

## Development of catamaran ship design as a hospital facility for handling COVID-19 pandemic in Indonesian archipelago region

K Kiryanto, [AWB Santosa](#), A Firdhaus - International Journal of ..., 2020 - academia.edu

The outbreak of the novel coronavirus disease in 2019 (COVID-19) caused a significant public health crisis worldwide and challenged health care systems on six continents.

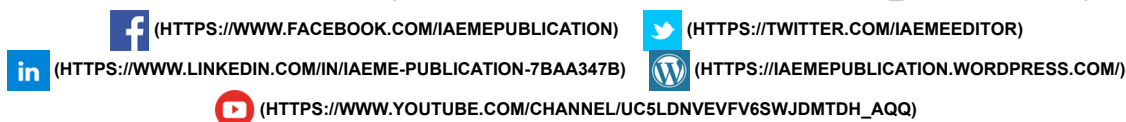
Indonesia is a country with the 4th largest population globally, and 60% of the population is on the island of Java and the unequal health facilities that can handle the COVID-19 virus, the presence of the COVID-19 pandemic with a high spread rate can lead to a significant disaster. In this research, a catamaran hospital ship will be developed to help the handling ...

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Severity: Notice

Message: Undefined offset: 1

Filename: frontend/editorial\_board.php

Line Number: 605

Backtrace:

File: /home/iaemes/public\_html/application/views/default/frontend/editorial\_board.php

Line: 605

Function: \_error\_handler

File: /home/iaemes/public\_html/application/libraries/Template.php

Line: 379

Function: view

File: /home/iaemes/public\_html/application/helpers/template\_helper.php

Line: 39

Function: write\_view

File: /home/iaemes/public\_html/application/controllers/Home.php

Line: 2532

Function: load\_frontend\_template

File: /home/iaemes/public\_html/index.php

Line: 315

Function: require\_once

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Severity: Notice

Message: Undefined offset: 1

Filename: frontend/editorial\_board.php

Line Number: 747

Backtrace:

File: /home/iaemes/public\_html/application/views/default/frontend/editorial\_board.php

Line: 747

Function: \_error\_handler

File: /home/iaemes/public\_html/application/libraries/Template.php

Line: 379

Function: view

File: /home/iaemes/public\_html/application/helpers/template\_helper.php

Line: 39

Function: write\_view

File: /home/iaemes/public\_html/application/controllers/Home.php

Line: 2532

Function: load\_frontend\_template

File: /home/iaemes/public\_html/index.php

Line: 315

Function: require\_once

**Dr. G. Arthanareeswaran**Department of Chemical Engineering, National Institute of Technology, Trichy, **India****A PHP Error was encountered**

Severity: Notice

Message: Undefined offset: 1

Filename: frontend/editorial\_board.php

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Severity: Notice
Message: Undefined offset: 1
Filename: frontend/editorial_board.php
Line Number: 747
Backtrace:
File: /home/iaemes/public_html/application/views/default/frontend/editorial_board.php
Line: 747
Function: _error_handler
File: /home/iaemes/public_html/application/libraries/Template.php
Line: 379
Function: view
File: /home/iaemes/public_html/application/helpers/template_helper.php
Line: 39
Function: write_view
File: /home/iaemes/public_html/application/controllers/Home.php
Line: 2532
Function: load_frontend_template
File: /home/iaemes/public_html/index.php
Line: 315
Function: require_once
```

**Dr. Mohamed Kchaou**

University Of Sousse, Tunisia

**A PHP Error was encountered**

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Function: load_frontend_template
File: /home/iaemes/public_html/index.php
Line: 315
Function: require_once
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**Dr. Chao Wang**Nanyang Technological University, [Singapore](#).**A PHP Error was encountered**

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Function: load_frontend_template
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Function: require_once
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**Dr. Mohd Azman Bin Abdullah**University Teknikal Malaysia Melaka, **Malaysia.****A PHP Error was encountered**

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Function: load_frontend_template
File: /home/iaemes/public_html/index.php
Line: 315
Function: require_once
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**Dr. Fateh Mebarek-Oudina**Skikda University, **Algeria.****A PHP Error was encountered**

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Line: 747
Function: _error_handler
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Line: 379
Function: view
```

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**35 . EMPOWERMENT OF NEO-LITERATE AND NON-LITERATE WOMEN IN CACHAR DISTRICT OF ASSAM: A STUDY ON EMPOWERMENT INITIATIVES UNDERTAKEN BY JAN SHIKSHAN SANSTHAN, SILCHAR**  
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**36 . STUDY THE INFLUENCE OF CONCENTRATION OF COMPONENTS ON THE LEVEL OF WASTEWATER TREATMENT**  
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# DEVELOPMENT OF CATAMARAN SHIP DESIGN AS A HOSPITAL FACILITY FOR HANDLING COVID-19 PANDEMIC IN INDONESIAN ARCHIPELAGO REGION

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## ABSTRACT

*The outbreak of the novel coronavirus disease in 2019 (COVID-19) caused a significant public health crisis worldwide and challenged health care systems on six continents. Indonesia is a country with the 4th largest population globally, and 60% of the population is on the island of Java and the unequal health facilities that can handle the COVID-19 virus, the presence of the COVID-19 pandemic with a high spread rate can lead to a significant disaster. In this research, a catamaran hospital ship will be developed to help the handling of the COVID-19 pandemic in Indonesia to deal with areas affected by the COVID-19 virus especially in coastal areas. Catamaran has a few points of interest when compared to monohull ships. The deck range of the catamaran is more extensive than that of a monohull. The steadiness of catamaran vessels is superior to monohull vessels. Within the handle, this ship design uses a parent plan approach with reference to a comparator ship design that has cruised well. The research method applied is a numerical methods utilizing CAD and CFD software. The main dimensions of the ship obtained is  $L_{wl} = 35.5$  m,  $B = 18.1$  m,  $T = 2.54$  m,  $H = 4.26$  m,  $B_1 = 3.83$  m,  $CB = 0.698$ , and the maximum  $V_s = 21$  knots with 341 kN total resistance. The main size of the ship is obtained from the minimum requirement for the deck area to be occupied by medical facilities such as those in special hospitals for handling infectious diseases. These facilities include isolation rooms for up to 25 people, treatment rooms, laboratory rooms, radiology rooms, polyclinics, pharmacies and autopsy rooms.*

**Keywords:** hospital ships COVID 19, catamarans, resistance, stability.

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## **SECONDARY SERVER BASED PACKET DROPPING ATTACK DETECTION USING MODIFIED SUPPORT VECTOR MACHINE**

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### **ABSTRACT**

*Mobile Adhoc networks are mainly affected by one of the prominent attacks namely Packet dropping attacks which in turn reduces packet delivery ratio affecting network performance. Distributed and Cooperative Intrusion Detection System (DC-IDS) is greatly involved in earlier researches for these attacks mitigation. The packet forwarding proficiency is accomplished by selfish behavior of nodes prediction through monitoring but it fails to endeavor compromised node behavior detection and tends to up surge computational overhead. Secondary Server based Distributed and Cooperative Intrusion Detection System (SS-DC-IDS) is presented in this research to alleviate the above issues. This research work also greatly involves Secondary server selection primarily for intrusion attack detection improvement and mitigating primary server computation overhead. Animal migration algorithm with the consideration fitness values energy and bandwidth are utilized for secondary server selection. The cluster head selection through clustering algorithm in which fragmenting large network environment into small organization is accomplished. Hybrid side channel monitoring techniques play a vital role in data transmission behavior monitoring via cluster head collecting the attack features from the cluster members. The secondary server receives the collected features before data transmission. Modified Support Vector Machine algorithm is mainly involved in information learning Secondary server and checks whether intrusion attacks present or not. NS2 simulation environment is eminently utilized for the analysis of research work which evidently presents improved performance than the prevailing research work*



# MINIMUM ABERRATION REGULAR FRACTIONAL FACTORIAL DESIGNS

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## ABSTRACT

*Fractional factorial (FF) designs are successfully used for conducting experiments involving a large number of variables and analyzing the collected data for discovering relationships between factors, they provide a powerful tool for both academic researches and practical uses. These include agriculture, industries, medicine, and manufacturing, and so on. A fundamental task in planning such an experiment is the choice of the appropriate designs from all possible FF designs. The minimum aberration (MA) criterion is commonly the most used metric for selecting designs. In this paper, we propose two approaches for constructing MA regular FF designs; the obtained results extend what is proposed in the current literature by providing much larger MA designs.*

**Keywords:** Fractional factorial designs, minimum aberration, word length pattern.

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## 1. INTRODUCTION AND OVERVIEW

Conducting experiments involving a large number of factors become impracticable using a complete factorial design, this is because it requires the observation of the output variable at each of the possible level combinations of the input variables (factors); such a large experiment is too expensive and may not be feasible. A practical solution is provided by considering only a Fraction of the full factorial experiment; FF designs are among the most popular designs used in the areas of science and engineering for exploring more factors economically. In general, the selection of the appropriate designs from all possible FF designs must satisfy optimality criteria, a commonly used one for choosing FF designs is the MA criterion.

In general, a two-level regular FF design is denoted by  $2^{n-k}$ , and has  $n$  factors, each with two levels. Associated with every  $2^{n-k}$  FF design is a set of  $k$  words  $w_1, w_2, \dots, w_k$  called generators. The defining contrast subgroup of the fraction is the set of distinct words formed



## **STUDY THE INFLUENCE OF CONCENTRATION OF COMPONENTS ON THE LEVEL OF WASTEWATER TREATMENT**

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### **ABSTRACT**

*The effect of the nature and concentration of coagulants on the effectiveness of reducing the colour intensity with varying the concentration of sorbent from 1 to 3 g/l and coagulants  $Al_2(SO_4)_3$  and  $FeCl_3$ , respectively 0.5; 0.75 mg/l. It has been shown that from the mentioned reagents the optimal option is the use of aluminium sulfate and iron chloride as a coagulant, as a flocculant - anionic polyacrylamide in concentrations of 0.5 mg/l, 0.75 mg/l and 0.5 mg/l respectively. It is determined that application of coagulants and flocculant for treatment of wastewater of silkworm production makes it possible to achieve required parameters of quality of treatment, at that efficiency of treatment on suspended substances makes 94.0-97.0%, on COD 87.0-91.0%, on dyes 91.0-94.0%.*

**Abbreviation:** COD - chemical oxygen demand; MPC - maximum permissible concentration; BOD - Biochemical oxygen demand; PAA – Polyacrylamide.

**Keywords:** cleaning efficiency, coagulant, concentration, flocculant, intensity, process, sorbent, suspended substances, wastewater.