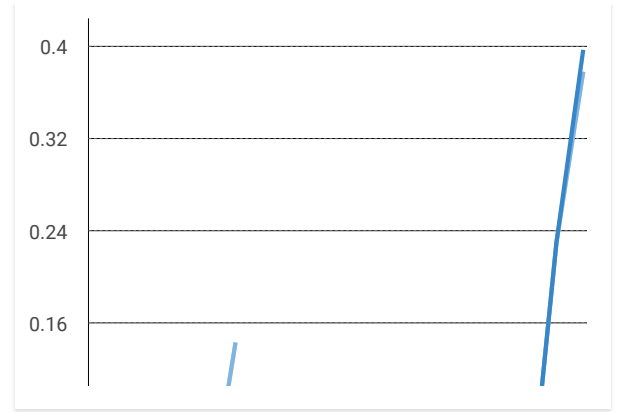
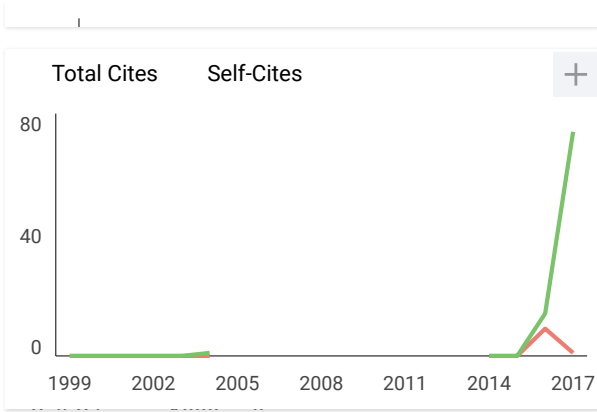
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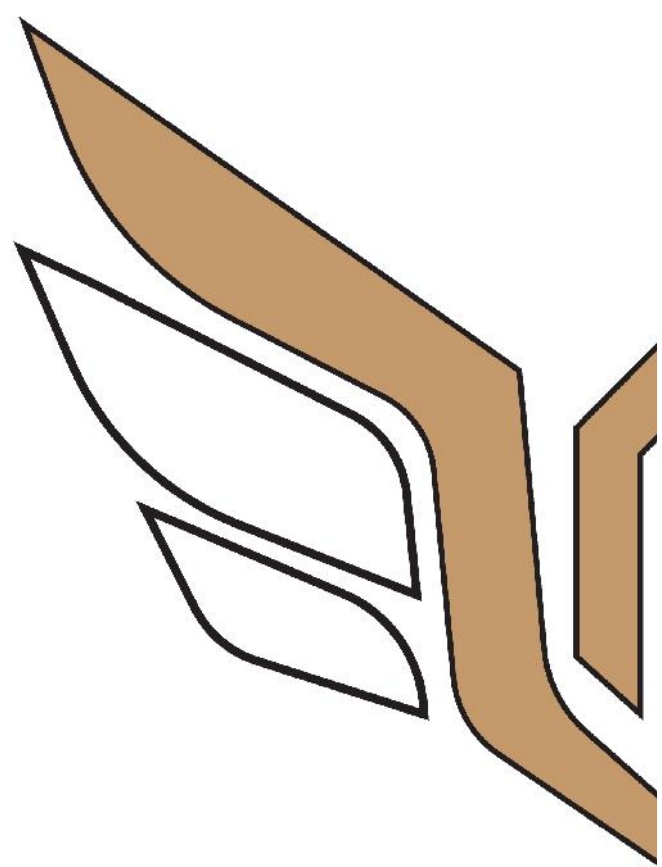
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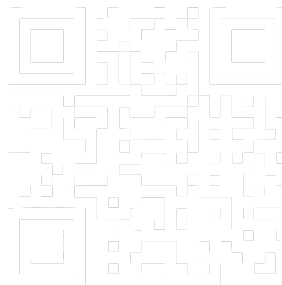
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
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