

LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW

KARYA ILMIAH : JURNAL ILMIAH

Judul Artikel Ilmiah : Inverse-Turbulent Prandtl Number Effects on Reynolds Numbers of RNG k-ε Turbulence Model on Cylindrical-Curved Pipe

Nama Penulis : Budiarmo, Ahmad Indra Siswantara, Steven Darmawan, **Harto Tanujaya**

Jumlah Penulis : 4 (empat)

Status Pengusul : Penulis Pendamping

Identitas Buku Ilmiah :

- a. Nama Jurnal : Applied Mechanics and Materials
- b. Nomor ISSN : 1662-7482
- c. Vol. No. Bln. Th. : 758 / April 2015
- d. Penerbit : Trans Tech Publications, Switzerland
- e. Jumlah halaman : 10 halaman
- f. Alamat Web Jurnal : <https://www.scientific.net/AMM.758.35>
- g. DOI Artikel : <https://doi.org/10.4028/www.scientific.net/AMM.758.35>

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%)	90%x10% x 40					3,6
Ruang lingkup dan kedalaman pembahasan (30%)	92%x30% x 40					11,04
Kecukupan & kemutakhiran data/informasi dan metodologi (30%)	92%x30% x 40					11,04
Kelengkapan unsur & kualitas penerbit (30%)	95%x30% x 40					11,40
Nilai <i>peer</i> Maksimal (100%)	40					37,08
Kontribusi Pengusul;(nilai akhir <i>peer</i> x bobot penulis pendamping : dibagi 3 penulis = $37,08 \times 40\% : (3) = 4,944$)						4,944
Komentar/Usulan <i>Peer Review</i> : (Terlampir hal. 2)	<ol style="list-style-type: none"> 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: <p style="text-align: right;"><i>Terlampir</i></p>					

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

<p>KOMENTAR PEER REVIEW</p>	<p>1. Tentang kelengkapan dan kesesuaian unsur:</p> <p>Artikel dengan judul Inverse-Turbulent Prandtl Number Effects on Reynolds Numbers of RNG k-ε Turbulence Model on Cylindrical-Curved Pipe, ditulis secara benar sesuai dengan standar penulisan artikel ilmiah yang memuat pendahuluan, metode/peralatan yang digunakan, pengambilan data dan data, analisa dan kesimpulan.</p> <p>2. Tentang ruang lingkup dan kedalaman pembahasan:</p> <p>Artikel tersebut membahas tentang efek Inverse-Turbulent bilangan Prandtl dan bilangan Reynolds pada Cylindrical-Curved Pipe dengan spesifik dan mudah dipahami.</p> <p>3. Kecukupan dan kemutakhiran data/informasi dan metodologi;</p> <p>Metodologi terstruktur dan jelas, data dan referensi yang diambil up to date.</p> <p>4. Kelengkapan unsur dan kualitas penerbit:</p> <p>Editorial board dan reviewer untuk Jurnal " Applied Mechanics and Materials " jelas dan terstruktur dan dapat diakses online. Penerbit Trans Tech Publications, Switzerland dapat dilacak melalui daring, bereputasi, terindeks oleh Scopus dan berimpact factor dan memenuhi syarat jurnal ilmiah internasional, Q3 (2014), SJR 0,11, dan H Index 28. Jurnal ber ISSN/ISBN.</p> <p>5. Indikasi Plagiasi:</p> <p>Artikel dengan judul Inverse-Turbulent Prandtl Number Effects on Reynolds Numbers of RNG k-ε Turbulence Model on Cylindrical-Curved Pipe yang diterbitkan oleh Trans Tech Publications, Switzerland, dan dapat dibaca secara daring melalui https://doi.org/10.4028/www.scientific.net/AMM.758.35 , DOI https://doi.org/10.4028/www.scientific.net/AMM.758.35 tidak ditemukan indikasi plagiasi dengan tingkat kesamaan menggunakan software Turnitin sebesar 10 %.</p> <p>6. Kesesuaian Bidang Ilmu:</p> <p>Artikel tersebut membahas tentang efek Inverse-Turbulent bilangan Prandtl dan bilangan Reynolds pada Cylindrical-Curved Pipe dan ada Linieritas keilmuan dengan pengusul.</p>
---------------------------------	--

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 : Inverse-Turbulent Prandtl Number Effects on Reynolds Numbers of RNG k-ε Turbulence Model on Cylindrical-Curved Pipe
 Nama Penulis : Budiarto, Ahmad Indra Siswantara, Steven Darmawan, **Harto Tanujaya**
 Jumlah Penulis : 4 (empat)
 Status Pengusul : Penulis Pendamping
 Identitas Buku Ilmiah :
 a. Nama Jurnal : Applied Mechanics and Materials
 b. Nomor ISSN : 1662-7482
 c. Vol. No. Bln. Th. : 758 / April 2015
 d. Penerbit : Trans Tech Publications, Switzerland
 e. Jumlah halaman : 10 halaman
 f. Alamat Web Jurnal : <https://www.scientific.net/AMM.758.35>
 g. DOI Artikel : <https://doi.org/10.4028/www.scientific.net/AMM.758.35>

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					3,72
Ruang lingkup dan kedalaman pembahasan (30%)	12					11,28
Kecukupan & kemutakhiran data/informasi dan metodologi (30%)	12					11,4
Kelengkapan unsur & kualitas penerbit (30%)	12					11,4
Total = 100%	40					37,8
Kontribusi Pengusul;(nilai akhir <i>peer</i> x bobot pendamping : dibagi 3 penulis pendamping) = 37,8x 40% : (3) = 5,04						5,04
Komentar/Usulan <i>Peer Review</i> :	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 Inverse-Turbulent Prandtl Number Effects on Reynolds Numbers of RNG k-ε Turbulence Model on Cylindrical-Curved Pipe, 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 tersebut membahas tentang efek Inverse-Turbulent bilangan Prandtl dan bilangan Reynolds pada Cylindrical-Curved Pipe 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 " Applied Mechanics and Materials " tersusun dan terorganisir, ber ISSN/ISBN dan dapat diakses online. Penerbit Trans Tech Publications, Switzerland dapat dilacak melalui daring, bereputasi, terindeks oleh Scopus dan berimpact factor dan memenuhi syarat jurnal ilmiah internasional, Q3 (2014), SJR 0,11, dan H Index 28.</p> <p>5. Indikasi Plagiasi:</p> <p>Artikel Inverse-Turbulent Prandtl Number Effects on Reynolds Numbers of RNG k-ε Turbulence Model on Cylindrical-Curved Pipe diterbitkan oleh Trans Tech Publications, Switzerland, dan dapat dibaca secara daring melalui https://doi.org/10.4028/www.scientific.net/AMM.758.35 , DOI https://doi.org/10.4028/www.scientific.net/AMM.758.35 tidak ditemukan indikasi plagiasi.</p> <p>6. Kesesuaian Bidang Ilmu:</p> <p>Artikel tersebut membahas tentang efek Inverse-Turbulent bilangan Prandtl dan bilangan Reynolds pada Cylindrical-Curved Pipe 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

Applied Mechanics and Materials

Country [Switzerland - !\[\]\(de95854c7ee024cfadc48187bbb781b2_img.jpg\) SIR Ranking of Switzerland](#)

Subject Area and Category [Engineering](#)
[Engineering \(miscellaneous\)](#)

Publisher [Scitec Publications Ltd.](#)

Publication type [Book Series](#)

ISSN [16609336](#)

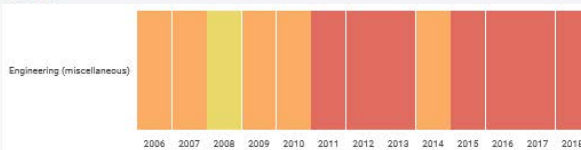
Coverage [2005-2015 \(cancelled\)](#)

28

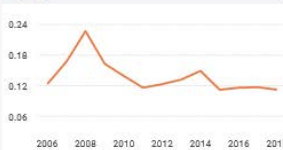
H Index

[Join the conversation about this journal](#)

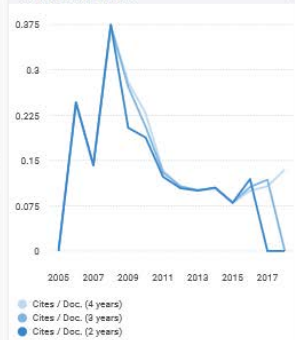
Quartiles



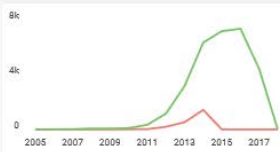
SJR



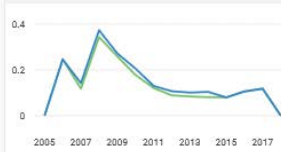
Citations per document



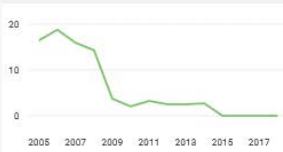
Total Cites



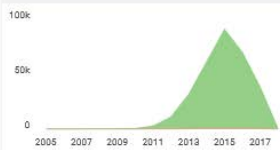
External Cites per Doc



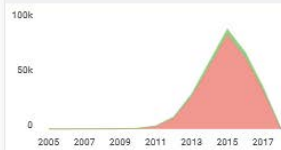
% International Collaboration



Citable documents



Cited documents



Applied Mechanics and Materials

Q4

Engineering (miscellaneous)

SJR 2018

0.11

powered by scimagojr.com

Show this widget in your own website

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

```
<a href="https://www.scima
```

Periodicals

Engineering Research

Advanced Engineering Forum >

Journal of Biomimetics, Biomaterials and Biomedical Engineering >

Advances in Science and Technology >

Applied Mechanics and Materials <

International Journal of Engineering Research in Africa >

Foundations of Materials Science and Engineering >

Materials Science

Journal of Metastable and Nanocrystalline Materials >

Journal of Nano Research >

Defect and Diffusion Forum >

Solid State Phenomena >

Diffusion Foundations >

Home » [Applied Mechanics and Materials](#) » Details



Applied Mechanics and Materials

ISSN: 1662-7482

Volumes

My eBooks

Details

Editorial Board



About:

"Applied Mechanics and Materials" is a peer-reviewed journal which specializes in the publication of proceedings of international scientific conferences, workshops and symposia as well as special volumes on topics of contemporary interest in all areas which are related to:

- 1) Research and design of mechanical systems, machines and mechanisms;
- 2) Materials engineering and technologies for manufacturing and processing;
- 3) Systems of automation and control in the areas of industrial production;
- 4) Advanced branches of mechanical engineering such as mechatronics, computer engineering and robotics.

"Applied Mechanics and Materials" publishes only complete volumes on given topics, proceedings and complete special topic volumes. We do not publish stand-alone papers by individual authors.

Authors retain the right to publish an extended, significantly updated version in another periodical.

All published materials are archived with [PORTICO](#) and [CLOCKSS](#).

Authors can share research paper via KUDOS platform to help broaden your audience. Share your work via scholarly collaboration networks (like ResearchGate, Academia.edu and Mendeley) in a fully copyrightcompliant way using The Kudos Shareable PDF

Presented, Distributed and Abstracted/Indexed in:
SCImago Journal & Country Rank (SJR) www.scimagojr.com.

Periodicals

Engineering Research

Advanced Engineering Forum >

Journal of Biomimetics, Biomaterials and Biomedical Engineering >

Advances in Science and Technology >

Applied Mechanics and Materials <

International Journal of Engineering Research in Africa >

Foundations of Materials Science and Engineering >

Materials Science

Journal of Metastable and Nanocrystalline Materials >

Journal of Nano Research >

Defect and Diffusion Forum >

Solid State Phenomena >

Diffusion Foundations >

Materials Science Forum >

Key Engineering Materials >

Nano Hybrids and Composites >

Advanced Materials Research >

Limited Collections

Specialized Collections >

Home » [Applied Mechanics and Materials](#) » Editor Board



Applied Mechanics and Materials

ISSN: 1662-7482

Volumes

My eBooks

Details

Editorial Board

Editor(s) in Chief

Prof. Xi Peng Xu

SEND MESSAGE

Huaqiao University, Research Institute of Manufacturing Engineering at Huaqiao University; No.668, Jimei Road, Xiamen, China, 361021;

Editorial Board

Prof. Ezio Cadoni

SEND MESSAGE

University of Applied Sciences of Southern Switzerland, Department for Construction, Environment and Design, DynaMat Laboratory, SUPSI-DACD; Campus Trevano, Canobbio, 6952, Switzerland;

Dr. Yuan Sheng Cheng

SEND MESSAGE

Harbin Institute of Technology, School of Materials Science and Technology; P.O. Box 435, Harbin, China, 150001;

Dr. Dmitry Chinakhov

SEND MESSAGE

National Research Tomsk Polytechnic University, Yurga Institute of Technology (Branch); Leningradskaya 26, Yurga, Russian Federation, 652055;

Prof. Oana Dodun

SEND MESSAGE

Gheorghe Asachi Technical University of Iasi, Department of Machine Manufacturing Technology; D. Mangeron Blvd, 39A, Iasi, 700050, Romania;

Prof. Grigore Gogu

SEND MESSAGE

Institut Français de Mécanique Avancée, Campus de Clermont-Ferrand/les Cézeaux, CS 20265; Clermont-Ferrand, 63175, France;

Dr. Tibor Krenický

SEND MESSAGE

Technical University of Košice, Faculty of Manufacturing Technologies with a Seat in Prešov; Bayerova 1, Presov, 080 01, Slovakia;

Dr. Rozli Zulkifli

SEND MESSAGE

Universiti Kebangsaan Malaysia, Department of Mechanical and Materials Engineering, Faculty of Engineering and Built Environment; Bangi, Malaysia, 43600;

Inverse-turbulent Prandtl number effects on Reynolds numbers of RNG $k-\epsilon$ turbulence model on cylindrical-curved pipe

Budiarso^{1,a}, Ahmad Indra Siswantara^{1,b},
Steven Darmawan^{1,2,c}, and Harto Tanujaya^{2,d}

¹Mechanical Engineering Dept., Universitas Indonesia, Kampus Baru UI Depok 16424, Indonesia

²Mechanical Engineering Dept., Universitas Tarumanagara, Jl. Let.Jen S.Parman No.1, Jakarta 11440, Indonesia

^abudiarso@ui.ac.id, ^ba_indra@eng.ui.ac.id, ^cstevend024@yahoo.com, ^dhartot@ft.untar.ac.id

Keywords: RNG $k-\epsilon$ turbulence model, Reynolds number, inverse-turbulent Prandtl number, cylindrical curved-pipe.

Abstract. Inverse-turbulent Prandtl number (α) is one of important parameters on RNG $k-\epsilon$ turbulence model which represent the cascade energy of the flow, which occur in cylindrical curved-pipe. Although many research has been done, turbulent flow in curved pipe is still a challenging problem. The range of α of the basic RNG $k-\epsilon$ turbulence model described by Yakhot and Orszag (1986) with range 1-1.3929 has to be more specific on Reynolds number (Re) and geometry. However, since the viscosity is sensitive to velocity and temperature, the specific value of α is needed on specific range of Re. This paper is aimed to gain optimum α of the flow in curved pipe with upper and lower Re which simulated numerically with CFD. The Re at the inlet side were: Re = 13000 and Re = 63800 on cylindrical curved-pipe with r/D of 1.607. The α were varied to 1, 1.1, 1.2, 1.3. The curved pipe was an cylindrical air pipe with 43mm inlet diameter. The computational grid that is used for CFD numerical simulation with CFX-ANSYS[®], hexagonal-surface fitted consist of 139440 cells. CFD simulation done with α varies by 1, 1.1, 1.2, dan 1.3. The wall is assumed to zero-roughness. The CFD simulation generated several results: at Re 13000, the value of α did not affect the turbulent parameter which also confirmed the basic theory of RNG $k-\epsilon$ turbulence model that the minimum Re of α is 2.5×10^4 . At Re = 63800, the use of α of 1.1 shows more turbulent flow domination on molecular flow. Lower eddy dissipation by 1.67%, increasing turbulent kinetic energy by 2.2%, and Effective viscosity increase by 4.7% compared to $\alpha = 1$. Therefore, the use of α 1.1 is the most suitable value to be used to represent turbulent flow in curved pipe with RNG $k-\epsilon$ turbulence model with Re 63800 and r/D 1.607 among others value that have discussed in this paper.

Nomenclature

c_v : proportional k constant (0.09) α_0 : Inverse Prandtl number (molecular)

Match Overview

10

10%

1	www.scopus.com	8%
2	Submitted to Turmen...	2%