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

Judul Jurnal Ilmiah (Artikel)	:	Kinetics of Ultrasound-Assisted Extraction of Anthocyanin from Purple Roselle Calyces under different pH Conditions		
Jumlah Penulis	:	6 orang		
Status Pengusul	:	Penulis pertama/ ~~penulis ke – 3/ penulis korespondensi~~		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	Chemistry and Chemical Technology
		b. Nomor ISSN	:	1996-4196
		c. Volume, nomor, bulan, tahun	:	Volume 12, Issue 4, 2018.
		d. Penerbit	:	National Library of Ukraine Vernadsky
		e. DOI Artikel	:	10.23939/chcht12.04.523
		f. Alamat web Jurnal	:	http://science2016.lp.edu.ua/chcht
		Alamat artikel	:	http://science2016.lp.edu.ua/chcht/kinetics-ultrasound-assisted-extraction-anthocyanin-purple-roselle-calyces-under-different-ph
		g. Terindeks	:	SCOPUS (Q3)

Kategori Publikasi Jurnal Ilmiah (Beri ✓pada katergori 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 Artikel (10%)	3	4	
b. Ruang lingkup dan kedalaman pembahasan (30%)	10	10	
c. Kecukupan dan kemutakhiran data/ informasi dan metodologi (30%)	12	9	
d. Kelengkapan unsur dan kualitas terbitan/ jurnal (30%)	9	10	
Total = (100 %)	34	33	33,5
Nilai pengusul = (60% x 33,5) = ...20,1.....			

Semarang,

Reviewer 2

Prof. Dr. Ir. Didi Dwi Anggoro, M.Eng.
NIP. 19671114 199303 1 001
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Reviewer 1

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Unit Kerja : DepartemenTeknik Kimia FT UNDIP

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

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		g. Terindeks	:	SCOPUS (Q3), SJR = 0.19

Kategori Publikasi Jurnal Ilmiah (Beri ✓pada katergori 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			.3
b. Ruang lingkup dan kedalaman pembahasan (30%)	12			10
c. Kecukupan dan kemutakhiran data/ informasi dan metodologi (30%)	12			12
d. Kelengkapan unsur dan kualitas terbitan/ jurnal (30%)	12			9
Total = (100%)	**40**			**34**
Nilai pengusul = 60% x 34 = 20.4				**20.4**

Catatan penilaian artikel oleh Reviewer:

1. Kesesuaian dan kelengkapan unsur isi jurnal:
Artikel terdiri dari: Title, Abstract, Introduction, Experimental, Results and Discussion, Conclusion, References. Artikel ditulis sesuai dengan Guide for Author. Substansi artikel sesuai dengan bidang ilmu Teknik Kimia. Persamaan yang ada mengalami kerusakana sehingga tidak terbaca.

2. Ruang lingkup dan kedalaman pembahasan:
Artikel membahas tentang kinetika ekstraksi berbantu ultrasonic untuk memperoleh antosian dari kelopak rosela ungu ekstraksi pada berbagai pengaruh pH. Model kinetika yang digunakan adalah kinetika order 2 sederhana, selanjutnya antara model dan hasil eksperimen dibandingkan. Pembahasan ditulis cukup baik dan mensitasi cukup banyak artikel pendukung. Terdapat 16 dari 37 referensi (43.24%) digunakan dalam pembahasan. Hasil sudah cukup banyak, walaupun pembahasan kurang begitu detail, sehingga dampak terhadap pengembangan ilmu terkait (kinetika reaksi pangan) kurang siginifikan.

3. Kecukupan dan kemutakhiran data/infrmasi dan metodologi:
Kemutakhiran artikel sangat baik, dimana sebanyak 29 dari 37 referensi yang digunakan (78.38%) adalah 10 tahun terakhir (mulai tahun 2011). Metode penelitian dituliskan cukup singkap namun memenuhi standar penulisan yang dipersyaratkan dalam jurnal tersebut.

4. Kelengkapan unsur dan kualitas terbitan:
Jurnal diterbitkan oleh Lviv Polytechnic National University, Lviv Ukraina. Jurnal ini masuk dalam kategori jurnal terindeks SCOPUS Q3 dengan SJR = 0.19 (Tahun 2018), H index=9. Editorial board jurnal ini hanya terdiri dari 7 negaran namun kualitas terbitan cukup baik dan serta disertai dengan petunjuk penulisan. Penjaminan mutu kualitas tulisan agak kurang diperhatikan (misalnya penulisan persamaan). Nilai similaritas artikel berdasarkan Turnitin sebesar 14%

Semarang,
Reviewer I

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

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		g. Terindeks	:	SCOPUS (Q3)

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- [ ] 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 Artikel (10%)	4			4
b. Ruang lingkup dan kedalaman pembahasan (30%)	12			10
c. Kecukupan dan kemutakhiran data/ informasi dan metodologi (30%)	12			9
d. Kelengkapan unsur dan kualitas terbitan / jurnal (30%)	12			10
Total = (100%)	**40**			33
Nilai pengusul = 60% x				

Catatan penilaian artikel oleh Reviewer:

1. Kesesuaian dan kelengkapan unsur isi artikel:

- Isi artikel sesuai dengan judul artikel.
- Isi artikel mengandung unsur: ~~yang telah~~
  1. Abstract + keyword
  2. Introduction
  3. Experimental
  4. Results and Discussion
  5. Conclusions.
  6. References.

2. Ruang lingkup dan kedalaman pembahasan:

- Ruang lingkup artikel sesuai dengan Teknik kimia, khususnya kinetika reaksi kimia.
- Pembahasan artikel cukup mendalam, dengan dilengkapi 4 Figure dan 2 Tabel.
- Selain itu pembahasan artikel menggunakan referensi yang cukup banyak (31).

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

- Data yang dihasilkan cukup untuk menjawab tujuan / judul artikel.
- Data hanya melihat efek dari suhu dan pH.
- Metodologi / model yang dikembangkan cukup mutakhir, yaitu tahun 2014 dan 2016
- Referensi yg digunakan cukup mutakhir (dari 31 referensi ada 16 yang 5 tahun terakhir)

4. Kelengkapan unsur dan kualitas terbitan:

- Kelengkapan unsur dari jurnal baik, dengan dicantumkan tanggal revisi dan accepted.
- Kualitas terbitan baik dengan ter-index Scopus dengan SJR tahun 2018 adalah 0,19 dan Quartiles 3 (Q3)

Semarang, 27/1/2020
Reviewer 2

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Chemistry and Chemical Technology
Volume 12, Issue 4, 2018, Pages 523-528

Kinetics of ultrasound-assisted extraction of anthocyanin from purple roselle calyces under different PH conditions (Article) (Open Access)

Aryanti, N., Nafiunisa, A., Bella, N., Sanjaya, R., Wardhani, D.H., Kumoro, A.C.

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

Abstract

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This research presents that the higher temperature results on higher extracted anthocyanin. In addition, it was found that pH 2 was preferable for obtaining greater anthocyanin content. Employing the second order kinetics model in this research confirmed the good fitting of the model and experimental data. © Aryanti N., Nafiunisa A., Bella N., Sanjaya R., Wardhani D., Kumoro A., 2018.

SciVal Topic Prominence

Topic: Anthocyanins | Cyanidin | Petunidin

Prominence percentile: 96.081

Author keywords

Anthocyanin Extraction Kinetics Roselle Ultrasound

ISSN: 19964196
Source Type: Journal
Original language: English
DOI: 10.23939/chcht12.04.523
Document Type: Article
Publisher: Lviv Polytechnic National University

References (38)

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1 Parniakov, O., Apicella, E., Koubaa, M., Barba, F.J., Grimi, N., Lebovka, N., Pataro, G., (...), Vorobiev, E.

Ultrasound-assisted green solvent extraction of high-added value compounds from microalgae Nannochloropsis spp.

(2015) *Bioresource Technology*, 198, pp. 262-267. Cited 66 times.
www.elsevier.com/locate/biortech
doi: 10.1016/j.biortech.2015.09.020

View at Publisher

2 Thirugnanasambandham, K., Sivakumar, V.

Microwave assisted extraction process of betalain from dragon fruit and its antioxidant activities (Open Access)

(2017) *Journal of the Saudi Society of Agricultural Sciences*, 16 (1), pp. 41-48. Cited 16 times.
https://www.journals.elsevier.com.proxy.undip.ac.id/journal-of-the-saudi-society-of-agricultural-sciences/
doi: 10.1016/j.jssas.2015.02.001

View at Publisher

3 Gandía-Herrero, F., Jiménez-Atiénzar, M., Cabanes, J., García-Carmona, F., Escribano, J.

Stabilization of the bioactive pigment of opuntia fruits through maltodextrin encapsulation

(2010) *Journal of Agricultural and Food Chemistry*, 58 (19), pp. 10646-10652. Cited 67 times.
doi: 10.1021/jf101695f

View at Publisher

4 Nipornram, S., Tochampa, W., Rattanatraiwong, P., Singanusong, R.

Optimization of low power ultrasound-assisted extraction of phenolic compounds from mandarin (Citrus reticulata Blanco cv. Sainampueng) peel

(2018) *Food Chemistry*, 241, pp. 338-345. Cited 46 times.
www.elsevier.com/locate/foodchem
doi: 10.1016/j.foodchem.2017.08.114

View at Publisher

5 Rodríguez-Pérez, C., Quirantes-Piné, R., Fernández-Gutiérrez, A., Segura-Carretero, A.

Optimization of extraction method to obtain a phenolic compounds-rich extract from Moringa oleifera Lam leaves

(2015) *Industrial Crops and Products*, 66, pp. 246-254. Cited 85 times.
www.elsevier.com/inca/publications/store/5/2/2/8/2/5
doi: 10.1016/j.indcrop.2015.01.002

View at Publisher

6 Dai, J., Mumper, R.J.

Plant phenolics: Extraction, analysis and their antioxidant and anticancer properties (Open Access)

(2010) *Molecules*, 15 (10), pp. 7313-7352. Cited 1763 times.
http://www.mdpi.com/1420-3049/15/10/7313/pdf
doi: 10.3390/molecules15107313

View at Publisher

7 Alighourchi, H.R., Barzegar, M., Sahari, M.A., Abbasi, S.

Effect of sonication on anthocyanins, total phenolic content, and antioxidant capacity of pomegranate juices

(2013) *International Food Research Journal*, 20 (4), pp. 1703-1709. Cited 32 times.
http://www.ifrj.upm.edu.my/20%20(04)%202013/28%20IFRJ%2020%20(04)%202013%20Barzegar%20(442).pdf

Nafiunisa, A. , Aryanti, N. , Wardhani, D.H.
(2019) Bulletin of Chemical Reaction Engineering & Catalysis

Conventional and ultrasound-assisted extraction of anthocyanin from red and purple roselle (Hibiscus sabdariffa L.) calyces and characterisation of its anthocyanin powder

Aryanti, N. , Nafiunisa, A. , Wardhani, D.H.
(2019) International Food Research Journal

Kinetics of ultrasound-assisted flavonoid extraction from agri-food solid wastes using water/glycerol mixtures

Makris, D.P.
(2016) Resources

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8 Zou, T.-B., Wang, M., Gan, R.-Y., Ling, W.-H.
Optimization of ultrasound-assisted extraction of anthocyanins from mulberry, using response surface methodology (Open Access)

(2011) *International Journal of Molecular Sciences*, 12 (5), pp. 3006-3017. Cited 90 times.
http://www.mdpi.com/1422-0067/12/5/3006/pdf
doi: 10.3390/ijms12053006

View at Publisher

9 Silva, S., Costa, E.M., Calhau, C., Morais, R.M., Pintado, M.E.
Anthocyanin extraction from plant tissues: A review

(2017) *Critical Reviews in Food Science and Nutrition*, 57 (14), pp. 3072-3083. Cited 52 times.
www.tandf.co.uk/journals/titles/10408398.asp
doi: 10.1080/10408398.2015.1087963

View at Publisher

10 Sant'Anna, V., Marczak, L.D.F., Tessaro, I.C.
Kinetic Modeling of Anthocyanin Extraction from Grape Marc

(2013) *Food and Bioprocess Technology*, 6 (12), pp. 3473-3480. Cited 14 times.
doi: 10.1007/s11947-012-1016-1

View at Publisher

11 Stintzing, F.C., Trichterborn, J., Carle, R.
Characterisation of anthocyanin-betalain mixtures for food colouring by chromatic and HPLC-DAD-MS analyses

(2006) *Food Chemistry*, 94 (2), pp. 296-309. Cited 53 times.
doi: 10.1016/j.foodchem.2005.01.018

View at Publisher

12 Mojica, L., Berhow, M., Gonzalez de Mejia, E.
Black bean anthocyanin-rich extracts as food colorants: Physicochemical stability and antidiabetes potential

(2017) *Food Chemistry*, 229, pp. 628-639. Cited 44 times.
www.elsevier.com/locate/foodchem
doi: 10.1016/j.foodchem.2017.02.124

View at Publisher

13 Chen, M., Zhao, Y., Yu, S.
Optimisation of ultrasonic-assisted extraction of phenolic compounds, antioxidants, and anthocyanins from sugar beet molasses

(2015) *Food Chemistry*, 172, pp. 543-550. Cited 114 times.
www.elsevier.com/locate/foodchem
doi: 10.1016/j.foodchem.2014.09.110

View at Publisher

14 Santos, D.T., Veggi, P.C., Meireles, M.A.A.
Extraction of antioxidant compounds from Jabuticaba (Myrciaria cauliflora) skins: Yield, composition and economical evaluation

(2010) *Journal of Food Engineering*, 101 (1), pp. 23-31. Cited 93 times.
doi: 10.1016/j.jfoodeng.2010.06.005

View at Publisher

15 Oancea, S., Grosu, C., Ketney, O., Stoia, M.
Conventional and ultrasound-assisted extraction of anthocyanins from blackberry and sweet cherry cultivars

(2013) *Acta Chimica Slovenica*, 60 (2), pp. 383-389. Cited 19 times.
http://acta.chem-soc.si/60/60-2-383.pdf

View at Publisher

16 Galván D'Alessandro, L., Dimitrov, K., Vauchel, P., Nikov, I.
Kinetics of ultrasound assisted extraction of anthocyanins from Aronia melanocarpa (black chokeberry) wastes

(2014) *Chemical Engineering Research and Design*, 92 (10), pp. 1818-1826. Cited 81 times.
http://www.elsevier.com.proxy.undip.ac.id:2048/wps/find/journaldescription.cws_home/713871/description#description
doi: 10.1016/j.cherd.2013.11.020

View at Publisher

17 Cai, Z., Qu, Z., Lan, Y., Zhao, S., Ma, X., Wan, Q., Jing, P., (...), Li, P.
Conventional, ultrasound-assisted, and accelerated-solvent extractions of anthocyanins from purple sweet potatoes

(2016) *Food Chemistry*, Part A 197, pp. 266-272. Cited 80 times.
www.elsevier.com/locate/foodchem
doi: 10.1016/j.foodchem.2015.10.110

View at Publisher

18 Rastogi, N.K.
Opportunities and challenges in application of ultrasound in food processing

(2011) *Critical Reviews in Food Science and Nutrition*, 51 (8), pp. 705-722. Cited 113 times.
doi: 10.1080/10408391003770583

View at Publisher

19 Charpe, T.W., Rathod, V.K.
Kinetics of ultrasound assisted extraction of wedelolactone from eclipta alba (Open Access)

(2016) *Brazilian Journal of Chemical Engineering*, 33 (4), pp. 1003-1010. Cited 12 times.
http://www.scielo.br/pdf/bjce/v33n4/0104-6632-bjce-33-04-1003.pdf
doi: 10.1590/0104-6632.20160334s20140234

View at Publisher

20 Silveira, S.T., Daroit, D.J., Sant'Anna, V., Brandelli, A.
Stability Modeling of Red Pigments Produced by Monascus purpureus in Submerged Cultivations with Sugarcane Bagasse

(2013) *Food and Bioprocess Technology*, 6 (4), pp. 1007-1014. Cited 41 times.
doi: 10.1007/s11947-011-0710-8

View at Publisher

21 Cacace, J.E., Mazza, G.

Mass transfer process during extraction of phenolic compounds from milled berries

(2003) *Journal of Food Engineering*, 59 (4), pp. 379-389. Cited 364 times.
doi: 10.1016/S0260-8774(02)00497-1

View at Publisher

22 Makris, D.P.

Kinetics of ultrasound-assisted flavonoid extraction from agri-food solid wastes using water/glycerol mixtures (Open Access)

(2016) *Resources*, 5 (1), art. no. 7. Cited 10 times.
http://www.mdpi.com/2079-9276/5/1/7/pdf
doi: 10.3390/resources5010007

View at Publisher

23 Tao, Y., Wu, D., Zhang, Q.-A., Sun, D.-W.

Ultrasound-assisted extraction of phenolics from wine lees: Modeling, optimization and stability of extracts during storage

(2014) *Ultrasonics Sonochemistry*, 21 (2), pp. 706-715. Cited 116 times.
www.elsevier.com/inca/publications/store/5/2/5/4/5/1
doi: 10.1016/j.ultsonch.2013.09.005

View at Publisher

24 Sun, J., Mei, Z., Tang, Y., Ding, L., Jiang, G., Zhang, C., Sun, A., (...), Bai, W.

Stability, antioxidant capacity and degradation kinetics of pelargonidin-3-glucoside exposed to ultrasound power at low temperature (Open Access)

(2016) *Molecules*, 21 (9), art. no. 1109. Cited 13 times.
http://www.mdpi.com/1420-3049/21/9/1109/pdf
doi: 10.3390/molecules21091109

View at Publisher

25 Cevallos-Casals, B.A., Cisneros-Zevallos, L.

Stability of anthocyanin-based aqueous extracts of Andean purple corn and red-fleshed sweet potato compared to synthetic and natural colorants

(2004) *Food Chemistry*, 86 (1), pp. 69-77. Cited 223 times.
www.elsevier.com/locate/foodchem
doi: 10.1016/j.foodchem.2003.08.011

View at Publisher

26 Wei, M.-C., Yang, Y.-C.

Extraction characteristics and kinetic studies of oleanolic and ursolic acids from Hedyotis diffusa under ultrasound-assisted extraction conditions

(2014) *Separation and Purification Technology*, 130, pp. 182-192. Cited 29 times.
www.elsevier.com/inca/publications/store/6/0/0/2/5/1/
doi: 10.1016/j.seppur.2014.04.029

View at Publisher

27 Lazar, L., Talmaciu, A.I., Volf, I., Popa, V.I.
Kinetic modeling of the ultrasound-assisted extraction of polyphenols from Picea abies bark

(2016) *Ultrasonics Sonochemistry*, 32, pp. 191-197. Cited 47 times.
www.elsevier.com/inca/publications/store/5/2/5/4/5/1
doi: 10.1016/j.ultsonch.2016.03.009

View at Publisher

28 Lee, J., Durst, R.W., Wrolstad, R.E.
Determination of total monomeric anthocyanin pigment content of fruit juices, beverages, natural colorants, and wines by the pH differential method: Collaborative study (Open Access)

(2005) *Journal of AOAC International*, 88 (5), pp. 1269-1278. Cited 1149 times.
https://oup.proxy.undip.ac.id/jaoac/issue
doi: 10.1093/jaoac/88.5.1269

View at Publisher

29 Petigny, L., Périno-Issartier, S., Wajsman, J., Chemat, F.
Batch and continuous ultrasound assisted extraction of boldo leaves (Peumus boldus Mol.) (Open Access)

(2013) *International Journal of Molecular Sciences*, 14 (3), pp. 5750-5764. Cited 33 times.
http://www.mdpi.com/1422-0067/14/3/5750/pdf
doi: 10.3390/ijms14035750

View at Publisher

30 Xu, D.-P., Zhou, Y., Zheng, J., Li, S., Li, A.-N., Li, H.-B.
Optimization of ultrasound-assisted extraction of natural antioxidants from the flower of jatropha integerrima by response surface methodology (Open Access)

(2016) *Molecules*, 21 (1), art. no. 21010018. Cited 25 times.
http://www.mdpi.com/1420-3049/21/1/18/pdf
doi: 10.3390/molecules21010018

View at Publisher

31 Aishah, B., Nursabrina, M., Noriham, A., Norizzah, A.R., Mohamad Shahrimi, H.
Anthocyanins from Hibiscus sabdariffa, melastoma Malabathricum and Ipomoea batatas and its color properties

(2013) *International Food Research Journal*, 20 (2), pp. 827-834. Cited 22 times.
http://www.ifrj.upm.edu.my/20%20(02)%202013/45%20IFRJ%2020%20(02)%202013%20Aishah%20(223).pdf

32 Prietto, L., Pinto, V.Z., El Halal, S.L.M., de Morais, M.G., Costa, J.A.V., Lim, L.-T., Dias, A.R.G., (...), Zavareze, E.D.R.
Ultrafine fibers of zein and anthocyanins as natural pH indicator

(2018) *Journal of the Science of Food and Agriculture*, 98 (7), pp. 2735-2741. Cited 19 times.
http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0010
doi: 10.1002/jsfa.8769

View at Publisher

33 Olawale, A.S.
Solid-liquid extraction of sorrel calyces with ethanol

(2013) *Agricultural Engineering International: CIGR Journal*, 15 (4), pp. 253-257. Cited 3 times.
http://www.cigrjournal.org/index.php/Ejounral/article/viewFile/2577/1813

34 Alupului, A., Calinescu, I., Lavric, V.
(2009) *AIDIC Conf. Ser.*, (8), p. 9.

35 Martynenko, A., Chen, Y.
Degradation kinetics of total anthocyanins and formation of polymeric color in blueberry hydrothermodynamic (HTD) processing

(2016) *Journal of Food Engineering*, 171, pp. 44-51. Cited 51 times.
http://sciencedirect.proxy.undip.ac.id:2048/science/journal/02608774
doi: 10.1016/j.jfoodeng.2015.10.008

View at Publisher

36 Buckow, R., Kastell, A., Terefe, N.S., Versteeg, C.
Pressure and temperature effects on degradation kinetics and storage stability of total anthocyanins in blueberry juice

(2010) *Journal of Agricultural and Food Chemistry*, 58 (18), pp. 10076-10084. Cited 92 times.
doi: 10.1021/jf1015347

View at Publisher

37 Qu, W., Pan, Z., Ma, H.
Extraction modeling and activities of antioxidants from pomegranate marc

(2010) *Journal of Food Engineering*, 99 (1), pp. 16-23. Cited 222 times.
doi: 10.1016/j.jfoodeng.2010.01.020

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38 González-Centeno, M.R., Comas-Serra, F., Femenia, A., Rosselló, C., Simal, S.
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(2015) *Ultrasonics Sonochemistry*, 22, pp. 506-514. Cited 106 times.
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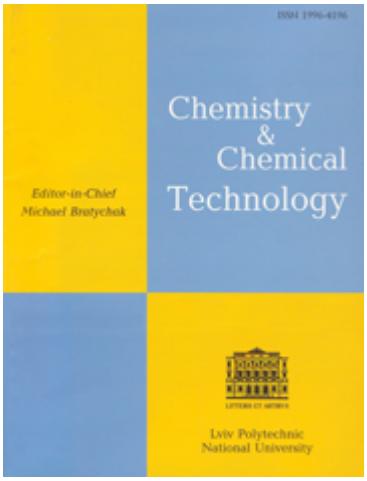
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Experimental and Theoretical Spectroscopic Study of Thione-Thiol Tautomerism of New Hybrides 1,3,4-Oxadiazole-2-thion with Acridine-9(10H)-one

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Keywords: acridine-9(10H)-one 1 3 4-oxadiazole 4-oxadiazole-2-thione UV-spectroscopy molecular orbitals quantum-chemical calculations

Abstract:
The synthesis of new hybrids 1,3,4-oxadiazol-2-thione with acridine 9(10H)-one is carried out. Their structure is confirmed by LC-MS, IR-, 1H and 13C NMR-spectroscopy. The thione-thiol equilibrium was investigated in eight solvents with different relative permittivity with the help of UV-spectroscopy and quantum chemistry methods using DFT/B3LYP and HF bases. The results of the experimental calculations are in agreement with theoretical ones and have shown the prevalence of the thione. There were established centers for reactions with the mechanism SE and AE, taking into account the electronic structural formulas and the results of calculating the atom charges of compounds.

References:

[1] Svoboda G., Poore G., Simpson P., Boder G.: J. Pharm. Sci., 1966, 55, 758. https://doi.org/10.1002/jps.2600550803
[2] Shoji A., Hasegawa T., Kuwahara M. et al.: Bioorg. Med. Chem. Lett., 2007, 17, 776. https://doi.org/10.1016/j.bmcl.2006.10.072
[3] Sondhi S., Singh J., Rani R. et al.: Eur. J. Med. Chem., 2010, 45, 555. https://doi.org/10.1016/j.ejmech.2009.10.042
[4] Karpenko Y., Omelyanchik L.: J. Org. Pharm. Chem., 2017, 15, 21. https://doi.org/10.24959/ophcj.17.917
[5] Omel'yanchik L.: Sintez, svoistva i biologicheskaya aktivnost' N- i S-zameshhennykh akridina, khinolina, piridina. Doctoral thesis, Moskva 1991.
[6] Mayer J.: Acc. Chem. Res., 2011, 44, 36. https://doi.org/10.1080/1047840X.2011.544635
[7] Maupin C., Castillo N., Taraphder S. et al.: J. Am. Chem. Soc., 2011, 133, 6223. https://doi.org/10.1021/ja1097594
[8] Zhang M.-T., Irebo T., Johansson O., Hammarström L.: J. Am. Chem. Soc., 2011, 133, 13224. https://doi.org/10.1021/ja203483j
[9] Weinberg D., Gagliardi C., Hull J. et al.: Chem. Rev., 2012, 112, 4016. https://doi.org/10.1021/cr200177j
[10] Sobolewski A., Domcke W.: Chem. Phys., 2003, 294, 73. https://doi.org/10.1016/S0301-0104(03)00388-4
[11] Schultz T., Samoylova E., Radloff W. et al.: Science, 2004, 306, 1765. https://doi.org/10.1126/science.1104038
[12] Bach A., Tanner C., Manca C. et al.: J. Chem. Phys., 2003, 119, 5933. https://doi.org/10.1063/1.1603740
[13] Meuwly M., Bach A., Leutwyler S.: J. Am. Chem. Soc., 2001, 123, 11446. https://doi.org/10.1021/ja010893a
[14] Casadesús R., Moreno M., Lluch J.: Chem. Phys., 2003, 290, 319. https://doi.org/10.1016/S0301-0104(03)00173-3
[15] Lima M., Coutinho K., Canuto S., Rocha W.: J. Phys. Chem. A, 2006, 110, 7253. https://doi.org/10.1021/jp060821b
[16] Siwek A., Wujec M., Wawrzycka-Gorczyca I. et al.: Heteroat. Chem., 2008, 19, 337. https://doi.org/10.1002/hc.20433
[17] Holla B., Shivanda M., Akberali P. et al.: Il Farmaco, 1996, 51, 785.
[18] Shouji E., Buttry D.: J. Phys. Chem. B, 1998, 102, 1444. https://doi.org/10.1021/jp972825+
[19] Katritzky A., Wang Z., Offerman R.: J. Heterocycl. Chem., 1990, 27, 139. https://doi.org/10.1002/jhet.5570270204
[20] Katritzky A., Borowiecka J., Fan W., Brannigan L.: J. Heterocycl. Chem., 1991, 28, 1139. https://doi.org/10.1002/jhet.5570280451
[21] Raper E.: Coord. Chem. Rev., 1996, 153, 199. https://doi.org/10.1016/0010-8545(95)01233-8
[22] Raper E.: Coord. Chem. Rev., 1997, 165, 475. https://doi.org/10.1016/S0010-8545(97)90167-3
[23] Koparır M., Çetin A., Cansız A.: Molecules, 2010, 10, 475. https://doi.org/10.3390/10020475
[24] Charistos D., Vagenas G., Tzavellas L. et al.: J. Heterocycl. Chem., 1994, 31, 1593. https://doi.org/10.1002/jhet.5570310653
[25] Tsoleridis C., Charistos D., Vagenas G.: J. Heterocycl. Chem., 1997, 34, 1715. https://doi.org/10.1002/jhet.5570340612

[26] Aydogan F., Turgut Z., Öcal N., Erdem S.: Turk. J. Chem., 2002, 26, 159.
[27] Arthur E., Weissberger J.: Technique of Organic Chemistry. Interscience, New York 1971.
[28] Sysoev P.: Sintez heterocyclicheskykh soedinenij na osnove proizvodnykh acridonacetilovykh kyslot: PhD thesis, Moskva 2015.
[29] Majumdar P., Pati A., Patra M. et al.: Chem. Rev., 2014, 114, 2942. https://doi.org/10.1021/cr300122t
[30] Oliveira C., Lira B., Barbosa-Filho J. et al.: Molecules, 2012, 17, 10192. https://doi.org/10.3390/molecules170910192
[31] Fröhlichová Z., Tomaščiková J., Imrich I. et al.: Heterocycles, 2009, 77, 1019. https://doi.org/10.3987/COM-08-S(F)80
[32] Barton D., Ollis U.: Obshhaya Organicheskaya Khimiya. Tom 8. Azotsoderzhashhie geterotsikly. Khimiya, Moskva 1985.
[33] Bedlovičová Z., Imrich J., Kristian P. et al.: Heterocycles, 2010, 80, 1047. https://doi.org/10.3987/COM-09-S(S)83
[34] Zou X., Lai L., Jin G.: J. Agr. Food Chem., 2002, 50, 3757. https://doi.org/10.1021/jf0201677
[35] Salimon J., Salih N., Yousif E.: Arab. J. Chem., 2010, 3, 205. https://doi.org/10.1016/j.arabjc.2010.06.001
[36] Frisch Æ.: Gaussian 09W Reference, Gaussian, Inc., Wallingford, CT, 2009.
[37] Gaussian 09, Revision A.02, M. J. Frisch, G. W. Trucks, H. B. Schlegel, G. E. Scuseria, M. A. Robb, J. R. Cheeseman, G. Scalmani, V. Barone, G. A. Petersson, H. Nakatsuji, X. Li, M. Caricato, A. Marenich, J. Bloino, B. G. Janesko, R. Gomperts, B. Mennucci, H. P. Hratchian, J. V. Ortiz, A. F. Izmaylov, J. L. Sonnenberg, D. Williams-Young, F. Ding, F. Lipparini, F. Egidi, J. Goings, B. Peng, A. Petrone, T. Henderson, D. Ranasinghe, V. G. Zakrzewski, J. Gao, N. Rega, G. Zheng, W. Liang, M. Hada, M. Ehara, K. Toyota, R. Fukuda, J. Hasegawa, M. Ishida, T. Nakajima, Y. Honda, O. Kitao, H. Nakai, T. Vreven, K. Throssell, J. A. Montgomery, Jr., J. E. Peralta, F. Ogliaro, M. Bearpark, J. J. Heyd, E. Brothers, K. N. Kudin, V. N. Staroverov, T. Keith, R. Kobayashi, J. Normand, K. Raghavachari, A. Rendell, J. C. Burant, S. S. Iyengar, J. Tomasi, M. Cossi, J. M. Millam, M. Klene, C. Adamo, R. Cammi, J. W. Ochterski, R. L. Martin, K. Morokuma, O. Farkas, J. B. Foresman, and D. J. Fox, Gaussian, Inc., Wallingford CT, 2016.
[38] Tirado-Rives J., Jorgensen W.: J. Chem. Theory Comput., 2008, 4, 297. https://doi.org/10.1021/ct700248k
[39] Rassolov V., Ratner M., Pople J. et al.: J. Comp. Chem., 2001, 22, 976. https://doi.org/10.1002/jcc.1058
[40] Caricato M.: J. Chem. Theory Comput., 2012, 8, 5081. https://doi.org/10.1021/ct300382a
[41] Pyykko P., Laaksonen L.: J. Phys. Chem., 1984, 88, 4892. https://doi.org/10.1021/j150665a017
[42] Meison S.: Elektronnye Spektry Pogloshheniya Heterotsiklicheskikh Soedinenij. Khimiya, Moskva 1966.
[43] Zhirov N.: Lyuminofory. Svetyashhiesya Tverdye Sostavy. Gos. izd-vo oboron. prom., Moskva 1940.
[44] http://webbook.nist.gov/cgi/cbook.cgi?ID=C578950&Mask=400#UV-Vis-Spec
[45] Antsyferov Y.: Dielektrycheskye svoistva vodnykh rastorov soley shchelochnykh metalov, halohennoodorodnykh kyslot i shchelochei. PhD thesis, Irkutsk 2006.
[46] Amalanathan M., Rastogi V., Joe I. et al.: Spectrochim Acta A, 2011, 78, 1437. https://doi.org/10.1016/j.saa.2011.01.023
[47] Padmaja L., Ravi Kumar C., Sajan D. et al.: J. Raman Spect., 2009, 40, 419. https://doi.org/10.1002/jrs.2145
[48] Sagdinc S., Pir H.: Spectrochim. Acta A, 2009, 73, 181. https://doi.org/10.1016/j.saa.2009.02.022

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Dielectric Behavior of SBS/Polyaniline Thermally Processable Blends

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Keywords: SBS polyaniline melt blending dielectric behavior

Abstract:
Styrene–butadiene–styrene triblock copolymer (SBS) blends were prepared using different weight ratios of conducting polyaniline (PANI). Several electrical properties such as volume resistivity, dielectric constant, dissipation factor and alternating current conductivity of the blends were studied pointing to understand the influence of different parameters like PANI concentration, frequency, and temperature on these properties. The prepared materials present a slight reduction in volume resistivity as a function of temperature, being useful in conditions where the temperature control is hard. More than this, dielectric constant tests allowed inferring that among tested samples, the one filled with 45 wt % of PANI is potentially able to be used in the electromagnetic dissipation field. Finally, the alternating current tests allowed to prove that the electrical conduction of the blend is mainly dominated by ionic transportation. Therefore, prepared materials can be considered as a strategic, low-cost, environmentally friendly material which can be used in various border fields.

References:

[1] Melad O., Jarur M.: Chem. Chem. Technol., 2016, 10, 41. https://doi.org/10.23939/chcht10.01.041
[2] Yatsyshyn M., Makogon V., Reshetnyak O. et al.: Chem. Chem. Technol., 2016, 10, 429. https://doi.org/10.23939/chcht10.04.429
[3] Thorat S., Kulkarni M., Thorat G.: Chem. Chem. Technol., 2015, 9, 143. https://doi.org/10.23939/chcht09.02.143
[4] Souza Jr F., da Silva A., de Oliveira G. et al.: Ind. Crops Prod., 2015, 68, 97. https://doi.org/10.1016/j.indcrop.2014.09.032
[5] Souza Jr F., Soares B., Mantovani G. et al.: Polymer, 2006, 47, 2163. https://doi.org/10.1016/j.polymer.2006.01.033
[6] Souza Jr F., Soares B., Siddaramaiah et al.: Mater. Sci. Eng. A, 2008, 476, 240. https://doi.org/10.1016/j.msea.2007.05.099
[7] Liao C., Zhang M., Yao M. et al.: Adv Mater., 2015, 27, 7493. https://doi.org/10.1002/adma.201402625
[8] Mokhtari F., Salehi M., Zamani F. et al.: Text. Prog., 2016, 48, 119. https://doi.org/10.1080/00405167.2016.1201934
[9] Souza Jr F., Pinto J., Soares B.: Eur. Polym. J., 2007, 43, 2007. https://doi.org/10.1016/j.eurpolymj.2007.02.037
[10] Kumar V., Yokozeki T., Goto T., Takahashi T.: Polymer, 2016, 86, 129. https://doi.org/10.1016/j.polymer.2016.01.054
[11] Ferreira S., da Silva A., Souza Jr. F. et al.: J. Biobased Mater. Bioenerg., 2014, 8, 578. https://doi.org/10.1166/jbmb.2014.1478
[12] Souza Jr F., Soares B., Dahmouche K.: J. Polym. Sci. B, 2007, 45, 3069. https://doi.org/10.1002/polb.21305
[13] Khatoon H., Ahmad S.: J. Ind. Eng. Chem., 2017, 53, 1. https://doi.org/10.1016/j.jiec.2017.03.036
[14] Malti A., Tu D., Edberg J. et al.: Org. Electron., 2017, 50, 304. https://doi.org/10.1016/j.orgel.2017.07.043
[15] Stejskal J., Bober P., Trchová M. et al.: Synthetic Met., 2017, 224, 109. https://doi.org/10.1016/j.synthmet.2016.12.029
[16] Mehra N., Mu L., Ji T. et al.: Compos. Sci. Technol., 2017, 151, 115. https://doi.org/10.1016/j.compscitech.2017.08.010
[17] Souza Jr F., Michel R., Soares B.: Polym. Test., 2005, 24, 998. https://doi.org/10.1016/j.polymertesting.2005.08.001
[18] Qi S., Craig D.: Adv. Drug. Deliv. Rev., 2016, 100, 67. https://doi.org/10.1016/j.addr.2016.01.003
[19] Murariu M., Dubois P.: Adv. Drug. Deliv. Rev., 2016, 107, 17. https://doi.org/10.1016/j.addr.2016.04.003
[20] Rafique I., Kausar A., Anwar Z., Muhammad B.: Polym. Plast. Technol. Eng., 2016, 55, 312. https://doi.org/10.1080/03602559.2015.1070874
[21] Aïssa B., Habib M., Abdul-Hafidh E. et al.: Int. J. Mater. Eng. Innovat., 2015, 6, 185. https://doi.org/10.1504/IJMATEI.2015.072207
[22] Sousa A., Vilela C., Fonseca A. et al.: Polym. Chem., 2015, 6, 5961. https://doi.org/10.1039/C5PY00686D
[23] Drakopoulos S., Karger-Kocsis J., Kmetty Á. et al.: Carbohydr. Polym., 2017, 157, 711. https://doi.org/10.1016/j.carbpol.2016.10.036

[24] Saba N., Paridah M., Jawaid M.: Constr. Build. Mater., 2015, 76, 87. https://doi.org/10.1016/j.conbuildmat.2014.11.043
[25] Das A., Sallat A., Böhme F. et al.: ACS Appl. Mater. Interface., 2015, 7, 20623. https://doi.org/10.1021/acsami.5b05041
[26] Imbernon L., Oikonomou E., Norvez S., Leibler L.: Polym. Chem., 2015, 6, 4271. https://doi.org/10.1039/C5PY00459D
[27] Yu B-C., Jung J-W., Park K., Goodenough J.: Energ. Environ. Sci., 2017, 10, 86. https://doi.org/10.1039/C6EE02770A
[28] Hamsan M., Shukur M., Kadir M.: Ionics, 2017, 23; 3429. https://doi.org/10.1007/s11581-017-2155-1
[29] Zeglio E., Schmidt M., Thelakkat M. et al.: Chem. Mater., 2017, 29, 4293. https://doi.org/10.1021/acs.chemmater.7b00474
[30] Suriani A., Nurhafizah M., Mohamed A. et al.: J. Mater. Sci., 2017, 52, 6611. https://doi.org/10.1007/s10853-017-0897-9
[31] George N., Bipinbal P., Bhadran B. et al.: Polymer, 2017, 112, 264. https://doi.org/10.1016/j.polymer.2017.01.082
[32] Li L., Zhao P., Luo Y. et al.: RSC Adv., 2017, 7, 1093. https://doi.org/10.1039/C6RA26155H
[33] Kim H., Ahn K., Lee S.: Polymer, 2017, 110, 187. https://doi.org/10.1016/j.polymer.2017.01.007
[34] García-Uriostegui L., Pineda-Torres G., López-Ramírez S. et al.: Polym. Eng. Sci., 2017, 57, 1214. https://doi.org/10.1002/pen.24499
[35] Yin Q., Wen Y., Jia H. et al.: J. Mater. Sci., 2017, 52, 10814. https://doi.org/10.1007/s10853-017-1251-y
[36] Qi X., Xiu H., Wei Y. et al.: Compos. Sci. Technol., 2017, 139, 8. https://doi.org/10.1016/j.compscitech.2016.12.007
[37] Perrin F., Oueiny C.: React. Funct. Polym., 2017, 114, 86. https://doi.org/10.1016/j.reactfunctpolym.2017.03.009
[38] Souza Jr F., Pinto J., de Oliveira G., Soares B.: Polym. Test., 2007, 26, 720. https://doi.org/10.1016/j.polymertesting.2007.03.004
[39] Souza Jr F., Soares B., Siddaramaiah et al.: Polymer, 2006, 47, 7548. https://doi.org/10.1016/j.polymer.2006.08.026
[40] Souza Jr F., Soares B.: Polym. Test., 2006, 25, 512. https://doi.org/10.1016/j.polymertesting.2006.01.014
[41] Souza Jr F., Soares B., Pinto J.: Macromol. Mater. Eng., 2006, 291, 463. https://doi.org/10.1002/mame.200500406
[42] Souza Jr F., Sirelli L., Michel R. et al.: J. Appl. Polym. Sci., 2006, 102, 535. https://doi.org/10.1002/app.24280
[43] Grove T., Masters M., Miers R.: Am. J. Phys., 2005, 73, 52. https://doi.org/10.1119/1.1794757
[44] Souza Jr F., Oliveira G., Anzai T. et al.: Macromol. Mater. Eng., 2009, 294, 739. https://doi.org/10.1002/mame.200900111
[45] Bohren C.: Am. J. Phys., 2017, 85, 165. https://doi.org/10.1119/1.4975385
[46] Xiang T., Zheng Q., Qin S.: IEEE Trans. Dielectr. Electr. Insul., 2017, 24, 1197. https://doi.org/10.1109/TDEI.2017.005956
[47] Matsouka D., Vassiliadis S., Mitilineos S. et al.: J. Text Inst., 2017, 109, 1. https://doi.org/10.1080/00405000.2017.1330174
[48] Luo X., Wang J., Dooner M., Clarke J.: Appl. Energ., 2015, 137, 511. https://doi.org/10.1016/j.apenergy.2014.09.081
[49] Bhavani G., Ganesan S., Selvasekarapandian S. et al.: Ionics, 2016, 22, 581. https://doi.org/10.1007/s11581-015-1565-1
[50] Baskey H., Johari E., Akhtar M.: IEEE Trans. Electromagn. Compat., 2017, 59, 1060. https://doi.org/10.1109/TEMC.2016.2639060
[51] Abdalla M.: Prog. Electromagn. Res. Lett., 2013, 39, 63. https://doi.org/10.2528/PIERL13022207
[52] Wang Y., Chen Y., Zhou Y., Fu H.: DEStech. Trans. Comput. Sci. Eng., 2016. https://doi.org/10.12783/dtcse/iceiti2016/6153
[53] Bhadra S., Singha N., Khastgir D.: Curr. Appl. Phys., 2009, 9, 396. https://doi.org/10.1016/j.cap.2008.03.009
[54] Samet M., Levchenko V., Boiteux G. et al.: J. Chem. Phys., 2015, 142, 194703. https://doi.org/10.1063/1.4919877
[55] Yousefi N., Sun X., Lin X. et al.: Adv. Mater., 2014, 26, 5480. https://doi.org/10.1002/adma.201305293
[56] Rogti F., Ferhat M.: J. Electrost., 2014, 72, 91. https://doi.org/10.1016/j.elstat.2013.11.012
[57] Yu X., Yi B., Liu F., Wang X.: React. Funct. Polym., 2008, 68, 1557. https://doi.org/10.1016/j.reactfunctpolym.2008.08.009
[58] Chaloupka A., Wedel A., Taha I. et al.:alysis. Mater. Sci. Forum., 2015, 825-826, 944.
https://doi.org/10.4028/www.scientific.net/MSF.825-826.944
[59] Saba N., Jawaid M., Alothman O., Paridah M.: Constr. Build. Mater., 2016, 106, 149.
https://doi.org/10.1016/j.conbuildmat.2015.12.075
[60] Shukla N., Thakur A., Shukla A., Marx D.: Int. J. Electrochem. Sci., 2014, 9, 7644.
[61] Amin A., Ahmed E., Sabaa M. et al.: Polym Bull., 2016, 73, 147. https://doi.org/10.1007/s00289-015-1477-2

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Comparative Study of Moringa Oleifera and Citrus Paradisi as Disinfectants and Coagulants for Water Treatment

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Keywords: Moringa oleifera Citrus paradisi water treatment turbidity disinfection coagulation

Abstract:
The coagulant and disinfectant qualities of Moringa oleifera and Citrus paradisi were investigated on various water samples acquired from sachet water (packaged water), borehole water, river water and well water. The results revealed that Moringa oleifera functioned adequately at settling time beyond 2 h in highly turbid river water but was more effective when combined with Citrus paradisi. Moringa oleifera or its combination with Citrus paradisi is less effective for turbid water treatment but effective for river water (sample) purification. The number of total Coliforms and Escherichia coli reduced with the increasing treatment time.

References:

[1] Rijsberman F.: Agr. Water Manage., 2006, 80, 5. https://doi.org/10.1016/j.agwat.2005.07.001
[2] John-Dewole O.: Greener J. Med. Sci., 2012, 2, 115.
[3] Ishaku H., Majid M., Ajayi A., Haruna A.: J. Water Res. Protect., 2011, 3, 598. https://doi.org/10.4236/jwarp.2011.38069
[4] Lei C., Lou I., Song H., Sun P.: Desalin. Water Treat., 2012, 45, 215. https://doi.org/10.1080/19443994.2012.692060
[5] Yongabi K., Lewis D., Harris P.: African J. Biotechnol., 2011, 10, 8625. https://doi.org/10.5897/AJB10.1709
[6] Lou I., Gong S., Huang X., Liu Y.: Desalin. Water Treat., 2012, 46, 107. https://doi.org/10.1080/19443994.2012.677529
[7] Sadiq R., Rodriguez M.: J. Environ. Manage., 2004, 73, 1. https://doi.org/10.1016/j.jenvman.2004.04.014
[8] Ndabigengesere A., Narasiah K., Talbot B.: Water Res., 1995, 29, 703. https://doi.org/10.1016/0043-1354(94)00161-Y
[9] Zorpas A., Voukalli I., Loizia P.: Desalin. Water Treat., 2012, 45, 291. https://doi.org/10.1080/19443994.2012.692043
[10] Yongabi K., Lewis D., Harris P.: J. Environ. Sci. Eng., 2011, 5, 1100.
[11] Crapper D., Krishnan S., Dalton A.: Science, 1973, 180, 511. https://doi.org/10.1126/science.180.4085.511
[12] Hoff J.: [in]: EPA-570/9-78-OOC. US Environmental Protection Agency. 1978: Washington DC, USA. 103.
[13] Mallevialle J., Bruchet A., Fiessinger F.: J. Am. Water Works Assoc., 1984, 76, 87. https://doi.org/10.1002/j.1551-8833.1984.tb05354.x
[14] Muyibi S., Alfugara A.: Int. J. Environ. Stud., 2003, 60, 617. https://doi.org/10.1080/723032000087925
[15] Vesley D.: Human Health and the Environment: A Turn-of-the-century Perspective: Springer Science & Business Media, 2013.
[16] Muyibi S.: Nigerian Soc. Eng., 1994, 29, 27.
[17] Muyibi S.: PhD. thesis, Factors affecting coagulation of turbid water and softening hard water with Moringa oleifera seeds extracts, University of Newcastle upon Tyne, 1995.
[18] Muyibi S., Okuofu C.: International Journal of Environmental Studies, 1995, 48(3-4 Sect.A), 263-273. https://doi.org/10.1080/00207239508710996
[19] Birima A., Muyibi S., Mohammed T. et al.: IWA Conf., on Environmental Biotechnology/Advancement on Water and Wastewater Applications in the Tropics, Kuala Lumpur, Malaysia 2003, 32.
[20] Muyibi S., Mohammed A., Mohammed T., Noor M.: Int. Conf. on Chemical and Bioprocess Engineering. University Malaysia Sabah, Kota Kinabalu, Malaysia 2003, 8.
[21] Birima A., Muyibi S., Mohammed T. et al.: IWA Conference on Environmental Biotechnology: Advancement on Water and Waste water

Applications in the Tropics: Kuala Lumpur, Malaysia 2003, 32.
[22] Miller R., Kopfler F., Kelty K. et al.: J. Am. Water Works Ass., 1984, 76, 84. https://doi.org/10.1002/j.1551-8833.1984.tb05267.x
[23] Ali E., Muyibi S., Salleh H. et al.: Proceed. 14th Int. Water Conf., IWTC 2010, Cairo, Egypt 2010, 95.
[24] Ramalho J., Ramos N., Lucas E.: Chem. Chem. Technol., 2009, 3, 53.
[25] Brostow W., Hagg Lobland H., Pal S., Singh R.: J. Mat. Educ., 2009, 31, 157.
[26] Šćiban M., Vasić M., Prodanović J. et al.: Acta Periodica Technologica, 2010, 41, 141. https://doi.org/10.2298/APT1041141S
[27] Nayeripour M., Kheshti M.: Sustainable Growth and Applications in Renewable Energy Sources. Energy Engineering InTechOpen. http://www.intechopen.com/books/show/title/sustainable-growth-and-applic….
[28] Gassenschmidt U., Jany K., Tauscher B., Niebergall H.: BBA-Gen. Subjects, 1995, 1243, 477. https://doi.org/10.1016/0304-4165(94)00176-X
[29] Vijay Kumar K., Rubha M., Manivasagan M. et al.: Universal J. Environ. Res. Technol., 2012, 2, 203.
[30] Nyakuma B.: Environ. Climate Technol., 2015, 15, 77. https://doi.org/10.1515/rtuect-2015-0007
[31] Abdulkareem A., Uthman H., Afolabi A., Awenebe O.: [in]: Sustainable Growth and Applications in Renewable Energy Sources, 2011, InTech. https://doi.org/10.5772/25855
[32] Ivase T., Bobbo H., Tagago T., Nyakuma D.: J. Multidisciplinary Eng. Sci. Technol., 2015, 2, 3574.
[33] Ndabigengesere A., Narasiah K.: Water Res., 1998, 32, 781. https://doi.org/10.1016/S0043-1354(97)00295-9
[34] Robinson R.: Encyclopedia of Food Microbiology. Academic Press, NY 2014.
[35] Bridson E.: The Oxoid Manual, 8th edn. Oxoid Ltd., Hamshire 1998.
[36] Sartory D.: Water Sa, 1980, 6, 113.
[37] Rychert R., Stephenson G.: Appl. Environ. Microbiol., 1981, 41, 1276.
[38] Pagel J., Qureshi A., Young D., Vlassoff L.: Appl. Environ. Microbiol., 1982, 43, 787.
[39] Shin S., Shardt O., Warren P., Stone H.: Nat. Commun., 2017, 8, 15181. https://doi.org/10.1038/ncomms15181
[40] Agatemor C., Okolo P.: Environmentalist, 2007, 27, 227. https://doi.org/10.1007/s10669-007-9000-4
[41] Gippel C.: Hydrol. Process., 1995, 9, 83. https://doi.org/10.1002/hyp.3360090108
[42] https://www.lenntech.com/Data-sheets/index.pdf
[43] Guidelines for Drinking-Water Quality, 4th edn. World Health Organization 2011, http://www.who.int/about/licensing/copyright_form/en/index.html
[44] WHO's Drinking Water Standards. World Health Organization, Geneva 1993. http://www.who.int/water_sanitation_health/dwq/2edvol1i.pdf
[45] Muyibi S., Evison L.: Water Res., 1995, 29, 1099. https://doi.org/10.1016/0043-1354(94)00250-B