

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

Judul Artikel Ilmiah : Experimental Study of Stationary-Head/Channel Cover STHE Prototype Using ε-NTU Method
 Nama Penulis : **Harto Tanujaya**, I Wayan Sukania
 Jumlah Penulis : 2 (dua)
 Status Pengusul : Penulis Pertama
 Identitas Buku Ilmiah : a. Nama Jurnal : Experimental Techniques
 b. Nomor ISSN : 0732-8818 (print), 1747-1567 (online)
 c. Vol. No. Bln. Th. : Vol. 43, Issue 6, Dec 2019
 d. Penerbit : Springer International Publishing
 e. Jumlah halaman : 11 halaman, 645 - 655
 f. Alamat Web Jurnal : <https://link.springer.com/article/10.1007%2Fs40799-019-00322-2>
 g. DOI Artikel : <https://doi.org/10.1007/s40799-019-00322-2>

Kategori Publikasi Buku Ilmiah (beri (√) pada kategori yang tepat)

Jurnal Ilmiah Internasional Bereputasi
 Jurnal Ilmiah Internasional
 Jurnal Ilmiah Nasional Terakreditasi
 Jurnal Ilmiah Nasional Tidak Terakreditasi
 Jurnal Ilmiah Terindex di DOAJ/CABI/COPERNICUS/Lainnya

Hasil Penilaian *Peer Review*

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah (isi di kolom yang sesuai)					Nilai Akhir <i>peer</i> Yang Diperoleh
	Internasional Bereputasi	Internasional	Nasional Terakreditasi	Nasional Tidak Terakreditasi	Nasional Terindex DOAJ dll	
Kelengkapan dan kesesuaian unsur isi <i>prosiding</i> (10%)	94%x10% x 40					3,76
Ruang lingkup dan kedalaman pembahasan (30%)	95%x30% x 40					11,40
Kecukupan & kemutakhiran data/informasi dan metodologi (30%)	95%x30% x 40					11,40
Kelengkapan unsur & kualitas penerbit (30%)	97%x30% x 40					11,64
Nilai <i>peer</i> Maksimal (100%)	40					38,2
Kontribusi Pengusul; (nilai akhir <i>peer</i> x bobot penulis pertama) = 38,2 x 60% = 22,92						22,92
Komentar/Usulan <i>Peer Review</i> : (Terlampir hal. 2)	1. Tentang kelengkapan dan kesesuaian unsur: 2. Tentang ruang lingkup dan kedalaman pembahasan; 3. Kecukupan dan kemutakhiran data/informasi dan metodologi; 4. Kelengkapan unsur dan kualitas penerbit: 5. Indikasi Plagiasi: 6. Kesesuaian Bidang Ilmu: <i>Terlampir</i>					

Jakarta, 18.12.2019
 Penilai I



(Prof. Dr. Ir. Agustinus Purna Irawan)
 NIDN/NIP : 0328087102 / 10398021
 Jabatan/Pangkat/Bidang Ilmu: Professor/IVC/Teknik Mesin
 Unit Kerja: Fakultas Teknik – Universitas Tarumanagara

KOMENTAR
PEER REVIEW

1. Tentang kelengkapan dan kesesuaian unsur:

Artikel dengan judul **Experimental Study of Stationary-Head/Channel Cover STHE Prototype Using ϵ -NTU Method**, ditulis secara benar sesuai dengan standar penulisan artikel ilmiah yang memuat pendahuluan, metode/peralatan yang digunakan, pengambilan data dan data, analisa dan kesimpulan.

2. Tentang ruang lingkup dan kedalaman pembahasan:

Artikel dengan judul **Experimental Study of Stationary-Head/Channel Cover STHE Prototype Using ϵ -NTU Method**, membahas studi kasus secara eksperimental tentang efektivitas alat penukar kalor dengan spesifik dan mudah dipahami.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi;

Metodologi terstruktur dan jelas, data dan referensi yang diambil up to date.

4. Kelengkapan unsur dan kualitas penerbit:

Editorial board dan reviewer untuk Jurnal "**Experimental Techniques**" jelas dan terstruktur dan dapat diakses online. Penerbit **Springer International Publishing** dapat dilacak melalui daring, bereputasi, terindeks oleh **Scopus dan web of science, berimpact factor dan memenuhi syarat jurnal ilmiah internasional, Q3, SJR (2018) 0,32, dan H Index 28**. Jurnal ber ISSN/ISBN.

5. Indikasi Plagiasi:

Artikel dengan judul **Experimental Study of Stationary-Head/Channel Cover STHE Prototype Using ϵ -NTU Method** yang diterbitkan oleh Springer International Publishing, dan dapat dibaca secara daring melalui <https://link.springer.com/journal/40799/onlineFirst>, dan DOI <https://doi.org/10.1007/s40799-019-00322-2> tidak ditemukan indikasi plagiasi dengan tingkat kesamaan menggunakan software **Turnitin sebesar 2 %**.

6. Kesesuaian Bidang Ilmu:

Artikel tersebut membahas tentang alat penukar kalor dan ada Linieritas keilmuan dengan pengusul.

Jakarta, 18.12. 2019
Penilai I



(Prof. Dr. Ir. Agustinus Purna Irawan)
NIDN/NIP : 0328087102 / 10398021
Jabatan/Pangkat/Bidang Ilmu: Professor/IVC/Teknik Mesin
Unit Kerja: Fakultas Teknik – Universitas Tarumanagara

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

Judul Artikel Ilmiah : Experimental Study of Stationary-Head/Channel Cover STHE Prototype Using ϵ -NTU Method
 Nama Penulis : **Harto Tanujaya**, I Wayan Sukania
 Jumlah Penulis : 2 (dua)
 Status Pengusul : Penulis Pertama
 Identitas Buku Ilmiah : a. Nama Jurnal : Experimental Techniques
 b. Nomor ISSN : 0732-8818 (print), 1747-1567 (online)
 c. Vol. No. Bln. Th. : Vol. 43, Issue 6, Dec 2019
 d. Penerbit : Springer International Publishing
 e. Jumlah halaman : 11 halaman, 645 - 655
 f. Alamat Web Jurnal : <https://link.springer.com/article/10.1007%2Fs40799-019-00322-2>
 g. DOI Artikel : <https://doi.org/10.1007/s40799-019-00322-2>

Kategori Publikasi Buku Ilmiah (beri (√) pada kategori yang tepat)

Jurnal Ilmiah Internasional Bereputasi
 Jurnal Ilmiah Internasional
 Jurnal Ilmiah Nasional Terakreditasi
 Jurnal Ilmiah Nasional Tidak Terakreditasi
 Jurnal Ilmiah Terindex di DOAJ/CABI/COPERNICUS/Lainnya

Hasil Penilaian Peer Review

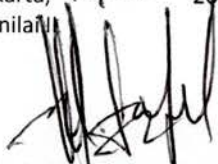
Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah (isi di kolom yang sesuai)					Nilai Akhir Yang Diperoleh
	Internasional Bereputasi	Internasional	Nasional Terakreditasi	Nasional Tidak Terakreditasi	Nasional Terindex DOAJ dll	
Kelengkapan dan kesesuaian unsur isi <i>prosiding</i> (10%)	4					3,76
Ruang lingkup dan kedalaman pembahasan (30%)	12					11,4
Kecukupan & kemutakhiran data/informasi dan metodologi (30%)	12					11,64
Kelengkapan unsur & kualitas penerbit (30%)	12					11,64
Total = 100%	40					38,44
Kontribusi Pengusul; (nilai akhir <i>peer</i> x bobot penulis pertama) = 38,44 x 60% = 23,064						23,064
Komentar/Usulan Peer Review:	1. Tentang kelengkapan dan kesesuaian unsur; 2. Tentang ruang lingkup dan kedalaman pembahasan; 3. Kecukupan dan kemutakhiran data/informasi dan metodologi; 4. Kelengkapan unsur dan kualitas penerbit; 5. Indikasi Plagiasi; 6. Kesesuaian Bidang Ilmu: <i>Terlampir</i>					

Jakarta, 14-11-2019
 Penilai

(Dr. Ir. M. Sobron Yamin L., M.Sc.)
 NIDN/NIP 0114056705 / 10311009
 Jabatan/Pangkat/Bidang Ilmu: Lektor Kepala/IV/Teknik Mesin
 Unit Kerja: Fakultas Teknik – Universitas Tarumanagara

<p>KOMENTAR PEER REVIEW</p>	<p>1. Tentang kelengkapan dan kesesuaian unsur:</p> <p>Artikel Experimental Study of Stationary-Head/Channel Cover STHE Prototype Using ϵ-NTU Method, ditulis sesuai dengan kaidah penulisan artikel ilmiah yang meliputi pendahuluan, metode/alat, data dan analisa serta kesimpulan.</p> <p>2. Tentang ruang lingkup dan kedalaman pembahasan:</p> <p>Artikel Experimental Study of Stationary-Head/Channel Cover STHE Prototype Using ϵ-NTU Method, membahas studi kasus secara eksperimental tentang efektivitas alat penukar kalor dengan kedalaman pembahasan yang spesifik.</p> <p>3. Kecukupan dan kemutakhiran data/informasi dan metodologi;</p> <p>Data yang diambil dan digunakan untuk analisa dan referensi tergolong baru dan mutakhir, dengan susunan metodologi yang baik.</p> <p>4. Kelengkapan unsur dan kualitas penerbit:</p> <p>Editor dan reviewer Jurnal "Experimental Techniques" tersusun dan terorganisir, ber ISSN/ISBN dan dapat diakses online. Penerbit Springer International Publishing dapat dilacak melalui daring, bereputasi, terindeks oleh Scopus dan web of science, berimpact factor dan memenuhi syarat jurnal ilmiah internasional, Q3, SJR (2018) 0,32, dan H Index 28.</p> <p>5. Indikasi Plagiasi:</p> <p>Artikel Experimental Study of Stationary-Head/Channel Cover STHE Prototype Using ϵ-NTU Method diterbitkan oleh Springer International Publishing, dan dapat dibaca secara daring melalui https://link.springer.com/journal/40799/onlineFirst , dan DOI https://doi.org/10.1007/s40799-019-00322-2 tidak ditemukan indikasi plagiasi.</p> <p>6. Kesesuaian Bidang Ilmu:</p> <p>Artikel tersebut membahas tentang alat penukar kalor dan ada kesesuaian dan linieritas keilmuan dengan pengusul.</p>
---------------------------------	---

Jakarta, 14-11-2019
Penilai



(Dr. Ir. M. Sobron Yamin L., M.Sc.)

NIDN/NIP : 0114056705 / 10311009

Jabatan/Pangkat/Bidang Ilmu: Lektor Kepala/IV/Teknik Mesin

Unit Kerja: Fakultas Teknik – Universitas Tarumanagara

Experimental Techniques

28

H Index

Country Switzerland - SIR Ranking of Switzerland

Subject Area and Category Engineering
 Mechanical Engineering
 Mechanics of Materials

Publisher Springer International Publishing AG

Publication type Journals

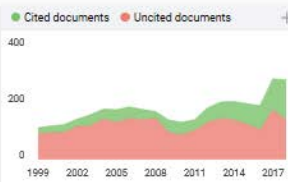
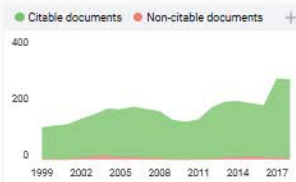
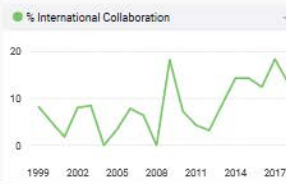
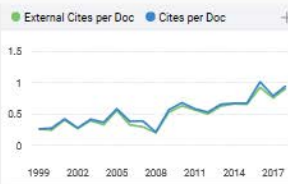
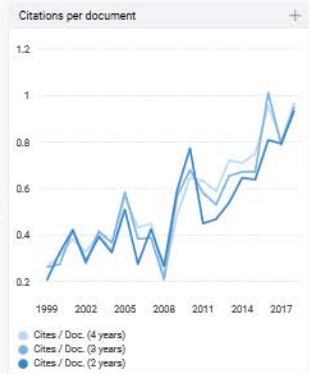
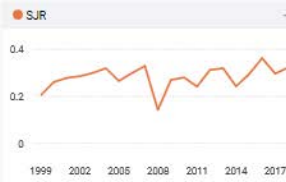
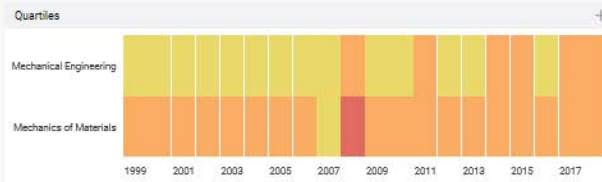
ISSN 07328818

Coverage 1983-ongoing

Scope Blackwell Publishing is pleased to partner with the Society for Experimental Mechanics to bring you Experimental Techniques, a bimonthly interdisciplinary publication focusing on the practicing engineer and engineering mechanics educators. Experimental Techniques promotes technical and practical advancements in experimental mechanics while supporting the Society's mission and commitment to interdisciplinary application, research and development, and education. This journal actively promotes experimental methods to: - Increase the knowledge of physical phenomena - Further the understanding of the behavior of materials, structures and systems

[Homepage](#)

[Join the conversation about this journal](#)



Experimental Techniques — Show this widget in your own website

Q3 Mechanical Engineering

SJR 2018 0.32

Just copy the code below and paste within your html code:

```
<a href="https://www.scimago.org" data-bbox="605 628 675 638">
```

powered by scimagojr.com



Experimental Techniques

[Journal home](#) > [Editors](#)

Editors

EDITOR-IN-CHIEF

Paul Reynolds, University of Exeter, UK (2020)

TECHNICAL EDITORS

Masoud Allahkarami, Oklahoma State University, USA (2019)

Bonnie Antoun, Sandia National Laboratories, USA (2019)

Sezer Atamturktur, Clemson University, USA (2021)

Javad Baqersad, Kettering University, USA (2019)

Jason Blough, Michigan Technological University, USA (2019)

Alfredo Cigada, Politecnico di Milano, Italy (2021)

Cosme Furlong, Worcester Polytechnic Institute, USA (2021)

Jeff Helm, Lafayette College, USA (2019)

Luciano Lamberti, Politecnico di Bari, Italy (2019)

Brian Owens, Sandia National Laboratories, USA (2019)

Wei-Chung Wang, National Tsing Hua University, Taiwan (2022)

Xing Zhang, Institute of Metal Research, China (2020)

Kristin B. Zimmerman, MedFor: Inc., USA (2021)

ADVISORY GROUP

Kristin B. Zimmerman, MedFor: Inc., USA (2021)

Jonathan D. Rogers, Sandia National Laboratory, USA (2021)

José Freire, Pontifical Catholic University of Rio de Janeiro. PUC-Rio (2021)

Nancy Sottos, University of Illinois, Urbana-Champaign, USA, (2019)

Jeff Helm, Lafayette College, USA (2019)

Junlan Wang, University of Washington, USA (2019)

Raman Singh, Oklahoma State University, USA (2019)

Wei-Chung Wang, National Tsing Hua University, Taiwan (2021)

PUBLISHER

Kristin B. Zimmerman, SEM

MANAGING EDITOR

Nuno Lopes, SEM



Match Overview

2%

1 umexpert.um.edu.my 2%

Experimental Techniques (2019) 43(6): 655
https://doi.org/10.1007/s40799-019-00322-2

Experimental Study of Stationary-Head/Channel Cover STHE Prototype Using ϵ -NTU Method

H. Tanujaya¹ · LW. Sukania²

Received: 22 June 2018 / Accepted: 8 April 2019 / Published online: 23 April 2019
© The Society for Experimental Mechanics, Inc. 2019

Abstract

Our research focuses on the performance evaluation of the small shell-and-tube heat exchanger (STHE) – laboratory type. The experiment used the prototype design of stationary head-channel cover using the ring rubber, which separate the hot and cold fluid in a chamber. The stationary-head prototypes unusually are designed using low cost manufacture and simple construction, without bolt or nut to join both the stationary-head and shell. The shell has four holes to supply hot/cold fluid, and next to the tube sheet hole to supply cold/hot fluid, the position both of them are inside the stationary head. The single and double segmental baffles were used in this study. Calculation of thermal performance and effectiveness of STHE were calculated based on ϵ -NTU method. The correlation of heat transfer proposed was based on the unique construction of stationary head design for the effectiveness of STHE. The data were collected from the both single and double segmental baffles, which were investigated by varying flow rate. The investigation including Reynolds and Nusselt number, heat transfer coefficient, and pressure drop which all effects of the shell-and-tube heat exchanger effectiveness. The results show that the ratio of the actual heat transfers for single segmental was higher than double segmental and the average effectiveness of single segmental baffle was 10 to 30% less than the double segmental baffles.

Keywords Heat exchanger · STHE · Baffle · NTU · Stationary-head

Introduction

At present, energy consumption in industrial processes is very important to manage due to the limitation of fossil fuel. Heat exchanger is one of the equipment that is used in the industry to support the production and manufacturing and are related to heat transfer and energy.

Many researchers have been used the heat exchanger to develop and reduce the heat transfer time as well as increase the energy and fuel efficiencies. Many studies discussed about the specific aspect of shell-and-tube heat exchanger. Mica

Vakic and Tomic discuss about the effectiveness of shell and-tube heat exchanger using different variation number of segmental baffle [1]. Isayran and Sevligem investigate the effect of variable baffle spacing on the thermal performance using numerical method (CFD) [2]. Gaden and Tari observe the shell side of the shell and-tube heat exchanger using numerical modelling in a small heat exchanger [3]. They investigate the baffle spacing, baffle cut, heat transfer coefficient, and pressure drop with Bell-Delaware method results. Delaware method is also used by Gaddis and Gucimski to calculate the pressure drop in an ideal tube bank coupled with correction factors [4]. Sparrow and Reifschneider discuss about the effect of interbaffle spacing in the shell-and-tube heat exchanger to determine the response of the heat transfer and pressure drop [5]. The other researchers, Wee and Aichar investigate using 32 different heat exchanger test experimentally. The heat exchanger differs by number of tubes, length, shell-and-tube diameter, nozzle diameter and tube pitch. They confirm that the tube pitch can be neglected in shell and tube

Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s40799-019-00322-2>) contains supplementary material, which is available to authorized users.

H. Tanujaya
hetanuj@ptnail.com