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

Judul Jurnal Ilmiah (Artikel)	:	Optimization of Eugenol Extraction from Clove Oil using Response Surface Methodology		
Jumlah Penulis	:	4 orang (Widayat, Hadiyanto, **Bambang Cahyono**, Ngadiwiyana)		
Status Pengusul	:	penulis ke-3		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	Modern Applied Science (MAS)
		b. Nomor ISSN	:	Issn(P): 1913-1844, Issn(O): 1913-1852
		c. Vol, No., Bln Thn	:	Vol. 9, No. 11 (2015)
		d. Penerbit	:	Published by Canadian Center of Science and Education
		e. DOI artikel (jika ada)	:	-
		f. Alamat web jurnal	:	http://www.ccsenet.org/journal/index.php/mas/article/view/53732
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Total = (100%)	**13,00**	**11,50**	**12,15**
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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

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2. **Ruang lingkup dan kedalaman pembahasan:**
   Hipotesis sudah jelas di Introduction, hasil-hasil penelitian cukup banyak (3 halaman), tetapi Pembahasan sangat minim sekali (3 paragraf).

3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
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Semarang,
Reviewer 1

Prof. Dr. Istadi, S.T., M.T.
NIP. 197103011997021001

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b. Ruang lingkup dan kedalaman pembahasan (30%)	6,00			3,50
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d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	6,00			3,00
Total = (100%)	**20,00**			**11,30**
Nilai Pengusul = (40% × 11,30)/3 = 1,51				

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2. **Ruang lingkup dan kedalaman pembahasan:** Isi artikel sesuai dengan ruang lingkup topik jurnal mengenai optimasi proses ekstraksi untuk meningkatkan rendemen minyak cengkeh menggunakan metode respons permukaan. Hasil percobaan ditampilkan cukup banyak dan baik, dibahas **tanpa** merujuk pustaka sama sekali. Akibatnya, artikel ini tidak menunjukkan kedalaman dan kontribusi ilmiah yang cukup memadai, juga kurang teliti dalam mengaitkan hasil percobaan dan analisis kimianya.
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:** Metode percobaan ditulis tanpa merujuk pada pustaka yang relevan. Data yang ditampilkan dalam artikel **tidak cukup** banyak untuk artikel dalam naskah artikel sebuah jurnal. Artikel ini menggunakan 14 pustaka dan 8 di antaranya tergolong mutakhir (57,14%).
4. **Kelengkapan unsur dan kualitas terbitan: Modern Applied Science** ini tergolong jurnal ilmiah yang terbit secara teratur. Editorial board jurnal berasal dari beberapa negara, terdapat pedoman penulisan yang jelas dan format penulisan cukup konsisten. Jurnal ini diterbitkan oleh **Canadian Center of Science and Education (CCSE)**. 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

Optimization of Eugenol Extraction from Clove Oil using Response Surface Methodology

B Cahyono - Modern Applied Science, 2015 - search.proquest.com

The objective of this research was to obtain optimum condition of eugenol production from clove oil using a central composite design method. The main process occured in the eugenol production was saphonification and neutralization processes. In order to optimize these processes, the ratio of NaOH/clove oil and temperature were studied as design variables ie ratio of NaOH/clove oil= 1: 2.5-1: 3.5 while temperature was varied between 40 and 60 C. The yield of eugenol was considered as the main response in of this experiment …

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Bio Phantoms Mimicking the Dielectric and Mechanical Properties of Human Skin Tissue at Low-Frequency Ranges

Dr. Anubha Kalra[1], Dr. Andrew Lowe[1] & Dr. Gautam Anand[1]

[1]Institute of Biomedical Technologies, Auckland University of Technology, Auckland, NZ

Correspondence: Dr. Anubha Kalra, Institute of Biomedical Technologies, Auckland University of Technology, Auckland, NZ

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Abstract

Tissue phantoms are widely used as substitute materials for real tissue validation of various newly emerging biomedical technologies such as ultrasound (US), computed tomography (CT), and magnetic resonance imaging (MRI). However, there is no specific recipe for fabricating skin-mimicking phantoms which can mimic both the mechanical and dielectric properties of human skin at lower frequency ranges.

The objective of this paper is to present a variety of tissue-mimicking materials for filling this research gap in the lower frequency range from 20 Hz to 300 kHz. The starting point of our experiments is based on the oil-in-gelatin based tissue-mimicking materials (TMMs) that have shown to mimic the dielectric properties of human skin in higher frequency ranges. This paper examines the mechanical and dielectric performance of five major classes of tissue-mimicking materials (1) Oil-in-gelatin, (2) lignin and graphene nanopowder in gelatin, (3) gelatin and distilled water, (4) mixed oil in gelatin and distilled water, and (5) lignin in gelatin and distilled water.

Mechanical and electrical testing was performed using compression testing and parallel plate method respectively. The effect of electrode polarization was considered in the measured data and the intrinsic impedance values were found to be following the Cole-Cole equation. The Young's modulus range of all tissue-mimicking materials was within the range of skin.

Keywords: Tissue Mimicking Materials (TMMs), gelatin, graphene nanopowder, lignin, Cole-Cole plot, dielectric constant, Young's modulus (YM)

1. Introduction

Tissue-mimicking (TM) phantoms are vivid models of real human tissue that exhibit realistic properties of tissues in certain areas (Porter et al., n.d.). As real human tissue samples are difficult to obtain and store (Bot et al., 2009) (Singh et al., 2016), tissue phantoms are making a significant contribution to the characterization of the new imaging technologies and medical training. Human skin is the heaviest and vastest organ of the human body, which performs critical functions to human health, especially in regulation and protection. The development of the skin phantoms will facilitate the development of biomedical applications and contribute to skin clinical research, particularly for cosmetic, dermatology, and detection of cutaneous pathology (Kalra et al., 2016)(Garrett et al., 2014)(Moll and Dennis, n.d.)(Sugihara et al., 1991) (Meaney et al., 2012).

Although the field of tissue-mimicking phantoms manufacturing is becoming more attractive and many researchers have achieved active explorations in it, there is no specific recipe for fabricating skin-mimicking phantoms that can properly match mechanical and electrical properties of human skin. The dielectric properties of most existing skin-mimicking phantoms were measured at high frequencies (normally over 500MHz) to satisfy the requirement of microwave imaging technology (Meaney et al., 2012) (Popovic et al., 2005). To date, less research has been done on phantoms mimicking human skin at low frequencies because of the error introduced due to the electrode-polarization effect.

However, this relatively blank research area has attracted more attention recently with the gradual clinical application of low-frequency technologies such as electrical impedance tomography (EIT) (Riu and Anton, 2010) (Ahn et al., 2010). The adjustable frequency of currently commercial devices of EIT for clinical use is below 150 kHz (Orschulik and Menden, 2017).

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Mathematical Model and Data Analysis to Determine the Number of Confirmed Infections Due to Covid-19 in Spain

Gastón Sanglier[1], Sonia Cesteros[1], Eduardo J. López[1] & Roberto A. Gónzález[1]

[1]Architecture and Design Department. Engineering Area, Escuela Politécnica Superior, Universidad CEU San Pablo, Montepríncipe Campus, 28668, Boadilla Del Monte, Madrid, Spain

Correspondence: Gastón Sanglier, Engineering Area. Escuela Politécnica Superior, Universidad CEU San Pablo, Montepríncipe Campus, 28668, Boadilla Del Monte, Madrid, Spain.

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Abstract

Covid-19 initially started in China, although cases of infection by this virus are currently being identified in Europe since January and February of this year camouflaged within a strong outbreak of influenza that had not been identified before. What is certain is that in about a hundred days it has spread around the world threatening humanity. There seems to be a great need to find a rapid response to the speed at which the virus is spreading. In this work, different mathematical models are studied to accurately determine the speed of propagation or infection of people infected by Covid-19 based on data collected from the evolution of the pandemic in Spain. Several mathematical models are proposed and analyzed, but the model proposed as the most suitable is a fourth degree polynomial regression adjustment that presents an R-square statistic of 99.72% which gives a great adjustment of the model for the calculation of the number of infected confirmed by this virus in Spain. Knowing these data is of vital importance to be able to take and undertake the most urgent health and social measures in an effective and orderly manner. This will have a great repercussion in being able to avoid a high number of possible infections.

Keywords: infection, epidemiology, virus, data analysis, mathematical models, Covid-19

1. Introduction

In 1927, biochemist William Ogilvy Kermack and epidemiologist Anderson Gray McKendrick (Kermack & McKendrich, 1932; Kermack & McKendrich, 1923), both Scottish, published a paper that is still used to model epidemics of infectious diseases. The problem they studied was and still is one of the leading causes of death worldwide.

Just think that the 1918 influenza pandemic, also known as the Spanish flu, killed between 50 and 100 million people, while the death toll from World War I in the previous four years was less than 20 million.

Kermack and McKendrick developed the so-called SIR model, where the population is divided into "S" for susceptible, "I" for infected and "R" for recovered. In the 'S' of susceptible are all the people who are not vaccinated - which in the case of covid-19 is the entire population - and who may become ill. In the 'I' of infected, whose curve must try not to rise above the health capacity of the country, because they are those who may require hospital care, and finally in the 'R' of recovered, which are those who neither infect nor can be infected, where the dead are always counted (Dahari et al., 2005; Dee & Shuler, 1997; Diekmann & Heesterbeek, 2000; Ellner et al.,1998). The sum of "S" plus "I" plus "R" is the total number of the population. However, these models also have their limitations. The simplest CRS models make basic assumptions, for example, that everyone has the same chance of getting the virus from an infected person because the population is perfectly mixed and that people with the disease are equally infectious until they die or recover. More advanced models subdivide people into smaller groups (by age, sex, health status, employment, number of contacts, etc.) to establish who meets whom, when and where (Brand, 1957; Brauer et al., 2008; Cadarso & González, 2007; Canini & Perelson, 2014; Cañas, García & Andérica, 2003; Checkoway, Pearce, Crawford, 1989; Chen & Bokka, 2005; Clapham et al.,2016; Haerdle, 1993; Lofgren, 1993; Schafter & Kot, 1985).

The latest data on people diagnosed with Covid-19 coronavirus by PCR in the world is 3,525,116 people, in Europe it is 1,554,703 people and in Spain it is 220,325. The number of people infected in Spain represents 6.25%