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

Judul Jurnal Ilmiah (Artikel)	:	Numerical Optimization of Surface Texture for Hydrophobic Textured Slider Bearing		
Jumlah Penulis	:	4 orang (**Mohammad Tauviqirrahman**, Toni Prahasto, Mohamad Lutfi Assaidiky, Muchammad)		
Status Pengusul	:	Penulis Pertama sekaligus Penulis Korespondensi		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	Journal of Advanced Research in Fluid Mechanics and Thermal Sciences
		b. Nomor ISSN	:	2289-7879
		c. Vol, No., Bln Thn	:	Vol. 71, No. 2, Juli 2020, Hal. 160-169
		d. Penerbit	:	Akademia Baru
		e. DOI artikel (jika ada)	:	https://doi.org/10.37934/arfmts.71.2.160169
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		Alamat Artikel	:	http://www.akademiabaru.com/doc/ARFMTSV71_N2_P160_169.pdf
		g. Terindex	:	Scopus (Q3, SJR 0,243)

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Semarang, 28 Juli 2020

Reviewer 1

Ir. Eflita Yohana, M.T., Ph.D
NIP. 196204281990012001
Unit Kerja : Departemen Teknik Mesin FT UNDIP

Reviewer 2

Ojo Kurdi, S.T., M.T., Ph.D
NIP. 197303171999031001
Unit Kerja : Departemen Teknik Mesin FT UNDIP

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b. Ruang lingkup dan kedalaman pembahasan (30%)	12,00				11,00
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12,00				10,50
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12,00				12,00
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2. **Ruang lingkup dan kedalaman pembahasan:**
   Artikel ini membahas tentang pengaruh pemanfaatan material *hydrophobic* pada bantalan bertekstur. Fokus penelitian adalah optimasi kedalaman tektur yang memberikan daya dukung beban terbesar. Persamaan umum yang digunakan juga diturunkan dengan lengkap. Bantalan sebelum dan sesudah optimasi juga didiskusikan secara mendalam. Meskipun demikian, dalam artikel tidak ditemukan validasi terhadap metode yang dikembangkan. Nilai (11)
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Metodologi yang dijelaskan dalam artikel ini cukup lengkap dan sistematis. Variabel-variabel desain optimasi juga disajikan detil. Grafik juga cukup menarik dan jelas dengan membandingkan hasil sebelum dan sesudah optimasi memberikan *readibility* yang cukup baik. Lebih dari 70 persen pustaka sitasi merupakan pustaka terkini 10 tahun terakhir. Turnitin similarity index juga cukup rendah sebesar 17 %. Nilai (10,5)
4. **Kelengkapan unsur dan kualitas terbitan:**
   Artikel diterbitkan dalam Jurnal Internasional bereputasi tinggi (Q3 dengan SJR 0,243) yang terindex Scopus. Syarat-syarat terbitan yang baik telah dipenuhi seperti tata kelola Web dan diversitas tim editorial board. Nilai (12)

Semarang, 21 Juli 2020
Reviewer 1

Ir. Eflita Yohana, M.T., Ph.D
NIP. 196204281990012001
Unit Kerja : Departemen Teknik Mesin FT UNDIP

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a. Kelengkapan unsur isi jurnal (10%)	4,00				4,00
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d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12,00				12,00
Total = (100%)	**40,00**				**37,00**
Nilai Pengusul (kontribusi pengusul penulis) = 60% x 37,00 = 22,20					

Catatan Penilaian artikel oleh Reviewer :

1. **Kesesuaian dan kelengkapan unsur isi jurnal:**
   Artikel yang ditulis sudah sesuai dan lengkap seperti format yang diminta dalam "*guide for authors*" untuk *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences*". Bagian-bagian artikel sudah lengkap mulai dari Judul, Abstrak, Pendahuluan, Metode, Hasil dan Pembahasan, Kesimpulan, Daftar Pustaka yang tersusun runut. Penulisan di tiap bagian artikel cukup detil. Isi artikel telah sesuai dengan bidang ilmu pengusul yaitu Perancangan produk.
2. **Ruang lingkup dan kedalaman pembahasan:**
   Artikel ini membahas tentang optimasi bantalan bertekstur sebagai elemen mesin untuk dua model (segitiga dan elips). Pembahasan tentang hasil optimasi untuk tiap desain bantalan disajikan cukup baik. Pernurunan persamaan yang selanjutnya didiskretisasi dengan metode volume hingga merupakan nilai lebih penelitian yang dilakukan ini.
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Artikel ini memiliki nilai kebaruan tinggi. Bantalan bertekstur dimodifikasi dengan semacam pelapis hydrophobic yang merupakan trend mutalhir dalam ilmu rekayasa tribology. Pengembangan kode komputer digunakan untuk optimasi desain. Sitasi yang digunakan juga terkini (lebih dari 70%). Turnitin index nya juga cukup rendah, yaitu 17%.
4. **Kelengkapan unsur dan kualitas terbitan:**
   Jurnal ini tergolong jurnal internasional bereputasi (Q3) dengan SJR sebesar 0,243 Kualitas terbitan juga cukup baik jika dilihat dari artikel-artikel yang diterbitkan dan konsistensi kualitas artikel.

Semarang, 26 Juli 2020
Reviewer 2

Ojo Kurdi, S.T., M.T., Ph.D.
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Journal of Advanced Research in Fluid Mechanics and Thermal Sciences
Volume 71, Issue 2, 1 July 2020, Pages 160-169

Numerical optimization of surface texture for hydrophobic textured slider bearing (Article) (Open Access)

Tauviqirrahman, M.[a], Prahasto, T.[a], Assaidiky, M.L.[a], Muchammad[a,b]

[a]Laboratory for Engineering Design and Tribology, Mechanical Engineering Department, Engineering Faculty, Diponegoro University, Jl. Prof. H. Soedharto, Tembalang, Semarang, 50275, Indonesia
[b]Laboratory for Surface Technology and Tribology, Faculty of Engineering Technology, University of Twente, Drienerlolaan 5, Postbus 217, Enschede, 7500 AE, Netherlands

Abstract

View references (15)

To reduce a significant energy waste in industry due to the friction and wear in mechanical components, there is an increasing demand for durable thrust bearing under extreme operational conditions. Surface texturing, combined with the application of hydrophobic material, has been proven to be an effective and economical means to enhance the tribological lubrication performance of sliding surfaces. Therefore, in the present work, an exact optimization method is presented to optimize the surface texture in terms of the texture depth for enhancing the load-carrying capacity. Furthermore, the texture shapes, including ellipse and triangle, are investigated under different arrangements of hydrophobic materials. The lubrication characteristics are established by solving the modified Reynolds equation with means of finite volume method. For modeling the hydrophobic behavior, the critical shear stress model is employed to assure more real boundary conditions of bearing . The simulation results show that for any type of groove shape, the highest load-carrying capacity can be achieved under unique hydrophobic placement. The main interesting finding is the fact that the optimal texture with the groove shape of ellipse shows a better impact on the performance of slider bearing irrespective of the hydrophobic placements. © 2020 PENERBIT AKADEMIA BARU.

SciVal Topic Prominence

Topic: Drag Reduction | Slip Boundary Condition | Slip Flow

Prominence percentile: 95.723

Author keywords

Hydrophobic Optimization Slider bearing Texturing

Funding details

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Universitas Diponegoro		UNDIP

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Tauviqirrahman, M.; Laboratory for Engineering Design and Tribology, Mechanical Engineering Department, Engineering Faculty, Diponegoro University, Jl. Prof. H. Soedharto, Tembalang, Semarang, Indonesia; email:mtauviq99@lecturer.undip.ac.id

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ISSN: 2289-7879

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Country	Malaysia - SJR Ranking of Malaysia
Subject Area and Category	Chemical Engineering Fluid Flow and Transfer Processes
Publisher	Penerbit Akademia Baru
Publication type	Journals
ISSN	22897879
Coverage	2017-2020
Scope	This journal welcomes high-quality original contributions on experimental, computational, and physical aspects of fluid mechanics and thermal sciences relevant to engineering or the environment, multiphase and microscale flows, microscale electronic and mechanical systems; medical and biological systems; and thermal and flow control in both the internal and external environment.

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Lasinta Ari Nendra Wibawa 1 month ago

Dear Sir/Madam.

Why hasn't there been an update for SJR 2019 until now? Usually, it is done in the first week of June.

Best Regards
Lasinta Ari Nendra Wibawa

reply

SCImago Team

Melanie Ortiz 1 month ago

Dear Lasinta,
Thank you for contacting us. The indicators for 2019 will be available throughout this month (June 2020), probably as of 11th.
Best Regards, SCImago Team

San Wai 2 months ago

I would like to learn more.

reply

SCImago Team

Melanie Ortiz 2 months ago

Dear San Wai, thanks for your participation! Best Regards, SCImago Team

anas 5 months ago

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reply

Laode Ahmad Barata 1 year ago

Dear Sir/madam

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reply

MH 6 months ago

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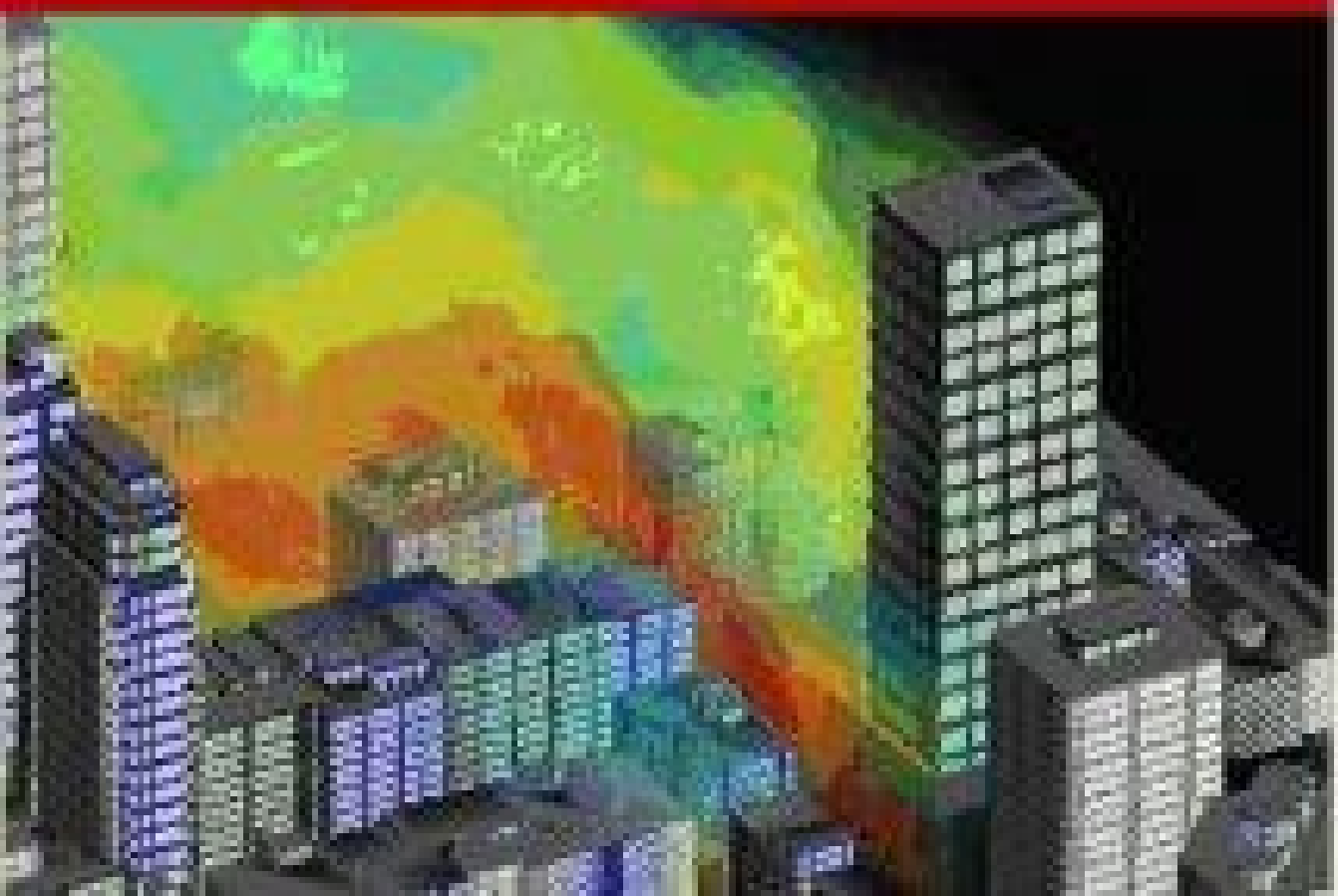
Advanced Research in Fluid Mechanics and Thermal Sciences



Editorial Preface

We would like to present, with great pleasure, the inaugural volume of a new scholarly journal, Advanced Research in Fluid Mechanics and Thermal Sciences. This journal offers current research reports in the field of fluid mechanics and thermal sciences. Scope of the journal includes: multiphase and microscale flows, microscale electronic and mechanical systems; medical and biological systems; and thermal and flow control in both the internal and external environment.

Advanced Research in Fluid Mechanics and Thermal Sciences focuses on original high-quality research and so to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their summary of current research in the gamut of fundamental and applied science.

It is our hope that this fine collection of research reports will be a valuable resource for Advanced Research in Fluid Mechanics and Thermal Sciences readers and will stimulate further research into the wide area of fundamental and applied science.

Editor-in-Chief
Nor Azwadi Che Sidik
Universiti Teknologi Malaysia

ISSN (Online) : 2289-7879

Frequency : Monthly

Editor-in-Chief : **Dr. Nor Azwadi Che Sidik** (E-mail)
Technical Editor : **Ahmad Tajuddin Mohamad** (E-mail)
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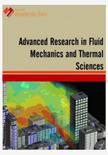
Aims and Scope : This journal welcomes high-quality original contributions on experimental, computational, and physical aspects of fluid mechanics and thermal sciences relevant to engineering or the environment, multiphase and microscale flows, microscale electronic and mechanical systems; medical and biological systems; and thermal and flow control in both the internal and external environment.



Article of the month

Experimental Analysis of The Thermal Effect of The Magneto-Mechanical Behavior of Viscoelastic Elastomer
Mohamed Tourab, Salah Aguib

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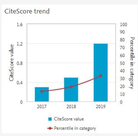

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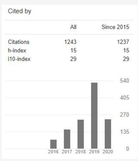

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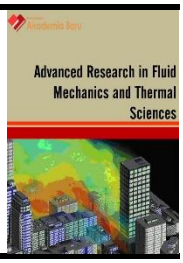

Effect of Thermal Collector Height and Radius on Hydrodynamic Flow Control in Small Solar Chimney

Open Access

Ahmed Daimallah[1,*], Mohamed Lebbi[2], Mohand Said Lounici[1], Lyes Boutina[2]

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ABSTRACT

Solar chimney power plant (SCPP) is one of the promising technologies for solar energy utilization. It is an interesting system especially in large isolated desert areas due to its basic techniques and low operating costs. In this study, we investigate numerically the collector geometrical parameters effect on the hydrodynamic flow control in a solar chimney. The finite volume method and the SIMPLE algorithm have been used to solve the turbulent flow equations and energy equation. A standard K-ε model is used. The influence of the collector height (0.05m≤Hc≤0.5m) and the collector radius (2.5m≤Rc≤15m) on the flow behavior has been numerically analyzed. The obtained results indicate that increasing the collector height and collector radius affect considerably the flow behavior and the SCPP performance. The mass flow rate is enhanced by about 27 %, for Rc=12.5m and Hc = 0.25m.

1. Introduction

Solar chimney power plant (SCPP) is an economic dispositive for production of electric Energy. In a SCPP, the air is heated by solar radiation captured in the collector. This leads to create the air acceleration in the tower chimney by buoyancy forces effect. These quantities of heated air pass throw aero-generator to produce electricity. Over the years, intensive research has been conducted on the solar chimney. Haaf *et al.,* [1] investigated theoretical studies on Manzanares prototype. They discussed the energy balance, design criteria and the cost of the system and energy production analysis. Bernardes *et al.,* [2] carried out a theoretical SCPP analysis based on a steady state laminar

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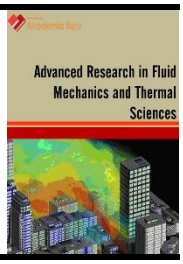

Predicting of Pool Boiling Heat Transfer From a Horizontal Heated Tube Using Two Fluids Multiphase Model

Open Access

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[2] Department of Mechanical Techniques, Al-Nasiriya Technical Institute, Southern Technical University, Thi-Qar, Al-Nasiriya, Iraq

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Pool boiling; Heat transfer; Multiphase model; RPI model; Bubble waiting time coefficient

ABSTRACT

This simulation aims to investigate numerically the pool boiling heat transfer from horizontal heated copper tube at atmospheric pressure. The Eulerian-Eulerian framework applied together with including Rensselaer Polytechnic Institute RPI boiling model to mimic the boiling process and predicting the heat and mass transfer inside the pool-boiling chamber. Efforts have been made in this simulation to correct the quenching heat flux part by modifying the bubble waiting time coefficient through adopting the trial and error procedure to correlate this coefficient to superheat temperature. The results of the boiling curve and the heat transfer coefficient of the present model are validated with experimental data from the literature and shown good agreement. Moreover, transient analysis of vapor volume fraction contours, vapor velocity vectors, and streamlines of water velocity at different superheat temperatures, as well as the time steps are presented and concisely discussed in this work.

1. Introduction

Boiling heat transfer is a significant heat transfer mode for industrial heat exchange systems due to the ability to remove a large quantity of heat in small superheat temperature. Boiling process and two-phase flow involved in many applications such as boiler tubes, evaporators, nuclear reactors, tubes bank or tubes bundles in heat exchangers [1-5]. To thoroughly understand the design of the heat exchange system, there is a necessity for understanding the critical factors of this phenomenon. Enhancement of boiling heat transfer coefficient and avoiding the critical heat flux CHF during the boiling process is one of the main tasks that investigators in the field of boiling are looking for to keep the systems safer and working with energy-saving [6-8]. Among all the regimes of pool boiling, the

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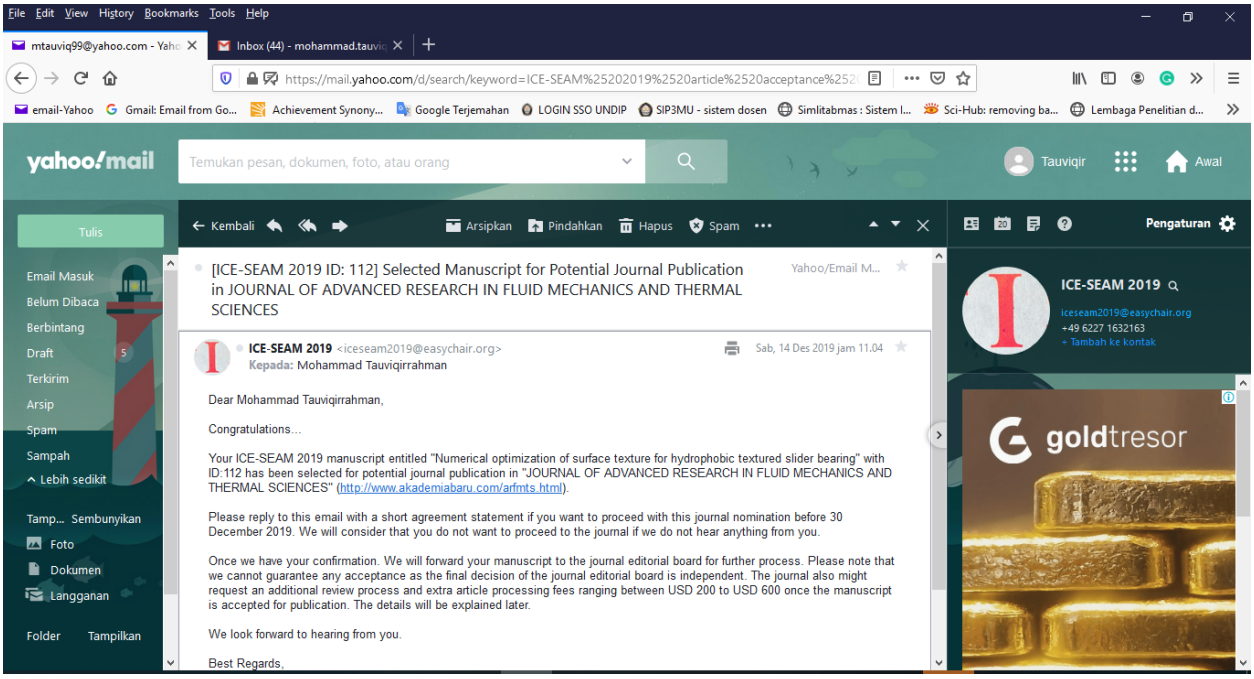

[ICE-SEAM 2019 ID: 112] Selected Manuscript for Potential Journal Publication in JOURNAL OF ADVANCED RESEARCH IN FLUID MECHANICS AND THERMAL SCIENCES

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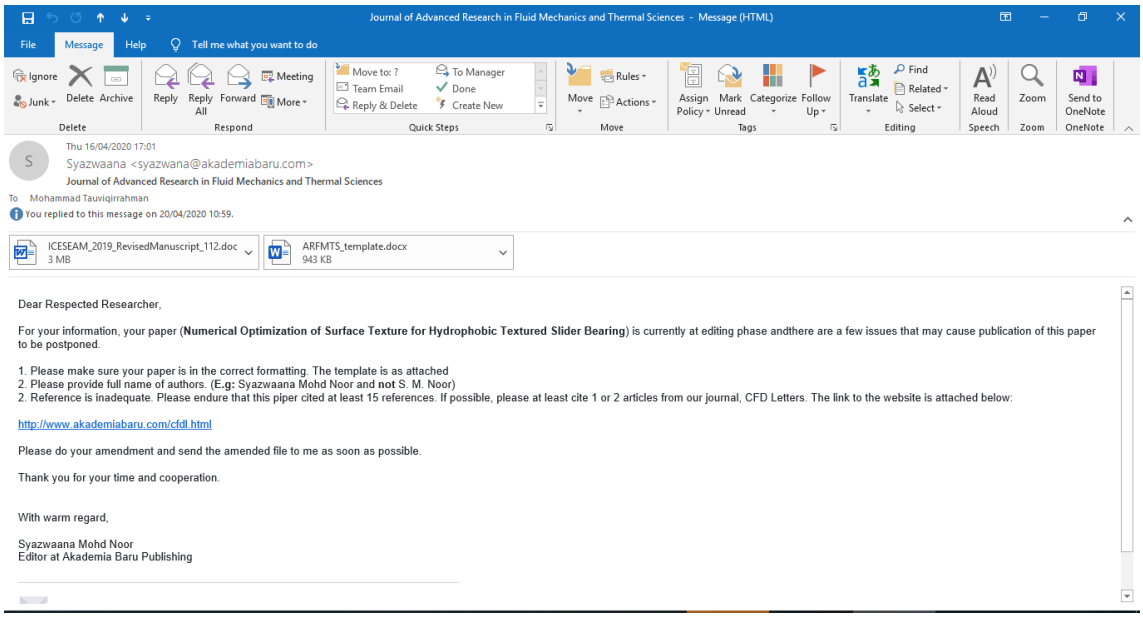

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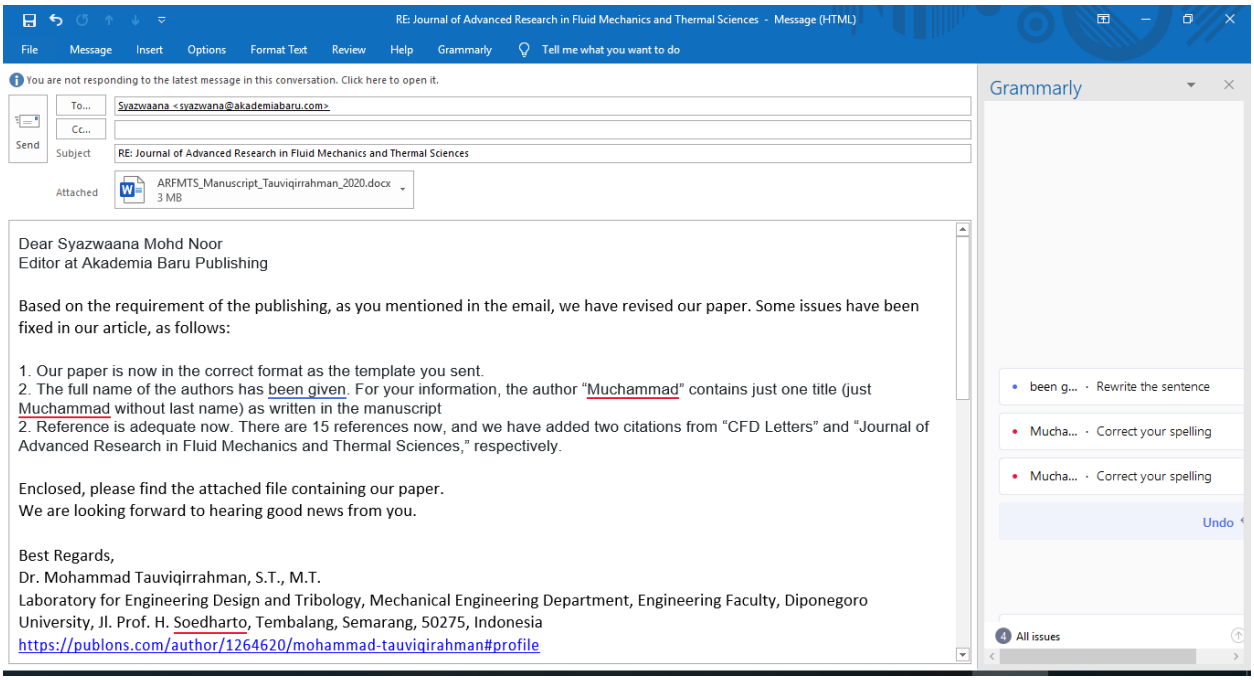

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Enclosed, please find the attached file containing our paper.
We are looking forward to hearing good news from you.

Best Regards,
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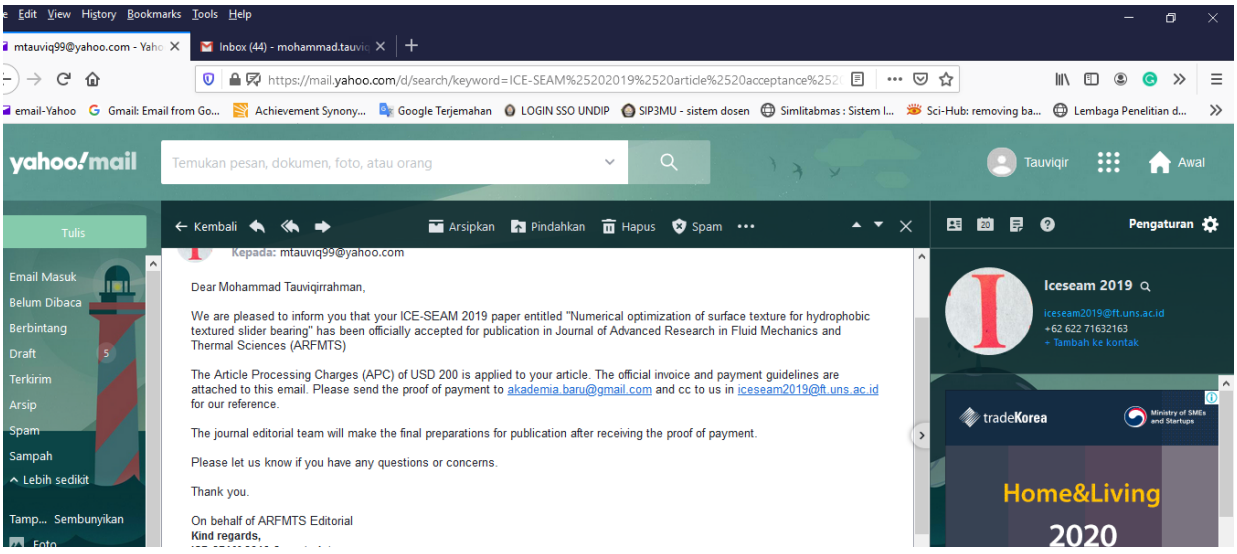

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