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

Judul Jurnal Ilmiah (Artikel)	:	Improvement of Clove Oil Quality by Using Adsorption-distillation Process		
Jumlah Penulis	:	4 orang (Widayat, **Bambang Cahyono**, Hadiyanto and Ngadiwiyana)		
Status Pengusul	:	penulis ke-2		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	Research Journal of Applied Sciences, Engineering and Technology
		b. Nomor ISSN	:	ISSN (Online): 2040-7467, ISSN (Print): 2040-7459
		c. Vol, No., Bln Thn	:	18:3867-3871, 2014
		d. Penerbit	:	Maxwell Scientific Publication Corp.
		e. DOI artikel (jika ada)	:	-
		f. Alamat web jurnal	:	https://maxwellsci.com/jp/mspabstract.php?doi=rjaset.7.744
		Alamat Artikel	:	https://maxwellsci.com/msproof.php?doi=rjaset.7.744
		g. Terindex	:	Scopus, Q4

Kategori Publikasi Jurnal Ilmiah (beri ✓pada kategori yang tepat)	:	√	Jurnal Ilmiah Internasional
			Jurnal Ilmiah Nasional Terakreditasi
			Jurnal Ilmiah Nasional Tidak Terakreditasi

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	**Nilai Reviewer**		**Nilai Rata-rata**
	Reviewer I	**Reviewer II**	
a. Kelengkapan unsur isi jurnal (10%)	4,00	4,00	4,00
b. Ruang lingkup dan kedalaman pembahasan (30%)	11,00	10,00	10,50
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	11,50	10,00	10,75
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	11,00	9,50	10,25
Total = (100%)	**37,50**	**33,50**	**35,50**
Nilai Pengusul = (40% x 35,50)/3 = 4,73			

Semarang, 30 Juli 2020

Reviewer 2

Prof. Dr. Andri Cahyo Kumoro, S.T., M.T.
NIP. 197405231998021001
Unit Kerja : Teknik Kimia FT UNDIP

Reviewer 1

Prof. Dr. Istadi, S.T., M.T.
NIP. 197103011997021001
Unit Kerja : Teknik Kimia FT UNDIP

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

Judul Jurnal Ilmiah (Artikel)	:	Improvement of Clove Oil Quality by Using Adsorption-distillation Process		
Jumlah Penulis	:	4 orang (Widayat, **Bambang Cahyono**, Hadiyanto and Ngadiwiyana)		
Status Pengusul	:	penulis ke-2		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	Research Journal of Applied Sciences, Engineering and Technology
		b. Nomor ISSN	:	ISSN (Online): 2040-7467, ISSN (Print): 2040-7459
		c. Vol, No., Bln Thn	:	18:3867-3871, 2014
		d. Penerbit	:	Maxwell Scientific Publication Corp.
		e. DOI artikel (jika ada)	:	-
		f. Alamat web jurnal	:	https://maxwellsci.com/jp/mspabstract.php?doi=rjaset.7.744
		Alamat Artikel	:	https://maxwellsci.com/msproof.php?doi=rjaset.7.744
		g. Terindex	:	Scopus, Q4

Kategori Publikasi Jurnal Ilmiah (beri ✓pada kategori yang tepat) :
- [√] Jurnal Ilmiah Internasional
- [ ] Jurnal Ilmiah Nasional Terakreditasi
- [ ] Jurnal Ilmiah Nasional Tidak Terakreditasi

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah			Nilai Akhir Yang Diperoleh
	Internasional [40]	Nasional Terakreditasi [ ]	Nasional Tidak Terakreditasi [ ]	
a. Kelengkapan unsur isi jurnal (10%)	4,00			4,00
b. Ruang lingkup dan kedalaman pembahasan (30%)	12,00			11,00
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12,00			11,50
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12,00			11,00
Total = (100%)	**40,00**			**37,50**
Nilai Pengusul = (40% x 37,5)/3 = 5,00				

Catatan Penilaian artikel oleh Reviewer :

1. **Kesesuaian dan kelengkapan unsur isi jurnal:**
   Kelengkapan unsur isi jurnal memenuhi.

2. **Ruang lingkup dan kedalaman pembahasan:**
   Hasil dan pembahasan mencukupi, namun masih banyak paragraf2 yang hanya berisi satu kalimat.

3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Pustaka acuan mencukupi dan cukup mutakhir. Metodologi penelitian cukup sesuai dengan permasalahan yang diselesaikan.

4. **Kelengkapan unsur dan kualitas terbitan:**
   Penerbit jurnal ini (Maxwell Scientific) saat ini masuk di Beallist (Questionable publisher - https://beallslist.net/) dan mulai 2015 Discontinued dari Scopus. **Tetapi pada saat artikel ini terbit, statusnya masih terindeks di Scopus.**

Semarang,
Reviewer 1

Prof. Dr. Istadi, S.T., M.T.
NIP. 197103011997021001
Unit Kerja : Teknik Kimia, FT UNDIP

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

Judul Jurnal Ilmiah (Artikel)	:	Improvement of Clove Oil Quality by Using Adsorption-distillation Process		
Jumlah Penulis	:	4 orang (Widayat, **Bambang Cahyono**, Hadiyanto and Ngadiwiyana)		
Status Pengusul	:	penulis ke-2		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	Research Journal of Applied Sciences, Engineering and Technology
		b. Nomor ISSN	:	ISSN (Online): 2040-7467, ISSN (Print): 2040-7459
		c. Vol, No., Bln Thn	:	18:3867-3871, 2014
		d. Penerbit	:	Maxwell Scientific Publication Corp.
		e. DOI artikel (jika ada)	:	-
		f. Alamat web jurnal	:	https://maxwellsci.com/jp/mspabstract.php?doi=rjaset.7.744
		Alamat Artikel	:	https://maxwellsci.com/msproof.php?doi=rjaset.7.744
		g. Terindex	:	Scopus, Q4

Kategori Publikasi Jurnal Ilmiah (beri ✓pada kategori yang tepat) :
- [√] Jurnal Ilmiah Internasional
- [ ] Jurnal Ilmiah Nasional Terakreditasi
- [ ] Jurnal Ilmiah Nasional Tidak Terakreditasi

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah			Nilai Akhir Yang Diperoleh
	Internasional [40]	Nasional Terakreditasi [ ]	Nasional Tidak Terakreditasi [ ]	
a. Kelengkapan unsur isi jurnal (10%)	4,00			4,00
b. Ruang lingkup dan kedalaman pembahasan (30%)	12,00			10,00
c.Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12,00			10,00
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12,00			9,50
Total = (100%)	**40,00**			**33,50**
Nilai Pengusul = (40% × 33,50)/3 = 4,47				

Catatan penilaian artikel oleh Reviewer:

1. **Kesesuaian dan kelengkapan unsur isi jurnal:** Artikel ini mencakup judul, abstrak, pendahuluan, metode komputasi, hasil dan pembahasan, kesimpulan dan daftar pustaka.
2. **Ruang lingkup dan kedalaman pembahasan:** Isi artikel sesuai dengan ruang lingkup topik jurnal yang meliputi metode distilasi dan adsorpsi untuk meningkatkan kualitas minyak cengkeh. Hasil percobaan ditampilkan cukup banyak dan baik, dibahas dengan dukungan oleh hanya 5 pustaka. Sayangnya, artikel ini tidak menunjukkan kedalaman dan kontribusi ilmiah yang cukup memadai, juga kurang teliti dalam mengaitkan pustaka dengan hasil percobaan dan analisis kimianya.
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:** Metode percobaan ditulis berdasarkan pada pustaka yang relevan. Data yang ditampilkan dalam artikel cukup banyak untuk artikel dalam naskah artikel sebuah jurnal. Artikel ini menggunakan 15 pustaka dan 11 di antaranya tergolong mutakhir (73,33%).
4. **Kelengkapan unsur dan kualitas terbitan: Research Journal of Applied Sciences, Engineering and Technology** ini tergolong jurnal ilmiah yang baik (**Q4**) dengan **SJR 0.146** dan **H index 24** pada pemeringkatan jurnal **Scimago** tahun **2014**. Namun, jurnal ini sudah **tidak terindeks Scopus pada 2016**. Editorial board berasal dari beberapa negara, terdapat pedoman penulisan yang jelas dan format penulisan cukup konsisten. Jurnal ini diterbitkan oleh Maxwell Scientific Publications. Gaya selingkung yang diterapkan pada jurnal ini cukup baik, namun artikel ini tidak menunjukan gaya tulisan, cara penyajian gambar dan kualitas penggunaan Bahasa Inggris yang memadai. Beberapa kalimat masih mengandung Bahasa Indonesia. Beberapa gambar sangat buram sangat kecil sehingga tidak jelas. Hampir semua artikelnya ditulis oleh penulis dari Asia (Timur Tengah, India, Indonesia) dan Afrika.

Semarang, Juli 2020
Reviewer 2

Prof. Dr. Andri Cahyo Kumoro, S.T., M.T.
NIP. 197405231998021001
Unit Kerja : Teknik Kimia FT UNDIP

Brought to you by Universitas Diponegoro

Scopus Search Sources Lists SciVal ↗ Create account Sign in

Document details

‹ Back to results | 1 of 1

Export Download Print E-mail Save to PDF Add to List More... ›

View at Publisher

Research Journal of Applied Sciences, Engineering and Technology
Volume 7, Issue 18, 2014, Pages 3867-3871

Improvement of clove oil quality by using adsorption-distillation process

(Article) (Open Access)

Widayat[a], Cahyono, B.[b], Hadiyanto[a], Ngadiwiyana[b]

[a]Department of Chemical Engineering, Center of Biomass and Renewable Energy (CBIORE), Diponegoro University, Indonesia
[b]Department of Chemistry, Diponegoro University, Indonesia

Abstract

View references (15)

The objective of this research was to improve the quality of clove oil by using adsorption-distillation process. Clove oil is one of essential oil products extracted from clove plants and currently considered as the most main product of Essential Oils Cluster in Batang Regency, Central Java. The main problem of essential oil production is low product quality due to high level of Eugenol and dark color of oil which does not met the National Standard. Therefore, process improvement was required to increase product quality as well as yield of product. The results showed that equipment material contributes significantly to the colors due to the availability of Fe ions. The addition of citric acid of 0.6-10% could improve the colors. The stirring process was proved as important variables to yield of products, while optimum time and temperature were optimum at 60 min and 50°C, respectively. © Maxwell Scientific Organization, 2014.

SciVal Topic Prominence

Topic: Eugenol | Syzygium | Clove Oil

Prominence percentile: 82.034

Author keywords

Adsorption Eugenol Oil Stirred tank The percentage of Fe bound

ISSN: 20407459
Source Type: Journal
Original language: English
DOI: 10.19026/rjaset.7.744
Document Type: Article
Publisher: Maxwell Science Publications

References (15)

View in search results format ›

All Export Print E-mail Save to PDF Create bibliography

Metrics View all metrics ›

4 Citations in Scopus
42nd percentile

0.24 Field-Weighted Citation Impact

PlumX Metrics
Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 4 documents

Physico-chemical properties of clove oil from three forest clove accession groups in Maluku
Mahulette, A.S. , Hariyadi , Yahya, S.
(2020) IOP Conference Series: Earth and Environmental Science

Investigation of active compound in clove (Syzygium aromaticum) extrac and compared with inhibitors of growth of some types of bacteria causing food poisoning
Karm, I.F.A.
(2020) Iraqi Journal of Agricultural Sciences

The physicochemical components and characteristic from essential oils of forest cloves syzygium aromaticum (myrtaceae) in maluku province, Indonesia
Mahulette, A.S. , Hariyadi , Yahya, S.
(2019) Plant Archives

View all 4 citing documents

Inform me when this document is cited in Scopus:

1 Standar Nasional Indonesia Minyak Daun Cengkeh
(2006)
Badan Standarisasi Nasional, SNI 06-2387-2006

2 Box, G.E.P., Hunter, W.G., Hunter, J.S.
Statistic for Experimenters
(1978) . Cited 70 times.
John Wiley and Sons, New York

3 Chami, N., Chami, F., Bennis, S., Trouillas, J., Remmal, A.
Antifungal treatment with carvacrol and eugenol of oral candidiasis in immunosuppressed rats. (Open Access)

(2004) *The Brazilian journal of infectious diseases : an official publication of the Brazilian Society of Infectious Diseases*, 8 (3), pp. 217-226. Cited 93 times.
doi: 10.1590/S1413-86702004000300005

View at Publisher

4 Cheng, S.-S., Liu, J.-Y., Chang, E.-H., Chang, S.-T.
Antifungal activity of cinnamaldehyde and eugenol congeners against wood-rot fungi

(2008) *Bioresource Technology*, 99 (11), pp. 5145-5149. Cited 109 times.
doi: 10.1016/j.biortech.2007.09.013

View at Publisher

5 EOA Spesifications and Standards
(1975) *New York*, pp. 35-37.
EOA (Essential Oil Association) of USA

6 Guenther, E.
Minyak Atsir, Jilid I, penerjemah: S. Ketaren, hal
(1987) , pp. 19-20. Cited 2 times.
99-274. Penerbit Universitas Indonesia, Jakarta.

7 Patchouli oil purification and clove leaf oil in complexometry
(2008) *J. LITTRI (Indonesian)*, 4 (1), pp. 36-42.
Ma'mun

8 Marwati, T., Rusli, M.S.
Improving the quality of clove leaf oil through the refining process
(2005) *J. Post. Harvest (Malay)*, 2, pp. 45-52.
Erliza Noor dan Edy Mulyono

Set citation alert >

Set citation feed >

Related documents

Effect of initial temperature and concentration of catalyst in polyeugenol production

Widayat , Fatuchrohman, A. , Gustiasih, E.
(2015) AIP Conference Proceedings

Evaluation of antifungal activity in essential oil of the Syzygium aromaticum (L.) by extraction, purification and analysis of its main component eugenol

Rana, I.S. , Rana, A.S. , Rajak, R.C.
(2011) Brazilian Journal of Microbiology

Pharmacological and toxicological properties of Eugenol | Öjenolün farmakolojik ve toksikolojik özellikleri

Mohammadi Nejad, S. , Özgüneş, H. , Başaran, N.
(2017) Turkish Journal of Pharmaceutical Sciences

View all related documents based on references

Find more related documents in Scopus based on:

Authors > Keywords >

9 Oyedemi, S.O., Okoh, A.I., Mabinya, L.V., Pirochenva, G., Afolayan, A.J.
The proposed mechanism of bactericidal action of eugenol, A-terpineol and Y-terpinene against Listeria monocytogenes, Streptococcus pyogenes, Proteus vulgaris and escherichia coli

(2009) *African Journal of Biotechnology*, 8 (7), pp. 1280-1286. Cited 110 times.
http://www.academicjournals.org/AJB/PDF/pdf2009/6Apr/Oyedemi%20et%20al.pdf

View at Publisher

10 Profil Kluster Minyak Atsiri Kabupaten Batang Propinsi Jawa Tengah, 2011

11 Sadeghian, H., Seyedi, S.M., Saberi, M.R., Arghiani, Z., Riazi, M.
Design and synthesis of eugenol derivatives, as potent 15-lipoxygenase inhibitors

(2008) *Bioorganic and Medicinal Chemistry*, 16 (2), pp. 890-901. Cited 63 times.
doi: 10.1016/j.bmc.2007.10.016

View at Publisher

12 Shelly, T.E., Edu, J., McInnis, D.
Pre-Release consumption of methyl eugenol increases the mating competitiveness of sterile males of the oriental fruit fly, Bactrocera dorsalis, in large field enclosures
(Open Access)

(2010) *Journal of Insect Science*, 10 (1), art. no. 8. Cited 33 times.
https://academic.oup.com/jinsectscience
doi: 10.1673/031.010.0801

View at Publisher

13 Silviana, S.
Proses pengkelatan minyak cengkeh dengan asam sitrat
(2007)
Jurnal Metana, Program Diploma Fakultas Teknik Universitas Diponegoro Semarang

14 Silviana, R.O.A., Dan Errysa, P.
Peningkatan Mutu Minyak Daun Cengkeh Rakyat melalui Proses Adsorbsi dengan Bleaching Earth
(2006) *Prosiding Seminar UPN "Kejuangan", Yogyakarta*

15 Vidhya, N., Niranjali Devaraj, S.
Induction of apoptosis by eugenol in human breast cancer cells

(2011) *Indian Journal of Experimental Biology*, 49 (11), pp. 871-878. Cited 44 times.
http://nopr.niscair.res.in/bitstream/123456789/13005/1/IJEB%2049%2811%29%20871-878.pdf

Hadiyanto, ; Department of Chemical Engineering, Center of Biomass and Renewable Energy (CBIORE), Diponegoro University, Indonesia
© Copyright 2018 Elsevier B.V., All rights reserved.

Brought to you by Universitas Diponegoro

Source details

Research Journal of Applied Sciences, Engineering and Technology

Scopus coverage years: from 2009 to 2015
(coverage discontinued in Scopus)
Publisher: Maxwell Scientific Publications
ISSN: 2040-7459 E-ISSN: 2040-7467
Subject area: Computer Science: General Computer Science | Engineering: General Engineering

SJR 2018
0.116

SNIP 2018
0.338

View all documents > | Set document alert | Save to source list

ELSEVIER
Terms and conditions ↗ Privacy policy ↗
Copyright © Elsevier B.V ↗. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.
We use cookies to help provide and enhance our service and tailor content. By continuing, you agree to the use of cookies.
RELX

RESEARCH JOURNAL OF APPLIED SCIENCES, ENGINEERING AND TECHNOLOGY

Journal Information

Print ISSN: 2040-7459
Online ISSN: 2040-7467
Frequency: 12
Current Issue/Volume/Year
Indexed In: SJR = 0.14 (2016); H Index = 16
Journal Impact = 0.22 (2016) (ResearchGate)
Google Scholar
GIF = 0.654 (2015)
PORTICO
Ulrich Database
EMBASE
Reaxys
Academic Journals Database
Cornell University Library
Harold B. Lee Library
Dowling College Library
Chemical Abstracts Service (CAS) (The American Chemical Society)
DOAJ
Airiti Library, Taiwan
Genamics JournalSeek
Open J-Gate

Download Cover Page

Download EBM-List

Download Journal-Info

ISSN (Online): 2040-7467
ISSN (Print): 2040-7459

Submit an article

Information

- Current Issue
- Archives
- For Authors

Sales & Services

- Subscribe/Renew
- Library
- Reprints/Offprints
- Special Sale
- Customer Services

Current Issue

2020 (Vol. 17, Issue: 3)

Using Photo Voltage Solar and Light Emitting Diodes to Reduce Energy Consumption: Case Study in Port Sudan City

[1, 2]Naeim Farouk, [2]Mohand Omer, [3]Samah. G. Babiker and [4]Mohamed O. Sid-Ahmed

Year: 2020, Volume: 17, Issue: 3, Page No: 64-73

Abstract PDF HTML

A Novel Approach in Digital Controllers Design Using Metaheuristic Algorithms

RESEARCH JOURNAL OF APPLIED SCIENCES, ENGINEERING AND TECHNOLOGY

Journal Information

Print ISSN: 2040-7459
Online ISSN: 2040-7467
Frequency: 12
Current Issue/Volume/Year

Download Cover Page
Download EBM-List
Download Journal-Info

ISSN (Online): 2040-7467
ISSN (Print): 2040-7459

Submit an article

Information

- Current Issue
- Archives
- For Authors

Sales & Services

- Subscribe/Renew
- Library
- Reprints/Offprints
- Special Sale
- Customer Services

Editorial Board

Editor-In-Chief

Dr. Gerard G. Dumancas
Arthritis and Clinical Immunology Research Program, MS58,
Oklahoma Medical Research Foundation
Oklahoma City, OK 73104
United States of America

Dr. Gerard G. Dumancas
Arthritis and Clinical Immunology Research Program, MS58,
Oklahoma Medical Research Foundation
Oklahoma City, OK 73104
United States of America

Managing Editor

Afshan Akbar
1562 Ocean Avenue, Apt # 5D
Brooklyn, 11230-NY, USA

Publishing Editor

Faisal Mehmood
16W-K, KHALEEQ ROAD, Gulistan Colony 1,
38000-Faisalabad, Pakistan

Editors

Prof. Ling Wang, China
Dr. Davies Onome, Nigeria
Prof. Zedira Hamma, Algeria
Dr. Beguenane, Canada
Dr. Ozgur Kisi, Turkey
Dr. Chetate Boukhemis, Alegria

Prof. Okigbo Raphael N., Nigeria
Dr. Fehmi Nair, Turkey
Prof. Nilanchal Patel, India
Prof. Zhenya Yan, China
Dr. Constantinos Zervides, United Kingdom
Dr. Emre Sancak, Turkey
Dr. Nuhu A. ademoh, Nigeria
Dr. Hossein Najafi, Iran
Dr. Faieza Abdul Aziz, Malaysia
Prof. HPS Abdul Khalil, Malaysia
Dr. S. Hamid Fathi, Iran
Dr. Faisal Manzoor Arain, Canada
Dr. Ezechiel Longe, Nigeria
Prof. Abdel-Badeeh M. Salem, Egypt
Prof. Gamal A. Moaty, Egypt
Prof. Weitao Zheng, China
Prof. A. Cheknane, Algeria
Prof. Gwendoline Ee, Malaysia
Prof. W. Mahmood Mat Yunus, Malaysia
Prof. Leonid Bulavin, Ukraine
Dr. Harinder Pal Singh Missan, Trinidad and Tobago
Dr. Chien Ho Ko, Taiwan
Prof. Bin Xu, China
Dr. Vijay Kumar Jain, India
Dr. B.L. Dhananjaya, India
Dr. Deepankar Sharma, India
Dr. S.S.RIAZ AHAMED, India
Dr. Nirmalendu Bikas Sinha, India
Prof. Asrar Ul Haq Sheikh, Saudi Arabia
Prof. Mohamed M mansour, Saudi Arabia
Prof. Lisheng XU, China
Prof. P.K. Bajpai, India
Prof. Hanafi Ismail, Malaysia
Prof. Mabrouk Benhamou, Morocco
Prof. Yatendra Singh Jain, India
Prof. K.W. Chau, China
Prof. Abdelhakim El Imrani, Morocco
Dr. Dinesh C. Gupta, India
Prof. Ravi Kumar, India
Dr. Boonsap Witchayangkoon, Thailand
Dr. Shanker Ram, India
Prof. Bharat Raj Singh, India
Prof. Dr. Alaa Abdel Wahed Hassan Abdel Bary, Egypt
Dr. Syed Abdul Moiz, South, Korea
Dr. Faisal Sultan Al-Subaiee, Saudi Arabia
Dr. Mohammed Ashraf Gondal, Saudi Arabia
Dr. Mohammadreza Alizadeh, Iran
Dr. Nakul V. Karkare, United States of America
Prof. Nkasiobi Silas Oguzor, Nigeria
Dr. Abraham I. Oba, Nigeria
Prof. Dr. Byung-Gyu Kim, Korea, South

Technical Editor

Dr. A. Arul Lawrence selvakumar, India

Dr. Malik Yousef, Israel
Prof. Osama El-Sayed Gouda, Egypt
Dr. John Mounsey, Ireland
Dr. Sabah A. Abdul-Wahab, Oman
Dr. Shreerup Goswami, India
Dr. Fabian I. Ezema, Nigeria
Dr. Kashmir Singh, India
Dr. Ecevit Eyduran, Turkey
Dr. Akbar Esmaeili, Iran
Dr. Rafiqul Islam, Bangladesh
Dr. M. K. Verma, India
Prof. Charles V Sammut, Malta
Dr. Francis Anyasi Ifeanyi, Nigeria
Prof. Kenneth P. Camilleri, Malta
Dr. Wael G. Abdelrahman, Saudi Arabia
Dr. Gholamreza Zahedi, Malaysia
Dr. Nazan Dagustu, Turkey
Dr. Olena Aktan, Ukraine
Dr. Ajay Joshi, Trinidad and Tobago
Dr. Suheyla Yerel Kandemir, Turkey
Dr. Ta Yeong Wu, Malaysia
Dr. Mohamad AOUDE, Lebanon
Dr. Patrick Kareru, Kenya
Dr. Lakhoua Mohamed Najeh, Tunisia
Dr. Abdelmalek Zidouri, Saudi Arabia
Dr. Vijay Srivatsan, United States of America
Dr. Wichian Sittiprapaporn, Thailand
Dr. Md Babul Islam, Bangladesh
Dr. Soumyajit Mukherjee, India
Dr. Ajay Kumar, India
Dr. A.K. Thakur, India
Dr. Pradeep Kumar, India
Dr. Olayiwola Oni, United Kingdom
Prof. R.H. Talwekar, India
Dr. Dinesh Chand Sharma, India
Dr. Vuda Sreenivasarao, India
Dr. S. Satyanarayana, India
Dr. D. Harikishore Kumar Reddy, Korea, South
Dr. C. Suresh Gnana Dhas, India
Dr. Oyetunji Elkanah, Ghana
Dr. M. K. Verma, India
Mr. Jitesh Dundas, India
Dr. Masoud Rashidi, Norway
Dr. Godwin A. Agbo, Nigeria
Mr. Fayez Badr, Egypt
Mr. S. S. Ganji, Iran
Dr. Shailja Sharma, India
Dr. S.S.N. Perera, Sri Lanka
Dr. Nameeta Brahme, India
Dr. Ragip Adiguzel, Turkey
Dr. Hongjun Jia, United States of America
Dr. Seracettin Arasan, Turkey
Dr. A.A.H. Alamiery, Iraq
Dr. Umesh Chandra Srivastava, India

Dr. Umesh Chandra Sahoo, India
Dr. Muhammad Al-Salamah, Saudi Arabia
Dr. Peyman Azimi Anaraki, Iran
Dr. Bei Han, China
Dr. Om Prakash Singh, India
Dr. Amit Chaudhry, India
Dr. Zeeshan Nawaz, Saudi Arabia
Dr. Ho SoonMin, Malaysia
Mr. Tarak Benslimane, Algeria
Mr. Onder Yildiz, Turkey
Mr. Kaveh Mollazade, Iran
Dr. Subir Kumar Nandy, Sweden
Mr. Ashish Patel, India
Dr. K. K. Pathak, India
Dr. Olatunji Ololade Moses, NIGERIA
Prof. M. Nageeb Rashed, Egypt
Mr. Bayram Yurt, Turkey
Mr. G. Baskar, India
Dr. Arabinda Sharma, India
Prof. Kumar Chinnaiyan V, India
Mr. A. Al-Mukhtar, Germany
Mr. Nagaraj, India
Mr. Mohammad Haddadzade, Iran
Ms Rampriya B, India
Mr. Fawwaz Jinan Jibrael, Iraq
Dr. A.K. BHARDWAJ, India
Mr. Murugan Veerapandian, Korea, South
Ms Mohana, Korea, South
Mr. Sinan Korkmaz, Switzerland
Mr. Neelashetty Kashappa, India
Mr. Nilimesh Halder, Australia
Mr. Mohammad Jawaid, Malaysia
Mr. Michael S. Okundamiya, Nigeria
Prof. Rui Antunes, Portugal
Amin Yousefi-Sahzabi, Japan
Mr. M.V. Raghavendra, India
Dr. Alireza Bahadori, Australia
Mr. Nandkishore D.Rao, India

Copyright © 2020. MAXWELL Scientific Publication Corp., All rights reserved

RESEARCH JOURNAL OF APPLIED SCIENCES, ENGINEERING AND TECHNOLOGY

About this Issue

Content-List - Cover Page - EBM-List - Journal-Info

2014 (Vol. 7, Issue: 18)

ISSN (Online): 2040-7467
ISSN (Print): 2040-7459

Submit an article

Information

- Current Issue
- Archives
- For Authors

Sales & Services

- Subscribe/Renew
- Library
- Reprints/Offprints
- Special Sale
- Customer Services

Copyright © 2020. MAXWELL Scientific Publication Corp., All rights reserved

Research Journal of Applied Sciences, Engineering and Technology 7(18): 3867-3871, 2014
DOI:10.19026/rjaset.7.744
ISSN: 2040-7459; e-ISSN: 2040-7467
© 2014 Maxwell Scientific Publication Corp.
Submitted: November 16, 2013 Accepted: November 28, 2013 Published: May 10, 2014

Research Article

Improvement of Clove Oil Quality by Using Adsorption-distillation Process

[1]Widayat, [2]Bambang Cahyono, [1]Hadiyanto and [2]Ngadiwiyana
[1]Department of Chemical Engineering, Center of Biomass and Renewable Energy (CBIORE),
[2]Department of Chemistry, Diponegoro University, Indonesia

Abstract: The objective of this research was to improve the quality of clove oil by using adsorption-distillation process. Clove oil is one of essential oil products extracted from clove plants and currently considered as the most main product of Essential Oils Cluster in Batang Regency, Central Java. The main problem of essential oil production is low product quality due to high level of Eugenol and dark color of oil which does not met the National Standard. Therefore, process improvement was required to increase product quality as well as yield of product. The results showed that equipment material contributes significantly to the colors due to the availability of Fe ions. The addition of citric acid of 0.6-10% could improve the colors. The stirring process was proved as important variables to yield of products, while optimum time and temperature were optimum at 60 min and 50°C, respectively.

Keywords: Adsorption, eugenol, oil, stirred tank, the percentage of Fe bound

INTRODUCTION

Batang District is one of the largest regions of clove oil productions in Central Java Indonesia. The number of oil refineries in this area is more than 30 units which owned by a Small Medium Entrepreneurship (SME). This SME produces clove oil, clove stem oil and patchouli oil which reaches 20% of production growth (Profil Kluster Minyak Atsiri Kabupaten Batang Propinsi Jawa Tengah, 2011).

Clove oil is an essential oil extracted from clove plants (*Eugenia caryophyllata* thunb), especially from its flowers, stems and leaves. The quality of clove oil is normally indicated by its eugenol and carryophyllene contents (Badan Standarisasi Nasional, 2006). The content of eugenol in oil is mainly affected by quality of raw materials and oil refining methods. The highest eugenol level is shown by oil extracted from flowers and stem of clove plants (Table 1).

Eugenol is an alkyl bond ($C_{10}H_{12}O_2$) or 2-methoxy-4- (2-propenyl) phenol and it is a member of the alkyl benzene. Eugenol is very reactive to the strong base such as NaOH and KOH. Apparently, eugenol is liquid form with colourless or slightly yellowish and it is soluble in alcohol, chloroform and ether and slightly soluble in water, smelling clove oil, burning taste and heat in the skin. The boiling point of eugenol is 256°C and flash point of 104°C while the vapor pressure of 10 mmHg at 123°C. The chemical structure of eugenol is shown in Fig. 1 and it has density of 1.064 to 1.068 g/mL, a molecular weight of 164.20 g/mol and a refractive index of 1.541 at 20°C.

Table 1: Eugenol content in clove oil (Guenther, 1987)

Sources	Content (%)
Flower	90-95
Stem	83-95
Leaf	82-87

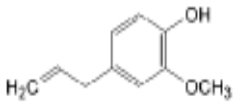

Fig. 1: Chemical structure of eugenol

The eugenol is mostly utilized in the perfume industries, flavor concentrates and in the pharmaceutical industry-as an antiseptic and anesthetic drug. It is also used to produce isoeugenol as a raw material in the manufacture of vanillin. Oyedemi *et al*. (2009) studied the use of eugenol for the metabolic activity of bacteria types *Listeria monocytogenes*, *Streptococcus pyogenes*, *Escherichia coli* and *Proteus vulgaris*. Cheng *et al*. (2008) utilize this compound and sinamaldehid as an anti-fungal for the type of fungus and *Laetiporus sulphureus*, which is considerable as inhibitory activity. Shelly *et al*. (2010) used methyl eugenol (eugenol derivative) to increase fertility of insects and the results were quite promising. Sadeghian *et al*. (2008) have conducted a synthesis of eugenol derivatives and tested to inhibit the activity of the enzyme 15-lipogenase. This enzyme was involved in many diseases such as asthma and lung cancer. The results showed that the compound could inhibit the performance of the enzyme 15-lipogenase. Furthermore, Chami *et al*. (2004) also have tested

Corresponding Author: Hadiyanto, Chemical Engineering Department, Center of Biomass and Renewable Energy (CBIORE), Diponegoro University, Indonesia
This work is licensed under a Creative Commons Attribution 4.0 International License (URL: http://creativecommons.org/licenses/by/4.0/).

Research Journal of Applied Sciences, Engineering and Technology 7(18): 3699-3708, 2014
DOI:10.19026/rjaset.7.724
ISSN: 2040-7459; e-ISSN: 2040-7467
© 2014 Maxwell Scientific Publication Corp.
Submitted: March 08, 2013 Accepted: April 22, 2013 Published: May 10, 2014

Research Article

Strength Reliability Analysis of Turbine Blade Using Surrogate Models

Wei Duan, Liqiang An and Zhangqi Wang
Department of Mechanical Engineering, North China Electric Power University,
Baoding, Hebei, China

Abstract: There are many stochastic parameters that have an effect on the reliability of steam turbine blades performance in practical operation. In order to improve the reliability of blade design, it is necessary to take these stochastic parameters into account. In this study, a variable cross-section twisted blade is investigated and geometrical parameters, material parameters and load parameters are considered as random variables. A reliability analysis method as a combination of a Finite Element Method (FEM), a surrogate model and Monte Carlo Simulation (MCS), is applied to solve the blade reliability analysis. Based on the blade finite element parametrical model and the experimental design, two kinds of surrogate models, Polynomial Response Surface (PRS) and Artificial Neural Network (ANN), are applied to construct the approximation analytical expressions between the blade responses (including maximum stress and deflection) and random input variables, which act as a surrogate of finite element solver to drastically reduce the number of simulations required. Then the surrogate is used for most of the samples needed in the Monte Carlo method and the statistical parameters and cumulative distribution functions of the maximum stress and deflection are obtained by Monte Carlo simulation. Finally, the probabilistic sensitivities analysis, which combines the magnitude of the gradient and the width of the scatter range of the random input variables, is applied to evaluate how much the maximum stress and deflection of the blade are influenced by the random nature of input parameters.

Keywords: Finite element method, Monte Carlo simulation, probabilistic sensitivity analysis, reliability analysis, surrogate model, turbine blade

INTRODUCTION

The turbine blade is one of the key components in a steam turbine. There are many unmeasurable and uncontrollable factors in the process of blade design, manufacturing, installation and operation that result in the randomness of structural responses. The traditional deterministic design methods (Yan *et al*., 2005; Liu and Meng, 1999) ignore these stochastic parameters effects, or make up the randomness through a conservative assumption (such as safety factor). So, it is difficult to explain why the blade is failed in normal operation as it is designed correctly by the traditional deterministic method and is also difficult to evaluate quantitatively how much the blade is safe. To realize the high reliability performance of the blade, it is necessary to consider these stochastic parameters and carry out reliability analysis based design.

In blade reliability analysis, structure responses of the blade (such as stress, deformation and frequencies) are obtained by a finite element method and the limit state functions are implicit with respect to basic random variables. Reliability analysis techniques, such as FORM and SORM (Choi *et al*., 2007; Grandhi and Wang, 1998), require limit state function gradients with respect to the basic random variables of finding most probable failure point at each iteration, but it is very difficult to obtain the gradients of the limit state function with respect to random variables when the limit state function is implicit.

Monte Carlo Simulation (MCS) can be applied to many practical problems, allowing the direct consideration of any type of probability distribution for the random variables; however, the computation time can be prohibitively high, especially when the structure exhibits non-linear behavior or the numerical model is rather complex. Although some variance reduction techniques (Park, 1994; Disciuva and Lomario, 2003), such as importance sampling and Latin hypercube sampling, have been proposed to reduce the number of samples and reduce the computational time to a certain extent, it is still not widely used in practical engineering.

Surrogate-based reliability analysis is considered to be an effective approximation approach for computationally expensive models with implicit limit functions (Queipo *et al*., 2005; Youn and Choi, 2004).

Corresponding Author: Wei Duan, Department of Mechanical Engineering, North China Electric Power University, Baoding, China, Tel.: 86-312-7525031
This work is licensed under a Creative Commons Attribution 4.0 International License (URL: http://creativecommons.org/licenses/by/4.0/).

Research Journal of Applied Sciences, Engineering and Technology 7(18): 3746-3762, 2014
DOI:10.19026/rjaset.7.730
ISSN: 2040-7459; e-ISSN: 2040-7467
© 2014 Maxwell Scientific Publication Corp.
Submitted: July 25, 2013 Accepted: August 12, 2013 Published: May 10, 2014

Research Article

Effect of Some Input Parameters on 3D Basin and Petroleum Systems Modelling: A Case Study of the Norwegian Section of the Northern North Sea

[1]Joel Ben-Awuah, [1]Spariharijoana Andriamiaja, [1]Abubakar Mijinyawa, [1]Abdullah Ali,
[1, 2]Numair Ahmed Siddiqui and [3]Gerald Wemazenu Adda
[1]Department of Geosciences, Faculty of Geosciences and Petroleum Engineering,
University Teknologi PETRONAS (UTP), 31750 Tronoh, Perak-Malaysia
[1, 2]Department of Petroleum Engineering, NED University of Engineering and Technology,
Karachi, Pakistan
[3]Petroleum Commission, Ghana

Abstract: The objective of this study is to test the influence of some key input parameters in basin modelling and to evaluate the resultant effect of varying these parameters on the model. 3D basin modelling and petroleum system analysis of the northern North Sea has been carried out using the PETROMOD software. The model was calibrated using well 34/8-7 in the Visund field. Different input parameters such as heat flow, source rock properties, fault properties, paleo water depth, source rock kinetics, migration methods and different erosion scenarios have been varied and their effects on the model assessed. The effect of the various input parameters has been assessed in terms of hydrocarbon volumes in the Kvitebjørn and Visund fields, source rock maturity, transformation ratios, hydrocarbon saturations and the time hydrocarbon generation began in the Draupne and Heather Formation source rocks. Increase in heat flow increases source rock maturity, the start of hydrocarbon generation, transformation ratios and results in the generation of a lot more gas than oil. Hydrocarbon generation starts at shallower depths with higher heat flow. Increasing Total Organic Content (TOC) and Hydrogen Index (HI) generally results in increase in the volume of hydrocarbons generated. The increase in HI, however, results in the generation of a lot more oil than gas. High TOC and HI also increase the hydrocarbon saturations in the source rock. Increasing Paleo Water Depth (PWD) has a marginal effect on the model. It increases the volume of oil and decreases the volume of gas marginally. Varying the PWD has no significant effect on source rock maturity, transformation ratios and hydrocarbon saturations. Opening the fault planes resulted in an increase in the volume of hydrocarbons generated. The increase was more evident in the volume of oil than gas. This increase in volumes is a consequence of additional migration pathways created by the faults. Varying the erosion thickness of the Draupne Formation did not have any effect on the model.

Keywords: Basin modelling, heat flow, input parameters, petroleum system modelling, source rocks

INTRODUCTION

Petroleum system and basin model: A petroleum system is a geologic system that encompasses the hydrocarbon source rocks and all related oil and gas and which includes all of the geologic elements and processes that are essential if a hydrocarbon accumulation is to exist (Magoon and Dow, 1994). A petroleum systems model is a digital data model of a petroleum system in which the interrelated processes and their results can be simulated in order to understand and predict them (Hantschel and Kauerauf, 2009). Basin modelling is dynamic modelling of geological processes in sedimentary basins over geological time spans (Hantschel and Kauerauf, 2009).

The geological processes calculated and updated at each step include deposition, erosion, compaction, heat flow analysis, expulsion, phase dissolution, hydrocarbon generation, accumulation and migration. These processes are simulated in a dynamic petroleum systems model in the assessments of exploration risks, migration scenarios and drainage areas. The model seeks to answer questions such as whether hydrocarbons have been generated, where they have been generated, when they were generated, the properties of the hydrocarbons generated and the prospects the hydrocarbons have migrated into. To achieve these results, a lot of data has to be inputted into the model before simulation. This data ranges from source rock properties, reservoir properties, heat flow,

Corresponding Author: Joel Ben-Awuah, Department of Geosciences, Faculty of Geosciences and Petroleum Engineering, University Teknologi PETRONAS (UTP), 31750 Tronoh, Perak-Malaysia
This work is licensed under a Creative Commons Attribution 4.0 International License (URL: http://creativecommons.org/licenses/by/4.0/).