STRATEGI MENULIS PAPER BEREPUTASI INTERNASIONAL

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Fakultas Teknik Universitas Indonesia

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Education

August 2007 – January 2011	**Bachelor of Engineering** Naval Architecture and Marine Engineering, University of Indonesia Ship Resistance and Propulsion Bachelor thesis: "*Study of Air Bubbles on Coal Barge to Reduce Frictional Resistance*"
February 2011 – August 2012	**Master of Engineering** Mechanical Engineering, University of Indonesia Analysis on Diesel Dual Fuel Engine Master thesis: "*Numerical Study of Diesel Dual Fuel Using Natural Gas as Secondary Fuels*"
October 2013 – September 2016	**Doctor of Engineering** Marine System Engineering, Kyushu University Energy Saving in Container Terminal Dissertation: "*Energy Saving Analysis on Reefer Container Storage Yard*"

Materi

1. Persiapan Naskah (Paper Bereputasi Internasional)
2. Strategi Memilih Jurnal Tujuan

Budiyanto et al., Cogent Engineering (2020), 7: 1716925
https://doi.org/10.1080/23311916.2020.1716925

cogent engineering

MECHANICAL ENGINEERING | RESEARCH ARTICLE

Investigation of the effectiveness of a stern foil on a patrol boat by experiment and simulation

Muhammad Arif Budiyanto[1*], Muhamad Fuad Syahrudin[1] and Muhammad Aziz Murdianto[1]

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Featured Application: Application of stern foil in high-speed vessel was effective to reduce ship resistance of 22.3% on the half-full-load condition. Moreover, variation angles of attack of the stern foil reduced a ship resistance with a maximum reduction is 26.7% occurred at Fr 0.9 with angle 0° towards the x-axis.

Reviewing editor: Duc Pham, University of Birmingham, UK

Additional information is available at the end of the article

Abstract: In the marine industry, specifically fast patrol boats, the important objectives are reducing resistance and improving the efficiency of ships' propulsion systems. The aim of this research was to investigate the application of a stern foil on a patrol boat through experimental and simulation methods. The stern foil used to generate a lift force was an asymmetrical National Advisory Committee for Aeronautics (NACA) foil. In the experiment, the stern foil was installed below the transom of a ship model and positioned parallel to the keel direction (3° towards x-axis). This position created a resultant force, which had an angle to the x-axis. There were variables in this experiment, such as the stern foil application, Froude number (Fr) and hull loads. Those combinations of variables generated sufficient data to analyse the effect of the stern foil working in various conditions. At an optimal load condition (half full load, 2 kg) and Fr 1.1 in the experiment and simulation, the ship model had a resistance reduction of as much as 22.3% and 23.3% in stern foil applications. In addition, with different setups of the stern foil (0° towards the x-axis) in the simulation, a resistance reduction of about 26.7% occurred at Fr 0.9.

ABOUT THE AUTHORS

Muhammad Arif Budiyanto

Muhammad Arif Budiyanto is a faculty member in the Department of Mechanical Engineering, Universitas Indonesia. He completed undergraduate and master's degrees in the Department of Mechanical Engineering, Universitas Indonesia in 2012. He received his doctorate degree in Marine System Engineering from Kyushu University, Japan in 2016. His subject is energy-saving technology in the maritime industry by an experiment and numerical analysis approach.

Muhamad Fuad Syahrudin is undergraduate student in Naval Architecture and Marine Engineering, Universitas Indonesia. His final project is application of stern foil on full draft patrol vessel at high speed condition using towing test method. His work is very significant on this paper to validate the simulation results.

Muhammad Aziz Murdianto is undergraduate student in Naval Architecture and Marine Engineering, Universitas Indonesia. His final project is application of stern foil on full draft patrol vessel at high speed condition using computational fluid dynamics (CFD) methods. His work is very significant on this paper to compute six degrees of freedom on the simulation models.

PUBLIC INTEREST STATEMENT

One of the keys to minimizing a ship's resistance in the high-speed vessel is the application of a stern foil, which affecting trim, reducing wave resistance and generate of lift with a component in the forward direction, so it could produce higher efficiency compared with a planning hull. This paper provides an investigation of application stern foil by the experiment and simulation. Application of stern foil in high-speed vessel was effective to reduce ship resistance of 22.3% on the half-full-load condition. Moreover, variation angles of attack of the stern foil reduced a ship resistance with a maximum reduction is 26.7% occurred at Fr 0.9 with angle 0° towards the x-axis.

cogent oa

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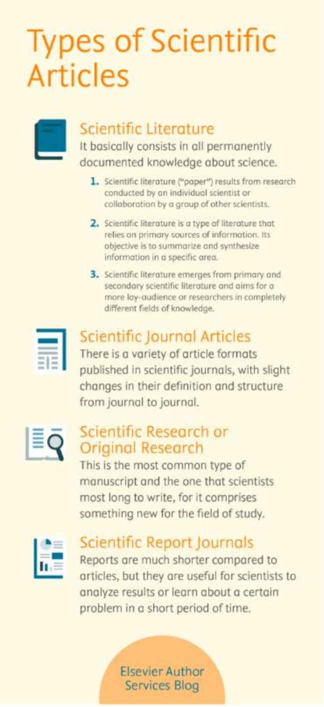
	Title	Type	SJR	H index	Total Docs. (2020)	Total Docs. (3years)	Total Refs. (2020)	Total Cites (3years)	Citable Docs. (3years)	Cites / Doc. (2years)	Ref. / Doc. (2020)
1	Nature	journal	15.993 Q1	1226	3189	9013	50004	134891	4049	14.96	15.68
2	Science	journal	12.556 Q1	1186	2929	8547	41521	116524	4493	13.08	14.18
3	Science advances	journal	5.928 Q1	146	2130	2892	107854	46429	2868	14.39	50.64
4	Proceedings of the National Academy of Sciences of the United States of America	journal	5.011 Q1	771	4191	11356	202921	113782	10217	9.57	48.42
5	National Science Review	journal	2.433 Q1	54	241	447	9062	3325	299	7.22	37.60
6	Science Bulletin	journal	1.983 Q1	112	365	833	12806	5639	616	7.21	35.08
7	iScience	journal	1.805 Q1	27	1073	724	65016	3676	717	5.08	60.59
8	Research	journal	1.800 Q1	16	143	130	9969	880	129	6.77	69.71
9	Journal of Advanced Research	journal	1.659 Q1	55	162	222	8514	2177	215	10.10	52.56
10	Scientific Reports	journal	1.240 Q1	213	21801	61528	1033089	282734	61524	4.13	47.39

Persiapan Naskah


Types of Scientific Articles

Scientific Literature
It basically consists in all permanently documented knowledge about science.

1. Scientific literature ("paper") results from research conducted by an individual scientist or collaboration by a group of other scientists.
2. Scientific literature is a type of literature that relies on primary sources of information. Its objective is to summarize and synthesize information in a specific area.
3. Scientific literature emerges from primary and secondary scientific literature and aims for a more lay-audience or researchers in completely different fields of knowledge.

Scientific Journal Articles
There is a variety of article formats published in scientific journals, with slight changes in their definition and structure from journal to journal.

Scientific Research or Original Research
This is the most common type of manuscript and the one that scientists most long to write, for it comprises something new for the field of study.

Scientific Report Journals
Reports are much shorter compared to articles, but they are useful for scientists to analyze results or learn about a certain problem in a short period of time.

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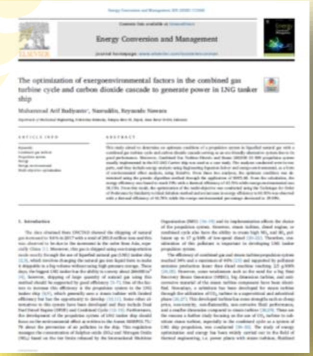
Jenis Paper Bereputasi Internasional

Paper Bereputasi Internasional

Prosiding	**Jurnal Q3 – Q4**	**Jurnal Q1 – Q2**

Standar Struktur Penulisan :
- Judul
- Nama Penulis dan Afiliasi
- Abstrak
- Pendahuluan
- Metode Penelitian
- Hasil dan Pembahasan
- Kesimpulan
- Daftar Pustaka



Persiapan Naskah

Penulisan Judul

Singkat – Padat – Jelas – Menarik

Judul yang paling sederhana = kalimat tujuan penelitian
Hindari mencamtumkan lokasi agar memperluas implikasi

Prosiding

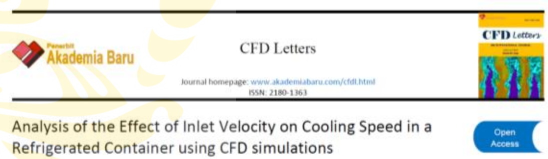
- Menggunakan istilah: Study, preliminary, initial, dst


4th International Conference on Mechanical Engineering Research (ICMER2017) IOP Publishing
IOP Conf. Series: Materials Science and Engineering **257** (2017) 012042 doi:10.1088/1757-899X/257/1/012042

Study on the CFD simulation of refrigerated container

Jurnal Q3 – Q4

- Menggunakan istilah: Analysis, modelling, simulation, dst

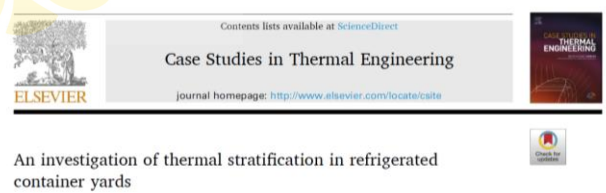

Akademia Baru
CFD Letters
Journal homepage: www.akademiabaru.com/cfdl.html
ISSN: 2180-1363

Analysis of the Effect of Inlet Velocity on Cooling Speed in a Refrigerated Container using CFD simulations

Open Access

Jurnal Q1 – Q2

- Menggunakan istilah: Investigation, Deep review, Novel, dst


Contents lists available at ScienceDirect
Case Studies in Thermal Engineering
journal homepage: http://www.elsevier.com/locate/csite
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An investigation of thermal stratification in refrigerated container yards

Persiapan Naskah

Nama Penulis dan Institusi

Konsisten

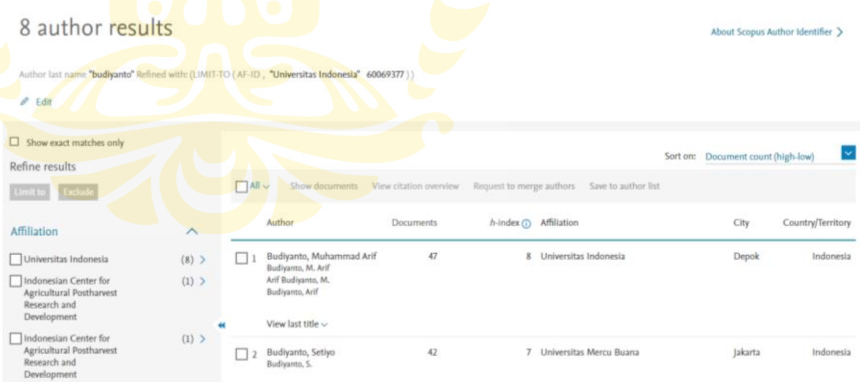
Apabila memungkinkan author terdiri dari lebih dari 1 disiplin, institusi dan negara yang berbeda
Apabila memungkinkan ajak kolega yang memiliki reputasi publikasi yang lebih tinggi, atau editor/reviewer journal

Prosiding

Jurnal Q3 – Q4

Jurnal Q1 – Q2

- ➢ Jangan gunakan singkatan pada nama belakang
- ➢ Tanpa gelar akademik, jabatan, pangkat Abstrak
- ➢ Institusi jelas dan lengkap



Persiapan Naskah

FTUI ENGINEERING FOR INDONESIA

Abstrak

Short introduction (background study) -> problem statement -> the objective -> briefing about the used method -> finding

#Minimize the use of abbreviations.

Prosiding

Jurnal Q3 – Q4

Jurnal Q1 – Q2

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The effect of solar radiation on the energy consumption of refrigerated container

A B S T R A C T

Refrigerated containers are a special type of cargo container, equipped with an integral refrigeration unit. External power supply is required to run the refrigeration system to control the temperatures inside the container during transporting perishable goods. The amount of power consumption of Refrigerated container will change depending on many external variables. This paper provides an investigation of the effect of solar radiation on the energy consumption of Refrigerated container through experimentation. 40 ft high cube Refrigerated container is employed as a measurement object. Environmental parameters have been collected, i.e., solar radiation, surface temperature, and air temperature. Data analysis shows that the direct effect of solar radiation on the container surface causes the temperature penetration of the container wall and increases the amount of energy consumption. With the maximum solar radiation of about 700 W/m2 causes the surface temperature to reach up to 35 °C, and the maximum power consumption reaches 7.5 kW/h during the noon.

Persiapan Naskah

Pendahuluan

Research background -> Literature review-> Research gap-> Objectives-> Significance & Contribution

#State of the art = proses menemukan keterbaruan (Novelty) => Literature review

Prosiding

Background	: Masalah Lokal dan Global
State of the art	: Baru sebatas latar belakang dan tujuan, jumlah rujukan < 20
Objective	: Belum spesifik menjawab permasalahan bidang tertentu
Contribution	: Implikasi belum terlalu jelas

Jurnal Q3 – Q4

Background	: Masalah Global
State of the art	: Runut, research gap belum jelas, jumlah rujukan <> 25
Objective	: Spesifik menjawab permasalahan bidang tertentu
Contribution	: Mempunyai implikasi tetapi belum terlalu jelas

Jurnal Q1 – Q2

Background	: Masalah Global
State of the art	: Runut, comprehensive, research gap jelas, jumlah rujukan > 25
Objective	: Spesifik menjawab permasalahan bidang tertentu
Contribution	: Mempunyai implikasi yang jelas pada bidang tertentu

Pendahuluan

Research background -> Literature review-> Research gap-> Objectives-> Significance & Contribution

scientific reports

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OPEN

Evaluation of CO_2 emissions and energy use with different container terminal layouts

Research background

As a logistics hub between land and sea transportation, container terminals perform an absolutely critical function in the seaborne trade. As a result of the continuous global competition in this field, port operators are currently focusing on sustainable development of container terminals[1,2]. Two of the extremely acute problems requiring urgent solutions are environmental pollution and global warming[3,4]. Thus, reducing CO_2 emissions and energy consumption at the container terminal is essential to mitigate these environmental impacts[5]. Accordingly, several countries have set targets for reducing CO_2 emissions per unit throughput at the container terminal[6–9]. Currently, the construction of modern container terminals adopts the green port perspective. A green port refers to a port having a sustainable environment, a fair use of resources, low energy usage and low emissions[10,11].

Persiapan Naskah

FTUI
ENGINEERING FOR INDONESIA

Pendahuluan

Research background -> Literature review-> Research gap-> Objectives-> Significance & Contribution

Literature review

Several container terminals have carried out plans of action for emission mitigation and energy efficiency. In order to these plans, several container ports have carried out technological developments such as electrification of container handling equipment[12], power saving of reefer containers[13], and the use of alternative fuels also renewable energies[14]. Ports around the world used different methods to calculate the carbon emissions. For example, Port Phillip, Australia and the US Port of Long Beach used the air emission inventory method to calculate emissions[15,16]. The ports of Taipei also calculated their emissions using an activity-based emission model[17]. Similar methods of clarifying entire port-related works by all modes of transport were used in the port of Busan[18]. Other typical methods have also been used in the Port of Los Angeles, USA, which accounts for carbon emissions from all types of active vessels and all equipment used in the port. These data were then analysed to determine the potential emission reductions[19,20]. A research review of the development of maritime logistics in green ports has been carried out using extensive bibliometric and network analysis tools[21]. In addition, a bottom-up study was carried out in Nanjing Longtan Container Terminals, involving the conditions, specifications and burden factor of the equipment as well as the modification of the emission factor[22].

Moreover, a direct method has been proposed for estimating the carbon emissions based on the distance travelled by the vessels while accounting for all components in the port[23,24]. Other researchers compared rubber-tired gantries (RTGs) to electrical RTGs coming out of the point of view of CO_2 reduction and energy conservation[25]. Other methods for measuring emissions are based on estimating the vehicle pollution factors according to geometric and traffic conditions, taking into account the basic activities of the vehicle along with the duration of the journey[26–28]. On the other hand, the distribution of emissions from the production activities of ports can be estimated using emission burden inventories and the record of maritime transport activities in

Persiapan Naskah

Pendahuluan

Research background -> Literature review-> Research gap-> Objectives-> Significance & Contribution

Literature review->

ports. The methodology for estimating emissions from light freight vehicles and passenger were conducted by checking the fuel use, throttle position, engine speed, oil temperature and engine coolant[29]. Emission reduction was estimated based on the energy consumption of RTGs, automatic stacking cranes (ASCs) and yard trucks[30]. Using a renewable power source for container-handling equipment achieved significant emission reductions[31]. Approximately 55% of the total emissions in a port are from ships. Thus, it is also necessary to measure emissions from berthing as the ship's auxiliary engine continues to function during loading and unloading[32]. The energy factor required by an additional engine is 40% during berthing[33].

Research gap->

Very few studies have addressed the effects of terminal layouts on the energy consumption and CO_2 emissions. Research on container layout design generally investigates resource allocation, optimisation of block length or width and selection of operating technologies. The technologies utilized in these investigations involve simulation experiments and derivation of mathematical formulas. Terminal layouts were studied in one study, taking into account the effect of heap extent and total of layers in a section using a straightforward rule to assess the anticipated amount of repetitions concerning random sampling in the stacking field with regression analysis[34]. An arbitrary design of container fields that considers a layout with transfer paths was introduced in other studies using integer linear programmes. Another model involving an integrated queue network method was applied to investigate 1008 parallel arrangement configurations, resulting in container terminals with parallel arrays that exhibited up to 12% enhanced performance regarding container throughput time compared to terminals with upright heap arrangement[35]. Simulation was also used by several researchers to overcome the high uncertainties in complex terminal systems[36]. Simulation studies evaluated the impacts of yard block layout parameters, such as the height, width and length of the block, and quadruple crane-attached-stand-crane structures, on terminal performances and the yard[37]. As calculated in regard to the work regular level of the cranes, the general long-term efficiency of the port container terminal is affected by the breadth of the depository block in the terminal container yard[38]. An optimisation framework based on simulations was also suggested to acquire an economical and dependable layout solutions that take into account the distribution method of yard equipment and physical arrangement in container terminals[39]. Based on this research, terminal layouts were divided into two categories, namely parallel layouts, which include the majority of layouts currently available, and perpendicular layouts, which are layouts used in automated container terminals that are still in the development phase[40].

Persiapan Naskah

Pendahuluan

Research background -> Literature review-> Research gap-> Objectives-> Significance & Contribution

Objectives-> Significance & Contribution

namely parallel layouts, which include the majority of layouts currently available, and perpendicular layouts, which are layouts used in automated container terminals that are still in the development phase[40].

However, most researchers have discussed the optimisation of container block usage and the use of available resources. Very few studies have discussed energy consumption and the resulting CO_2 emissions. Thus, the aim of this study is to estimate the energy consumption and CO_2 emissions at different container terminal layouts. Energy consumption was evaluated in a year operation and CO_2 emissions were estimated based on its energy consumptions and movement-per-modal methods. As a case study, two major container terminals in Indonesia were evaluated. The contribution of this paper is twofold, first is to verify the estimation model of CO_2 emissions in container terminals, where the movement-per-modal method was verified with emission based on energy consumption. The second is more interesting is to provide an overview of the feature of parallel and perpendicular layouts of the container terminal in terms of CO_2 emissions.

Pendahuluan

#State of the art = proses menemukan keterbaruan (Novelty) =>Tabel Literature review

No	Penulis & Judul	Tujuan	Data	Metode	Hasil
1	Harry Geerlings & Ron van Duin (2011) [1]	Perhitungan emisi di pelabuhan dengan teori pergerakan petikemas (modality movement)	Perhitungan dengan menggunakan teori pergerakan peti kemas	Menggunakan data dari alat dan layout pelabuhan, lalu mengunakan metode pergerakan peti kemas	Metode untuk estimasi perhitungan emisi CO_2 di terminal peti kemas
	A new method for assessing CO_2-emissions from container terminals: a promising approach applied in Rotterdam	identifikasi metode yang lebih efektif untuk mengurangi emisi CO_2 di terminal peti kemas	Faktor emisi, Jenis bahan bakar, Jenis mesin dari alat-alat di pelabuhan		Gambaran ideal dari emisi CO_2 dengan metode pergerakan peti kemas
2	Jinxian weng, Kun Shi, Xiafan Gan, Guorong Li, Zhi Huang (2019) [2]	Estimasi emisi kapal dengan AIS sistem	AIS data: tipe kapal, jenis kapal, daya mesin, grosstonage, speed design.	perhitungan dengan metode "bottom up"	Data sebaran emisi kapal di sungai yangtze
	Ship emission estimation with spatial-temporal resolution in Yangtze	Mengetahui distribusi emisi kapal secara spasial dan temporal	lokasi, durasi, load faktor		

Persiapan Naskah

Metode Penelitian

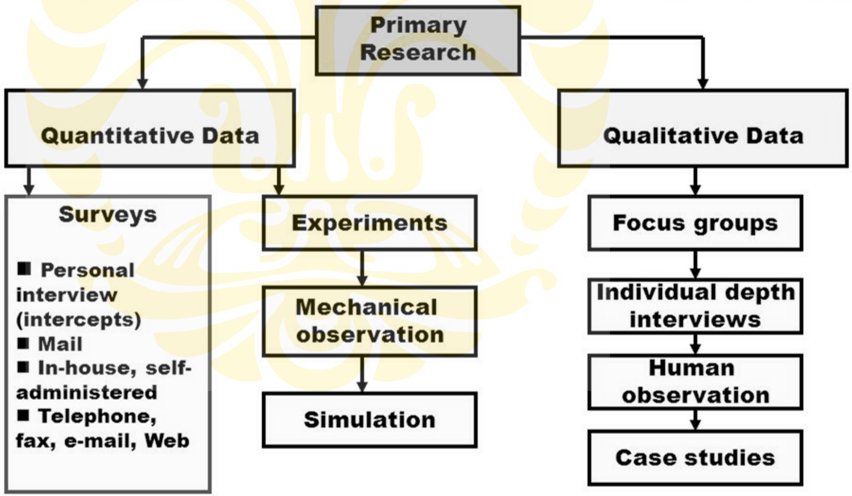
- **Research Design**
- **Subject & Object Characteristic**
- **Data Collection Process**
- **Data Analysis**

Tips:
Dijelasakan dengan rinci
Gunakan flowchart atau ilustrasi
Tampilkan foto objek penelitian

Prosiding

Jurnal Q3 – Q4

Jurnal Q1 – Q2



Persiapan Naskah

Metode Penelitian

➢ Research Design

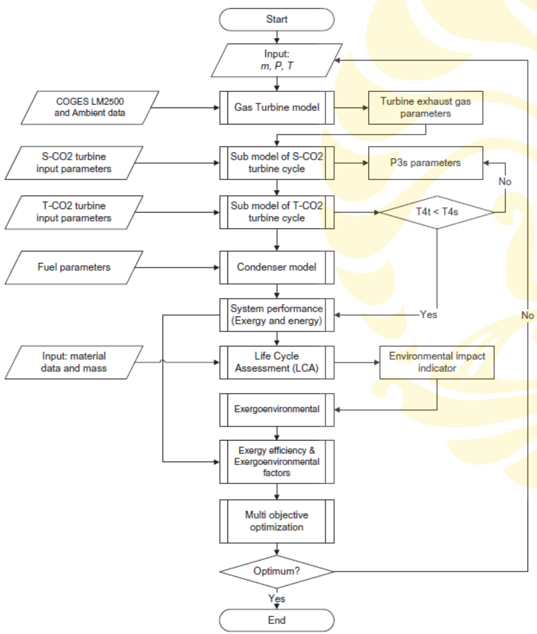


Fig. 1. Flowchart of Method of the study.

Energy Conversion and Management 205 (2020) 112468

Contents lists available at ScienceDirect

Energy Conversion and Management

journal homepage: www.elsevier.com/locate/enconman

The optimization of exergoenvironmental factors in the combined gas turbine cycle and carbon dioxide cascade to generate power in LNG tanker ship

The exergy analysis conducted made use of some assumptions obtained from journals and books and they include:

1) Temperature and environment pressure at 15 °C and 100.3 kPa respectively.
2) The system was a steady-state
3) The fuel used was boiled off-gas from shipload which was natural and perfect burned methane.
4) The pressure drop from the heat exchanger was 2%
5) Energy reduction and pressure drop of the pipe system was neglected
6) Change in kinetic and potential energies was neglected due to its minor effect on the overall system
7) CO_2 turbine efficiency of 85%, compressor efficiency of 82%, pump efficiency of 80%, heater efficiency of 90% and 98%, each for supercritical and trans-critical, and generator efficiency of 98%.

Metode Penelitian

➢ Subject & Object Characteristic

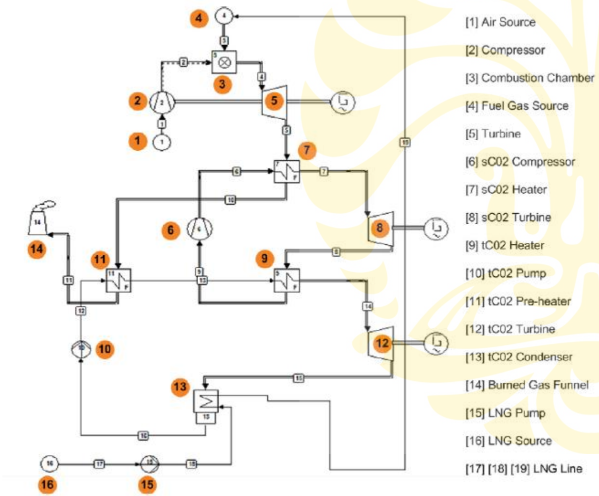


Fig. 2. . Schematic diagram of the propulsion system of the combined cycle between gas turbine and CO_2 cascaded.

Table 1
The information of gas turbine LM2500 25 MW [47].

	Parameter	Rate
1	*Net power* (MW)	24.05
2	Thermal Efficiency (%)	36%
3	Mass flow of waste gas (kg/s)	71
4	The temperature of waste gas (C)	566
5	Pressure ratio	18
6	Turbine rotational speed (rpm)	3600
7	Specific Fuel Consumption, SFC (g/kWh)	227

Persiapan Naskah

Metode Penelitian

➢ Data Collection Process

Table 4
Material and mass of each component [58].

Component	Material	Massa (kg)
Air compressor in the gas turbine	*Cast iron* 25% *Iron-nickel* 75%	750
Combustion chamber in the turbine gas	*Chromium steel* 67% *Unalloyed steel* 33%	3125
Turbine LM2500	*Unalloyed steel* 25% *Chromium steel* 75%	10,014
Supercritical CO_2 compressor	*Ferronickel*	750
Supercritical CO_2 heater	*Chromium steel* 50% Aluminum *alloy* 50%	300
Turbine *supercritical* CO_2	Titanium 34% *Ferronickel* 66%	68
Trans-critical CO_2 pump	*Iron nickel*	48
Trans-critical CO_2 preheater	Magnesium *alloy* 50% *Ferronickel* 50%	250
Trans-critical CO_2 heater	Aluminum *alloy* 50% *Ferronickel* 50%	400
Turbine *trans-critical* CO_2	Titanium 34% *Ferronickel* 66%	68
LNG pump	*Iron-nickel–chromium alloy* 22% *Ferronickel* 78%	189.5
Condenser	Aluminum, *cast alloy* 28.8% *Magnesium alloy* 71.2%	650

Table 6
The limitation of each variable of multi-objective optimization.

Variable	Limitation
The cut-in temperature of the compressor in *supercritical* CO_2 (T_{1s})	305 – 315 K
Cut-in pressure of compressor in *supercritical* CO_2 (P_{1s})	7400 – 8000 kPa
The final temperature of gas turbine waste (T_{6g})	345 – 360 K
Cut-out pressure of gas turbine (P_{4g})	95 – 125 kPa
Mass flow of turbine in *supercritical* CO_2 (m_s)	18 – 30 kg/s
Mass flow of turbine in *trans-critical* CO_2 (m_t)	18 – 30 kg/s
Cut-in pressure of turbine in *supercritical* CO_2 (P_{3s})	19,000 – 21000 kPa
Cut-in pressure of turbine in *trans-critical* CO_2 (P_{4t})	19,000 – 21000 kPa
Cut-in pressure of compressor in *trans-critical* CO_2 (P_{1t})	840 – 860 kPa
The cut-in temperature of the pump in *trans-critical* CO_2 (T_{1t})	225 – 235 kPa

Metode Penelitian

➢ Data Analysis

Table 2
Exergy analysis on each point of the propulsion system.

Point	Thermodynamic input	*exergy rate*
Ambient	T = 298.15 K P = 101.3 kPa	
1 g	T = 298.15 K *P = Pambient – 6.895* kPa m = 68.34 kg/s	$Ex_{1g} = m_{1g}x(h_{1g} - h_{amb} - ((T_{amb} - 273.15)x(s_{1g} - s_{amb})$ $W_{compgt} = m_{1g}x(h_{2g} - h_{1g})$
2 g	$T = T1g/1\text{-}\eta_{gt}$ K $P = P1g \times Pr$ kPa $m = (1\text{–}0.2) \times m_{1g}$ kg/s	$Ex_{2g} = m_{2g}x(h_{2g} - h_{amb} - ((T_{amb} - 273.15)x(s_{2g} - s_{amb})$
3 g	$T = T4g \times (T2g/T1g)$K $P = P4g \times Pr$ kPa $m = mf + m_{2g}$ kg/s	$Ex_{3g} = m_{3g}x(h_{3g} - h_{amb} - ((T_{amb} - 273.15)x(s_{3g} - s_{amb})$ $Q_{in} = m_{2g}x(h_{3g} - h_{2g})$ $Ex_{fuel} = 2.46xLHV$
4 g	T = 839.15 K (catalog GT) P = 100 kPa (optimized) m = 71 kg/s (catalog GT)	$Ex_{4g} = m_{4g}x(h_{4g} - h_{amb} - ((T_{amb} - 273.15)x(s_{4g} - s_{amb})$ $W_{GT} = P_{GT} + W_{compGT}$
5 g	$T = T4g - (\eta_{sheater}x(T4g - T2s))$ K $P = P4g - (2\%\ x\ P4g)$ kPa m = 71 kg/s	$Ex_{5g} = m_gx(h_{5g} - h_{amb} - ((T_{amb} - 273.15)x(s_{5g} - s_{amb})$
6 g	T = 340 K (optimized) $P = P5g - (2\%\ x\ P5g)$ kPa m = 71 kg/s	$Ex_{6g} = m_{6g}x(h_{6g} - h_{amb} - ((T_{amb} - 273.15)x(s_{6g} - s_{amb})$
1 s	T = 305.6 K (optimized) P = 7750 kPa (optimized) m = 19.59 kg/s (optimized)	$Ex_{1s} = m_{1s}x(h_{1s} - h_{amb} - ((T_{amb} - 273.15)x(s_{1s} - s_{amb})$ $W_{scomp} = m_sx(h_{2s} - h_{1s})$
2 s	$P = P3s + (2\%\ x\ P3s)$ kPa T = obtained from enthalpy equation of compressor isentropic $(\eta_{scomp} = (h_{2sise} - h_{1s})/(h_{2s} - h_{1s})$ P isentropic = P3s kPa m = 19.59 kg/s	$Ex_{2s} = m_{2s}x(h_{2s} - h_{amb} - ((T_{amb} - 273.15)x(s_{2s} - s_{amb})$

Persiapan Naskah

Metode Penelitian

- **Research Design**
- **Subject & Object Characteristic**
- **Data Collection Process**
- **Data Analysis**

Tips:
Dijelasakan dengan rinci
Gunakan flowchart atau ilustrasi
Tampilkan foto objek penelitian

Prosiding

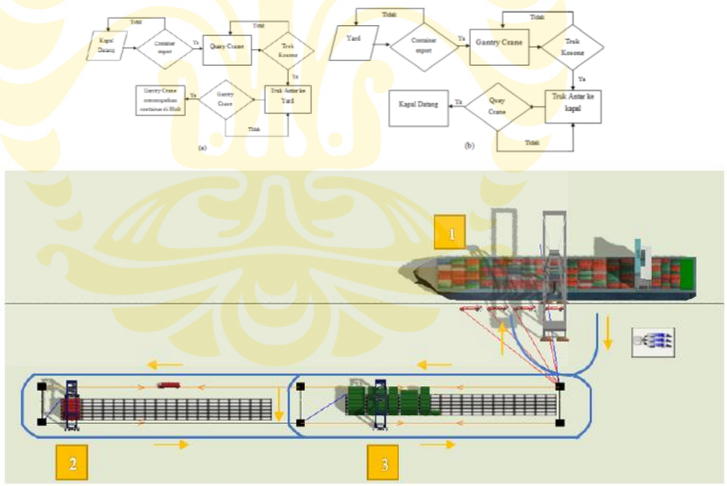


Figure 2. Flowchart visualization in the Flexterm model

Metode Penelitian

- **Research Design**
- **Subject & Object Characteristic**
- **Data Collection Process**
- **Data Analysis**

Tips:
Dijelasakan dengan rinci
Gunakan flowchart atau ilustrasi
Tampilkan foto objek penelitian

Jurnal Q3 – Q4

$$z = z_a \cos(\omega_e t + \varepsilon_z \varsigma) \neq 0 \quad (3)$$

$$y = y_a \cos(\omega_e t + \varepsilon_y \varsigma) \neq 0 \quad (4)$$

Table 1
Scaled ship's dimension

Model		
Length Overall (LoA)	1	Meter
Beam (B)	0.24	Meter
Draught (T)	0.04	Meter
Displacement	3.25	Kg
Block Coefficient (Cb)	0.37	
Model scale	1:25	

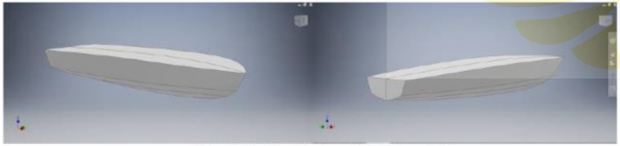


Fig. 1. Patrol hull design without stern foil

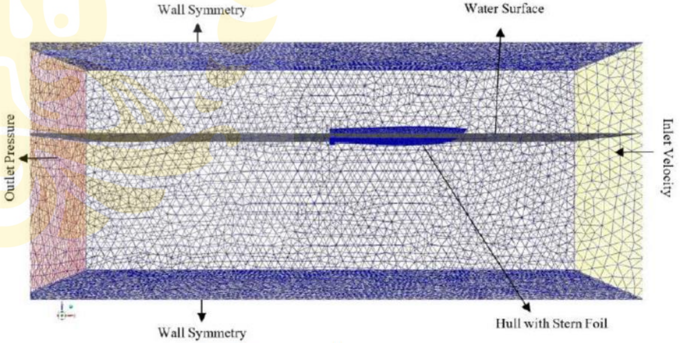


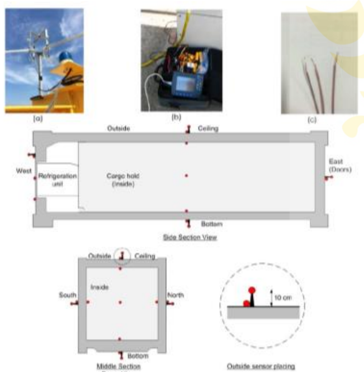
Fig. 4. Boundary condition of simulation model

Metode Penelitian

- **Research Design**
- **Subject & Object Characteristic**
- **Data Collection Process**
- **Data Analysis**

Tips:
Dijelasakan dengan rinci
Gunakan flowchart atau ilustrasi
Tampilkan foto objek penelitian

Jurnal Q1 – Q2



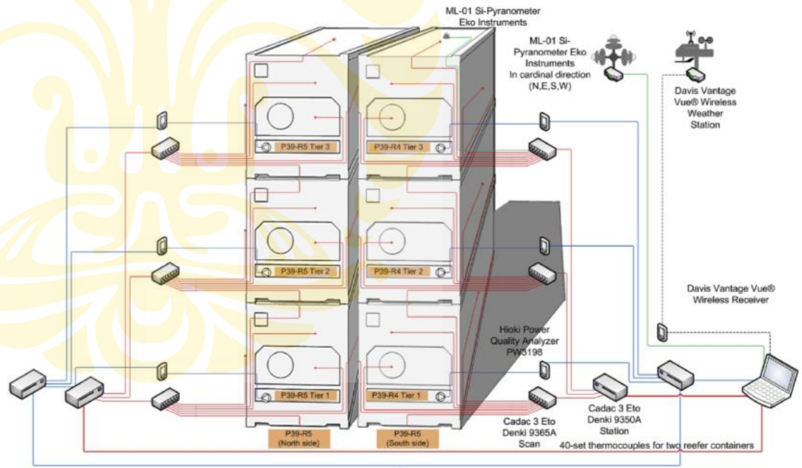


Fig. 2. Device and sensor locations for onsite measurement experimentation.

Persiapan Naskah

Hasil dan Pembahasan

Hasil Riset & Analisanya

Buat uratan hasil riset -> mencapai/menjawab tujuan penelitian
Gunakan ilustrasi (gambar & tabel)
Jelaskan hasil penelitian yang didapat
Hubungkan hasil penelitian dengan penelitian sebelumnya
Gunakan Software pengolah dan penyaji data yang tepat: Microsoft Excel, Origin, SciDavis, Python dst.

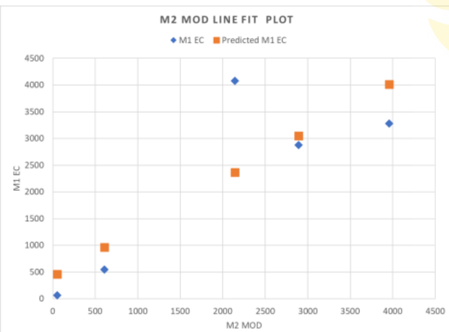
Prosiding	Hasil riset yang dibahas : 1 Parameter/variabel Narasi pembahasan : Deskriptif
Jurnal Q3 – Q4	Hasil riset yang dibahas : 2-3 Parameter/variabel Narasi pembahasan : Deskriptif
Jurnal Q1 – Q2	Hasil riset yang dibahas : >2 Parameter/variabel Narasi pembahasan : Investigatif

Persiapan Naskah

Hasil dan Pembahasan

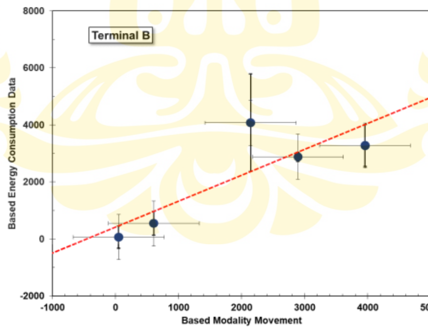
Prosiding

Hasil yang dibahas:
- Trend grafik



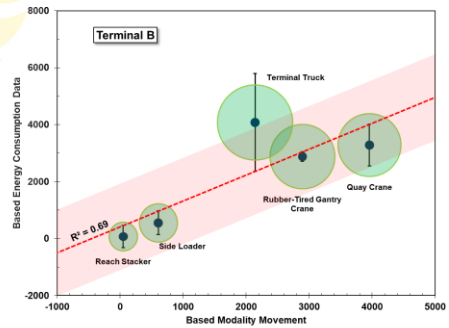
Jurnal Q3 – Q4

Hasil yang dibahas:
- Trend grafik
- Analisa trend grafik



Jurnal Q1 – Q2

Hasil yang dibahas:
- Trend grafik
- Analisa trend grafik
- Hubungan dengan penelitian sebelumnya
- Menekankan pada temuan



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Hasil dan Pembahasan

Jurnal Q1 – Q2

Kaitkan hasil pembahasan dengan bidang riset dan juga implkasi terhadap masalah/isu global

Policy implications: toward sustainable development goals. With more than 80% of global trade by volume carried by maritime transport, In line with the OECD's industrial production growth rate, the demand for container trade has been increasing over the past decades, driven by an expanding service and retail sector in developed economies. Amid of COVID 19 pandemic experienced globally, the outlook for the container shipping markets remains strong moving into 2021[53]. To cope with this demand, container terminal still plays a key role in sustainable development and prosperity to support this trade volumes.

The key drivers for the container trade demand will consist of structural changes in the industrial and business cycle of emerging economies[54]; reshoring activities motivated by automation and the sustainable development goals (SDGs) that consists of 17 interlinked global goals blueprint to achieve a better and more sustainable future[55]. In order to pursue the target of SDGs, global container terminal players under the International Association of Ports and Harbors along with the International Maritime Organization (IMO) decided to set up a World Ports Sustainability Program, intended to promote the preservation of environments by making continual improvements in operations through design and operation[56]. Moreover, IMO specifically targeting a reduction of CO_2 emissions reduction by 50% in 2050[49].

The implication of this research is to set-up a simple yet robust framework to measure energy consumption and CO_2 emissions at container terminals. Evaluation of energy consumption of the port should start from the selection of layout all the way through investing in energy-efficient port equipment (stationary and mobile material handling equipment, lighting and technology), that will support the operation of the selected layout. Overall, this framework will contribute directly to the 13th Goal, i.e. Affordable and Clean Energy, by improving energy efficiency of port and adapting port infrastructure and port related operations to Climate Change, as well as aiming for the 9th SDG, i.e. Industry, Innovation and Infrastructure by foreseeing the adaptation of port infrastructure to withstand climate change.

Persiapan Naskah

Kesimpulan

Menjawab Tujuan Penelitian

Menyatakan penelitian telah dilakukan sesuai dengan metode yang direncanakan
Menyimpulkan hasil temuan, diambil dari hasil dan pembahasan (bukan copy-paste)
Memuat saran pengembangan dan arah penelitian lanjutan.

Prosiding

Jurnal Q3 – Q4

Jurnal Q1 – Q2

Conclusions

Energy consumption and CO_2 emissions at container terminals were calculated in different terminal layouts using two existing terminals as a case study. Energy consumption has been calculated based on utility data and fuel consumption as well as electricity consumption of each container-handling equipment. The energy consumption of terminals A and B (with the parallel and perpendicular layouts, respectively) was calculated based an overview of the energy consumption from each equipment. It was found that RTG cranes have the largest contribution to the energy consumption in terminal A (50% of total energy consumption), whereas in terminal B, truck terminals were the largest contributor (53% of total energy consumption). These results show that the terminal layout affects the energy consumption of each container-handling equipment used at the container terminals. In terminal B, the truck terminal exhibited the largest contribution because the ship berth is located far from the container yard, which may not apply to other terminals.

The number of movements and travelling distance form the basis for estimating CO_2 emissions. These results were compared with those estimated based on the conversion of energy consumption using emission factors. The CO_2 emissions estimated by the movement modality agreed well with those estimated based on energy consumption data. These results show that the contribution to the CO_2 emissions in the two studied terminals were associated with the number of containers throughout as the CO_2 emissions in terminals A and B terminals (16.4 kg/TEUs and 18.7 kg/TEUs, respectively) are relatively equivalent. This indicates that terminal B with a perpendicular layout, which is claimed to be a modern layout, exhibited emission quantities equivalent to those of terminal A, which has a more common parallel layout. These results may shed light on the sustainable development of container terminals because they prove that both layouts are suitable for future development. Furthermore, this study constructs a baseline in furtherance of cutting down CO_2 emissions at container terminals to achieve the IMO targets that contribute to United Nation's Sustainable Development Goals.

Persiapan Naskah

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Jurnal Q3 – Q4

Jurnal Q1 – Q2

References

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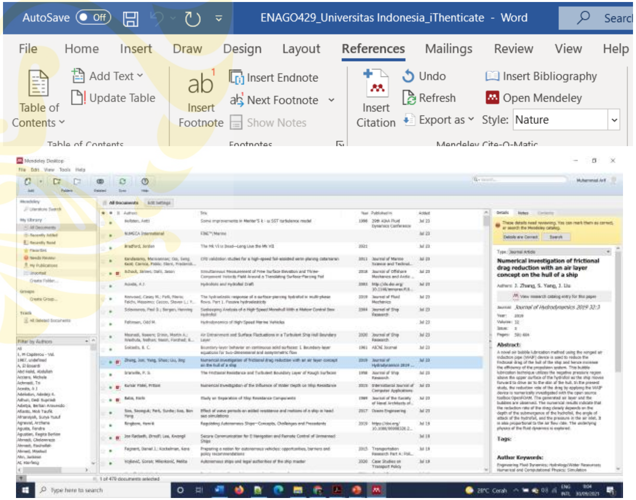

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Pendahuluan	Background, Objective	Background, Literature Review, Objective	Background, State of the art, Objective, Contribution
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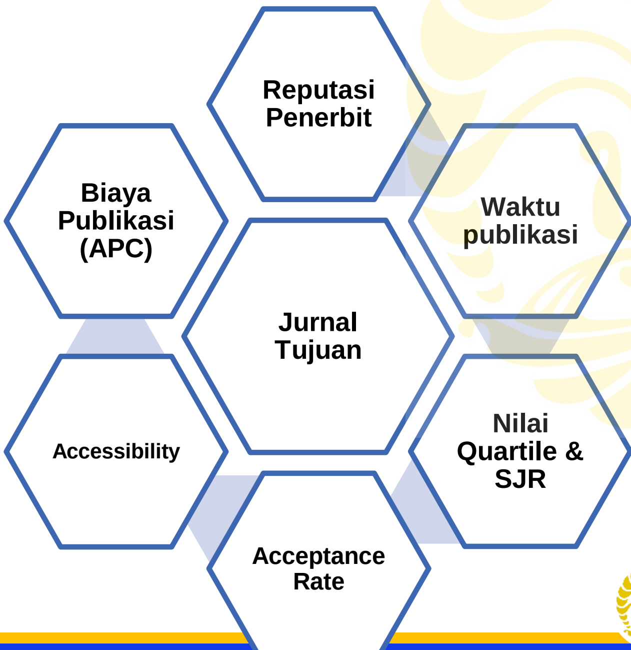

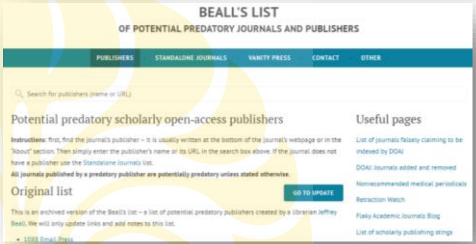

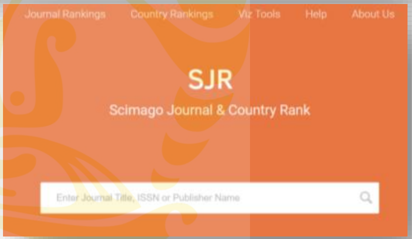

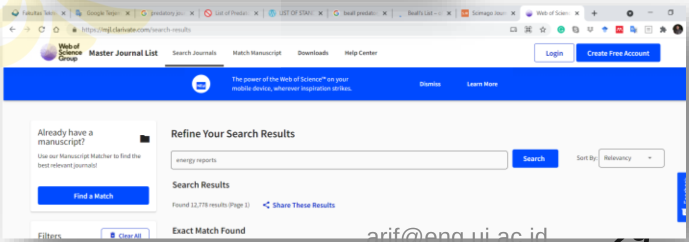

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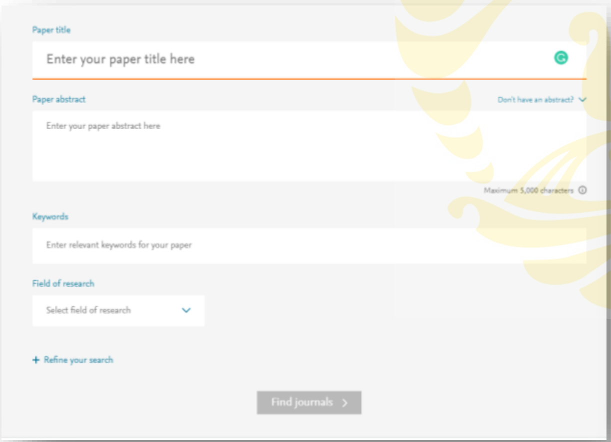

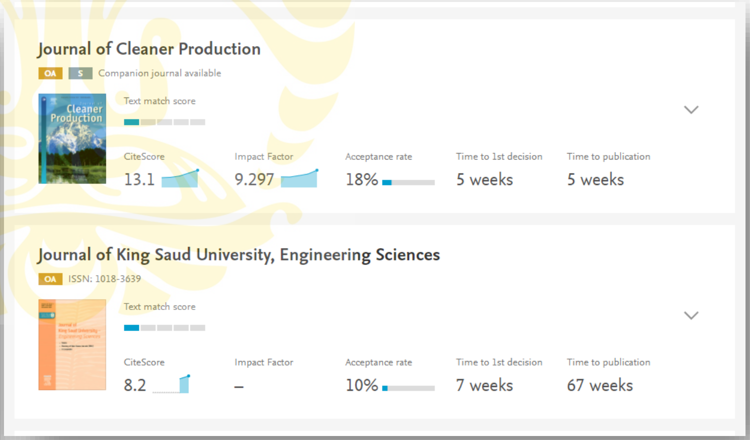

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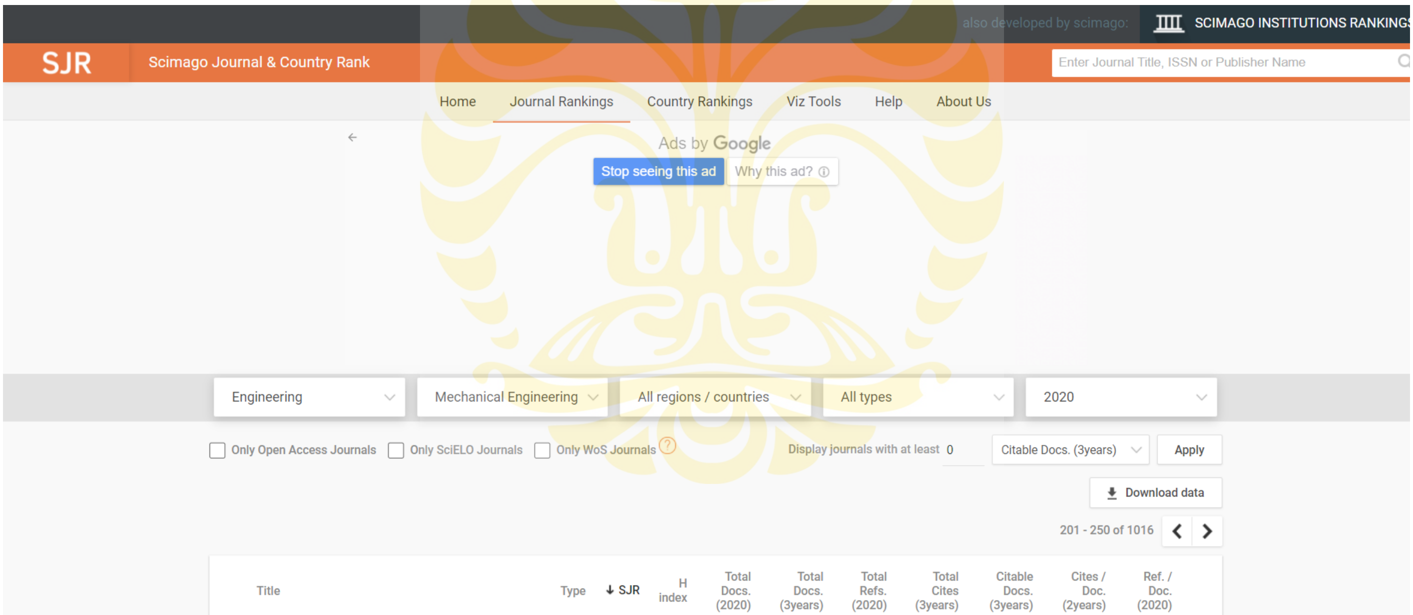

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203	Archive of Applied Mechanics	journal	0.540 Q2	59	174	422	6559	899	415	2.19	37.70
204	Production Engineering	journal	0.536 Q2	33	64	223	1834	391	223	1.64	28.66
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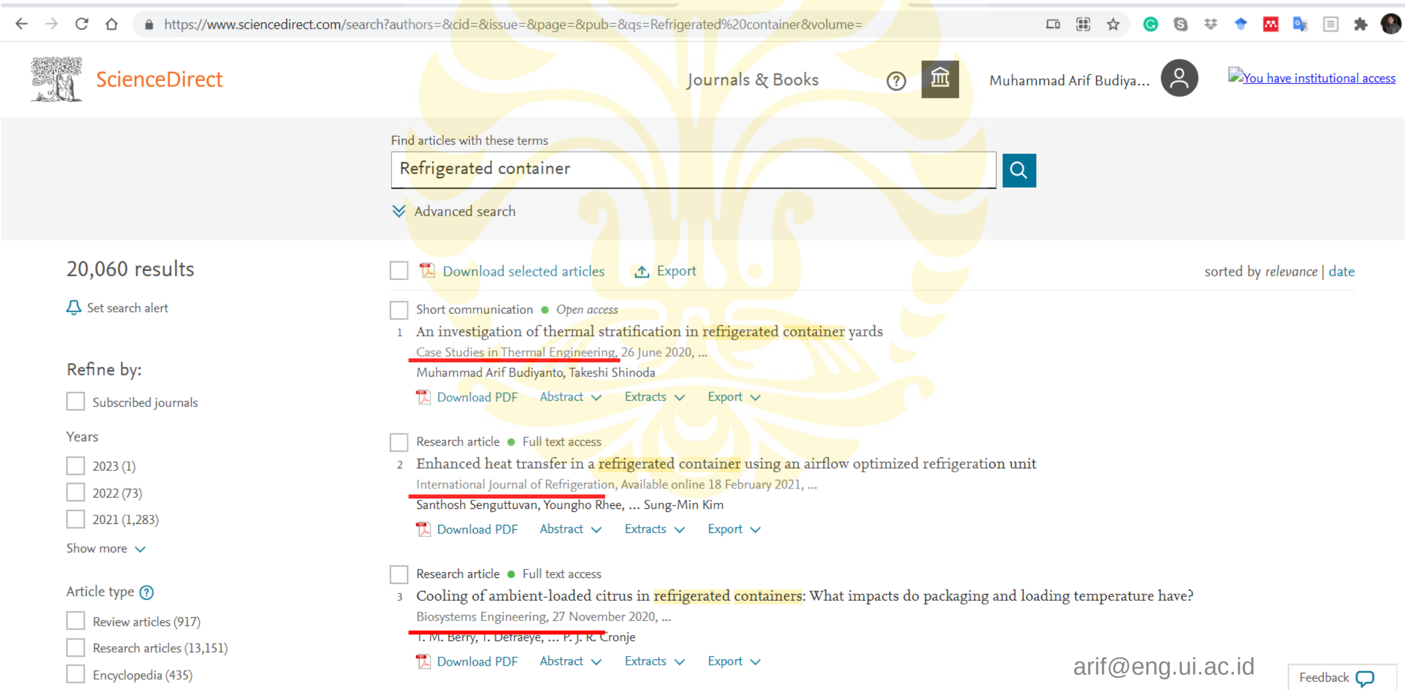

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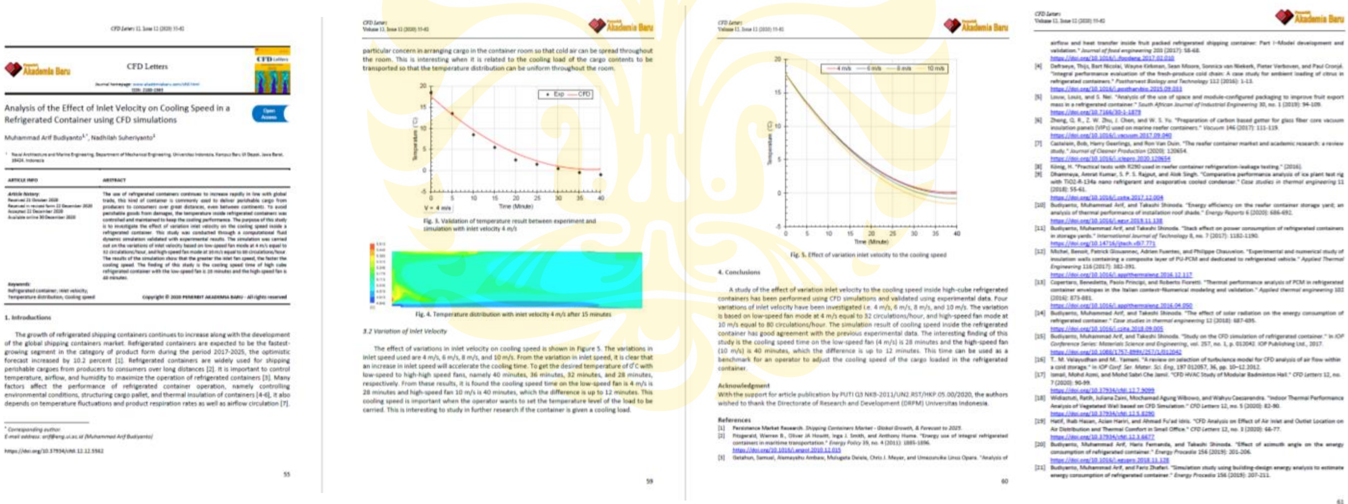

CFD Letters

Analysis of the Effect of Inlet Velocity on Cooling Speed in a Refrigerated Container using CFD simulations

Muhammad Arif Budiyanto, Nadhilah Suheriyanto

1. Introductions

Fig. 3. Validation of temperature result between experiment and simulation with inlet velocity 4 m/s

Fig. 4. Temperature distribution with inlet velocity 4 m/s after 15 minutes

3.2 Variation of Inlet Velocity

Fig. 5. Effect of variation inlet velocity to the cooling speed

4. Conclusions

Acknowledgement

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Received 3 October 2019; Received in revised form 31 December 2019; Accepted 2 January 2020
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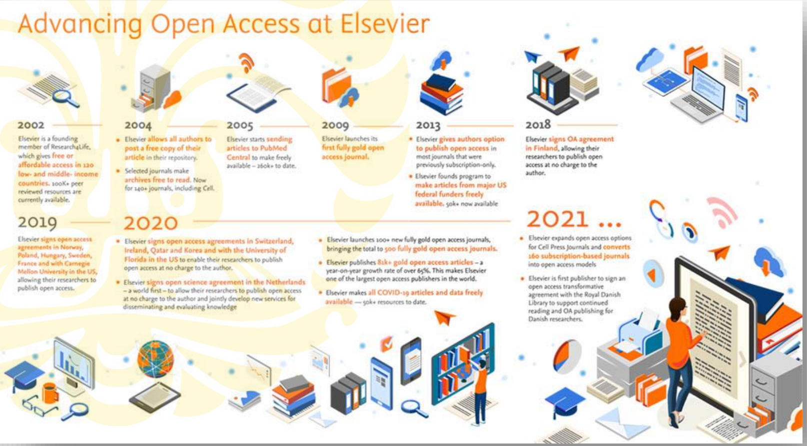

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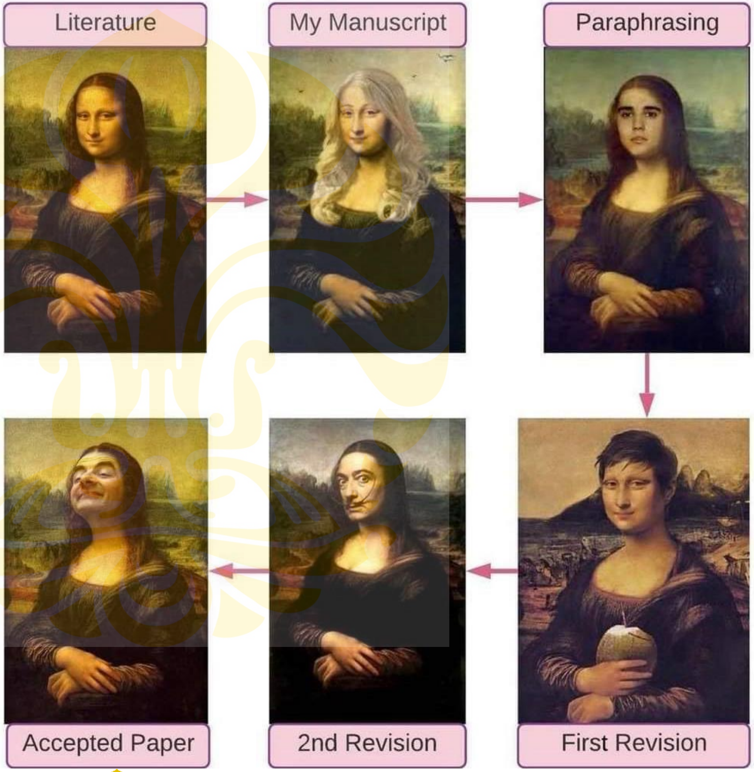

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