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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : *PROSIDING***

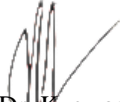
Judul Jurnal Ilmiah (Artikel) : Numerical calculation based on mass and energy balance of waste incineration in the fixed bed reactor
 Nama/ Jumlah Penulis : 6 Orang
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 g. Terindex : Scopus, SJR, Google Scholar, H-index : 85, Impact score : 0.48 (2021-2020)

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Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
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b. Ruang lingkup dan kedalaman pembahasan (30%)	8,00	8	8
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	8,00	8	8
d. Kelengkapan unsur dan kualitas penerbit (30%)	8,50	8	8,25
Total = (100%)	27,50	27	27,25
Nilai untuk Pengusul : 40% x 1/5 x 27,25 = 2,18			

Reviewer 1



Prof. Dr. Kusworo Adi, S.Si., M.T.
 NIP. 197203171998021001
 Unit Kerja : Fisika/FSM/UNDIP
 Bidang Ilmu: Fisika Instrumentasi

Semarang, 10 Februari 2023

Reviewer 2



Prof. Dr. Agus Subagio, S.Si., M.Si.
 NIP. 19710813 1995121001
 Unit Kerja : Fisika/FSM/UNDIP
 Bidang Ilmu: Fisika Material

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d. Kelengkapan unsur dan kualitas terbitan/prosiding (30%)	9		8,50
Total = (100%)	30		27,50
Nilai Pengusul = 40% x 1/5 x 27,50 = 2,20			

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1. Kelengkapan unsur isi prosiding:

Penulisan artikel sudah baik dan mengikuti standard penulisan artikel di prosiding, yaitu Abstrak, Introduction, Method, Result and Discussion, Conclusions, Acknowledgement, and References. Substansi artikel sesuai bidang ilmu pengusul

2. Ruang lingkup dan kedalaman pembahasan:

Lingkup bahasan dari artikel ini adalah bidang fisika. Pembahasan cukup baik yaitu Pembakaran sempurna hanyalah produk CO₂, H₂O, SO₂, abu, dan kelebihan O₂ dipertimbangkan. Neraca massa menghitung aliran massa total masuk dan keluar insinerator. Neraca energi meliputi panas masukan, panas penguapan, panas kimia, radiasi, dan konveksi. Panas masukan dihitung dengan mempertimbangkan kapasitas panas, temperatur, nilai kalor, dan aliran massa total. Kedalaman pembahasan baik.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

Informasi yang disajikan cukup baru dan hasil yang diperoleh memuat substansi orisinal dengan aspek aplikasi yang penting. Sumber gagasan penulis untuk artikel ini cukup komprehensif. Dari 12 referensi yang dipakai terdapat 3 paper yang lebih dari 10 tahun terakhir (out of date). Metodologinya dan penulisannya cukup terstruktur.

4. Kelengkapan unsur dan kualitas terbitan:

Artikel dimuat di prosiding Journal of Physics: Conference Series (ISNPINSA 2019). Diterbitkan pada Vol. 1524, No.012014, 2020, diterbitkan IOP Publishing Ltd. dan terindeks di Scopus.

Semarang, 10 Februari 2023

Reviewer 1


 Prof. Dr. Kusworo Adi, S.Si., M.T.
 NIP. 197203171998021001
 Unit Kerja : Fisika/FSM/UNDIP
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c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	9		8
d. Kelengkapan unsur dan kualitas terbitan/prosiding (30%)	9		8
Total = (100%)	30		27
Nilai Pengusul = 40% x 1/5 x 27 = 2,2 (Max 30)			

Catatan Penilaian artikel oleh Reviewer :

- Kesesuaian dan kelengkapan unsur isi jurnal:**
Tulisan sudah lengkap yang terdiri dari title, abstract, introduction, material and method, result and discussion, conclusion, references. Artikel telah sesuai dengan bidang ilmu pengusul/anggota penulis.
- Ruang lingkup dan kedalaman pembahasan:**
Pembahasan artikel terkait perhitungan numerik dari peralatan insinerasi berdasarkan kesetimbangan massa dan energi telah dijelaskan dengan baik. Artikel ini juga dilengkapi dengan referensi pada bagian pembahasan untuk menguatkan diskusi.
- Kecukupan dan kemutakhiran data/informasi dan metodologi:**
Metode standar serta referensi yang digunakan cukup baik terkait skema reaktor dan setting eksperimen. Makalah didukung oleh 12 daftar pustaka.
- Kelengkapan unsur dan kualitas terbitan:**
Prosiding untuk artikel yang diterbitkan telah terindex dan memiliki kualitas internasional. Kelengkapan dan kualitas cukup baik terdapat tabel hasil perhitungan untuk memudahkan penjelasan.

Semarang, 10 Februari 2023
 Reviewer 2



Prof. Dr. Agus Subagio, S.Si., M.Si.
 NIP. 19710813 1995121001
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Numerical calculation based on mass and energy balance of waste incineration in the fixed bed reactor

Khuriati A.^{a,b} ; Purwanto P.^{a,c}; Huboyo H.S.^{a,d}; Sumariyah S.^b; Suryono S.^b; Putranto A.B.^e

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^a Doctorate Program of Environmental Science, School of PascaSarjana. Diponegoro University, Semarang, 50241, Indonesia

^b Department of Physics, Faculty of Science and Mathematics, Diponegoro University, Semarang, 50275, Indonesia

^c Department of Chemical Engineering, Faculty of Engineering, Diponegoro University, Semarang, 50275, Indonesia

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Abstract

To evaluate the waste process incineration, a mass, and energy balance is employed to investigate the waste incineration process in a fixed bed. Thermodynamics equilibrium is implemented to describe the incineration process. The complete combustion is only products CO₂, H₂O, SO₂, ash, and excess O₂ considered. The mass balance calculates the total mass flow in and out incinerator.

Energy balance includes input heat, evaporating heat, chemical heat, radiation, and convection. The input heat is calculated by considering the heat capacity, temperature, heating value, and total mass flow. Evaporation heat is calculated based on the water content, mass flow of each aqueous, and evaporation hot water flow. The result shows that efficiency energy of waste incinerator up to 79,33%. It means the incinerator is included in the good category. © Published under licence by IOP Publishing Ltd.

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Chief Editor

Febty Febriani (febty.febriani@lipi.go.id)

Indonesian Institute of Sciences (LIPI)

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Komplek PUSPIPTEK Serpong,

Tangerang Selatan 15314,

Indonesia

Keisuke Takahashi (Keisuke.takahashi@eng.hokudai.ac.jp)

Hokkaido University

Graduate School of Engineering

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North 13, West 8

Sapporo, 060-8628

Japan

Peng Han (hanpeng407@gmail.com)

Institute of Statistical Mathematics

Risk Analysis Research Center (Statistical Seismological Research Project)

10-3 Midori-cho, Tachikawa

Tokyo 190-8562

Japan

Siwei Chen (chen-sw@criepi.denken.or.jp)

Central Research Institute of Electric Power Industry

Materials Science Research Laboratory

2-11-1 Iwadokita, Komae-shi

Tokyo 201-8511

Japan

Xinhong Qiu (qxinhong@gmail.com)

Wuhan Institute of Technology

School of chemistry environmental engineering

No.693, Xiongchu Avenue, Hongshan District Wuhan, Hubei Province, P.R.

China

Mohsen Farahat (mohsen105@hotmail.com)

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P.O. Box 87 Helwan, Cairo

Egypt

Young-Ho Ko (yhko@etri.re.kr)

Electronic and Telecommunications Research Institute (ETRI)

Photonic/Wireless Convergence Components Research Department

218 Gajeong-ro, Yuseong-gu, Daejeon, 34129

Korea

Eni Sugiarti (eni.sugiarti@lipi.go.id)

Indonesian Institute of Sciences (LIPI)

Research Center for Physics

Komplek PUSPIPTEK Serpong,

Tangerang Selatan 15314,

Indonesia

Titi Anggono (titi.anggono@lipi.go.id)

Indonesian Institute of Sciences (LIPI)

Research Center for Physics

Komplek PUSPIPTEK Serpong,

Tangerang Selatan 15314,

Indonesia

Isnaeni (isnaeni@lipi.go.id)

Indonesian Institute of Sciences (LIPI)

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