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

Judul Jurnal Ilmiah (Artikel) : Synthesis of colloidal silver nanoparticles in various liquid media using pulse laser ablation method and its antibacterial properties

Nama/ Jumlah Penulis : 3 Orang

Status Pengusul : ~~Penulis pertama~~/ Penulis ke 2 / ~~Penulis Korespondensi~~ **

Identitas Jurnal Ilmiah :

- a. Nama Jurnal : Indonesian Journal of Chemistry
- b. Nomor ISSN : 1411-9420
- c. Vol, No., Bln Thn : Vol 21, No 3, Januari 2021, Hal 761-768
- d. Penerbit : Gadjah Mada University
- e. DOI artikel (jika ada) : <https://doi.org/10.22146/ijc.60344>
- f. Alamat web jurnal : <https://jurnal.ugm.ac.id/ijc/article/view/60344>
- g. Alamat Artikel : <https://jurnal.ugm.ac.id/ijc/article/view/60344/30789>
- Terindex : Scopus (Q3, SJR 0,26)

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d. Kelengkapan unsur dan kualitas penerbit (30%)	11,50	11,70	11,60
Total = (100%)			38,35
Nilai untuk Pengusul : $(40\% \times 38,35) / 2 = 7,67$			

Semarang, 15 Mei 2023

Reviewer 1



Prof. Dr. Agus Subagio, S.Si., M.Si.
 NIP. 19710813 1995121001
 Unit Kerja: FSM Universitas Diponegoro
 Bidang Ilmu: Fisika

Reviewer 2



Dr. Eng. Eko Hidayanto
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d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12			11,5
Total = (100%)	40			38
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- Kesesuaian dan kelengkapan unsur isi jurnal:**
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- Ruang lingkup dan kedalaman pembahasan:**
Artikel ini membahas sintesis nanopartikel perak (AgNPs) menggunakan metode sintesis ablasi laser pulsa menggunakan laser Nd: YAG dalam berbagai medium. Medium PVP memberikan hasil nanopartikel yang memiliki stabilitas yang baik. AgNPs yang dihasilkan efektif sebagai agen antibakteri terhadap *Escherichia coli* dan *Staphylococcus aureus*, dengan persentase pembunuhan sebesar 99,6 hingga 100%. Paper ini juga dilengkapi dengan referensi pada bagian pembahasan untuk menguatkan diskusi.
- Kecukupan dan kemutakhiran data/informasi dan metodologi:**
Metode yang digunakan standar menggunakan metode sintesis ablasi laser pulsa dengan data yang disajikan mudah dipahami dan informatif secara visual sehingga sangat baik dan mendukung hasil penelitian. Referensi yang digunakan juga cukup baik.
- Kelengkapan unsur dan kualitas terbitan:**
Artikel ini dipublikasikan di jurnal internasional bereputasi Q3 dengan SJR 0,26. Artikel tersebut memiliki unsur-unsur yang lengkap dan memiliki kualitas internasional serta isi jurnal sudah cukup lengkap dan kualitas penerbitan yang baik.

Semarang, 15 Mei 2023

Reviewer 1



Prof. Dr. Agus Subagio, S.Si., M.Si.

NIP. 19710813 1995121001

Unit Kerja : Fisika

Bidang Ilmu: Fakultas Sains dan Matematika

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a. Kelengkapan unsur isi jurnal (10%)	4			3,7
b. Ruang lingkup dan kedalaman pembahasan (30%)	12			11,6
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	12			11,7
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12			11,7
Total = (100%)	40			38,7
Nilai Pengusul = (40% x 38,7) / 2 = 7,74				

Catatan Penilaian artikel oleh Reviewer :

1. Kesesuaian dan kelengkapan unsur isi jurnal:

Isi dalam artikel sesuai, akurat dan komprehensif dengan semua unsur yang terdapat di dalamnya, seperti abstrak, pendahuluan, prosedur eksperimen, hasil dan pembahasan, kesimpulan, dan daftar pustaka.

2. Ruang lingkup dan kedalaman pembahasan:

Artikel ini berfokus pada sintesis nanopartikel perak (AgNPs) sebagai agen antibakteri dalam berbagai produk, kosmetik, dan industri makanan. AgNPs disintesis menggunakan metode sintesis ablasi laser pulsa menggunakan laser Nd: YAG dalam berbagai medium. Medium PVP memberikan hasil nanopartikel yang memiliki stabilitas yang baik. AgNPs yang dihasilkan efektif sebagai agen antibakteri terhadap *Escherichia coli* dan *Staphylococcus aureus*, dengan persentase pembunuhan sebesar 99,6 hingga 100%.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

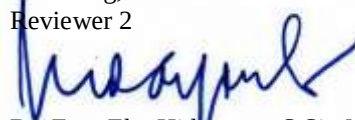
Metode eksperimen disajikan lengkap dengan set up alat laser Nd:YAG untuk pembentukan nanopartikel perak. Hasil yang diperoleh berupa data yang disajikan dalam bentuk tabel, grafik dan gambar sehingga mendukung tujuan dari penelitian.

4. Kelengkapan unsur dan kualitas terbitan:

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Semarang, 15 Mei 2023

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Synthesis of colloidal silver nanoparticles in various liquid media using pulse laser ablation method and its antibacterial properties

 Avicenna, Syifa; **Nurhasanah, Iis**; Khumaeni, Ali 
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^a Department of Physics, Faculty of Science and Mathematics, Diponegoro University, Jl. Prof. Soedarto SH, Tembalang, Semarang, 50275, Indonesia

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AgO Nanoparticles Synthesis by Different Nd:YAG Laser Pulse Energies

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Natural Magnetic Particles/Chitosan Impregnated with Silver Nanoparticles for Antibacterial Agents

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Moura, C.G. , Pereira, R.S.F. , Andritschky, M.
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Preparation and characterization of silver nanoparticles in natural polymers using laser ablation

Zamiri, R. , Azmi, B.Z. , Ahangar, H.A.
(2012) *Bulletin of Materials*

Abstract

The silver nanoparticles (AgNPs) have been applied as an antibacterial agent in consumer products, cosmetics, and food industries. In this present work, AgNPs were synthesized in various mediums of polyvinylpyrrolidone (PVP), polyethylene glycol (PEG), and chitosan using the pulse laser ablation synthesis method. Experimentally, a pulse Nd:YAG laser beam (1064 nm, 7 ns, 30 mJ) was directed using a silver mirror and focused using a quartz lens with a focal length of 30 mm on a silver metal plate placed in a petri dish containing liquid mediums for 120 min to produce colloidal silver nanoparticles.

The results certified that All AgNPs have a spherical shape with polydisperse size in all media, including PVP, PEG, and chitosan. The smallest AgNPs have been produced in PVP medium with an averaged smallest size of 11.62 nm. Based on this result, PVP is the preferred medium to produce AgNPs with the smallest size and good stability. The produced silver nanoparticles have been successfully employed as an antibacterial agent, which is experimentally demonstrated by using *Escherichia coli* and *Staphylococcus aureus*. The result certified that the produced silver nanoparticles could effectively kill the bacteria with a killing percentage of 99.6 to 100%. © 2021, Gadjah Mada University. All rights reserved.

Author keywords

Chitosan; Liquid media of PVP; Nd:YAG laser; PEG; Pulse laser ablation technique; Silver nanoparticles

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Indonesian Journal of Chemistry

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Announcements

What have we done to improve the quality of our journals?

As a consequence of being indexed on Scopus and ESCI, the manuscripts we received increased during the 2010-2019 period. Details were given in Fig. 1. This increase is a formidable challenge. On the one hand, we are under pressure from authors who demand short review times and short waiting times for publication. On the other hand, we must strictly maintain the quality of the articles we publish (Fig. 2).

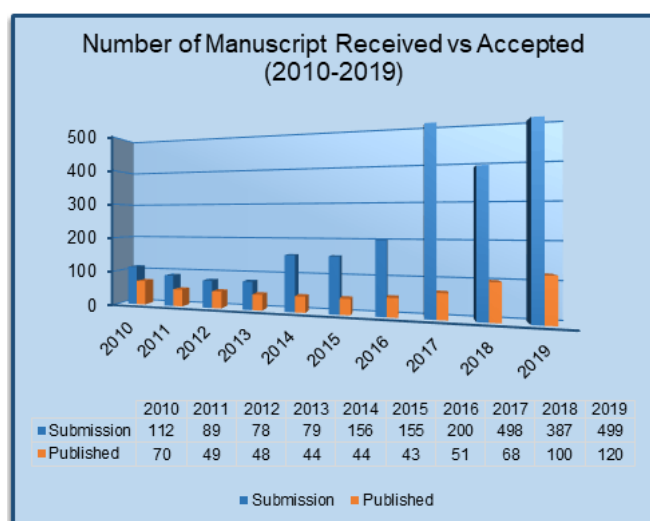
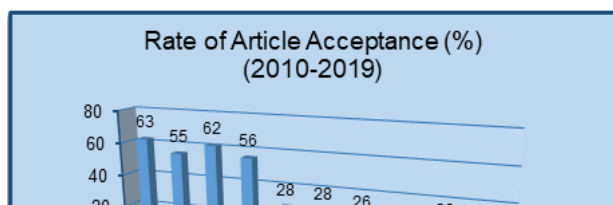


Figure 1. Number of Manuscript Received vs Accepted (2010-2019)



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Figure 2. Rate of Article Acceptance (%) (2010-2019)

The following are the steps we have taken to guarantee and improve the quality of the published article:

1. Since 2017 we have used the Open Journal System (OJS) on all article management functions and facilities to manage articles more conveniently. The editors can supervise each other through the system. Also, editors can quickly monitor the performance of reviewers and authors.
2. We implement a more stringent filter at an early stage to reject inappropriate manuscripts to proceed to the review process. We have determined a minimum standard for articles to continue the review process.
3. We conduct strict plagiarism checks on manuscripts that we deem appropriate to proceed to the review process using professional software.
4. We hold editor training and discussion forums to improve editors' ability to handle manuscripts and synchronize mindsets in decision-making.
5. We invite editors with proven expertise from various countries and they are willing to help us voluntarily
6. We invite scientists from various countries as reviewers. Therefore, we really thank you for their commitment to voluntarily reviewing the articles.
7. We evaluate the review results from reviewers. As a result, our review time is relatively long; the average for the 2015-2019 period is 4-5 months (Fig. 3).
8. We do the copyediting stage carefully for articles that have been accepted. This step is needed to prevent substantial errors that are missed in the review process. Copyediting is also very useful to improve the readability of articles, the feasibility of illustrations, the suitability of citations and references, etc. This process takes an average of 3-4 weeks.
9. We improve the quality of the layout of articles with stringent standards so that the appearance of each article in each volume becomes uniform. We always try to shorten the time for article layout while maintaining quality.
10. We carry out the proofreading stage by the author and editor as a final check uploading the article in an online system —the time required at this stage is, on average, 2-3 weeks.
11. Finally, we post it in the "articles in press" section. Author and editor still have a chance to make revisions if they find unnecessary errors.
12. We are taking into account the waiting time between articles accepted to publish, which is sharply increased in the 2015-2019 period (from 4.3 to 8.8 months), see Fig. 2. Through careful calculation, we manage the number of articles for each year's publication. Therefore, we increased the number of articles gradually from 43, 51, 68, 100, and 120. In 2020, we plan to publish 150 articles, which is distributed into 6 issues. The distribution of countries of origin of the authors for the 2015-2019 period is shown in Fig. 5

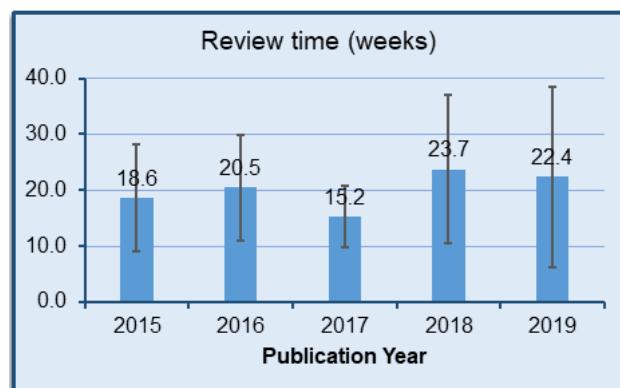


Figure 3. Average review time in the period of 2015-2019 (in weeks)

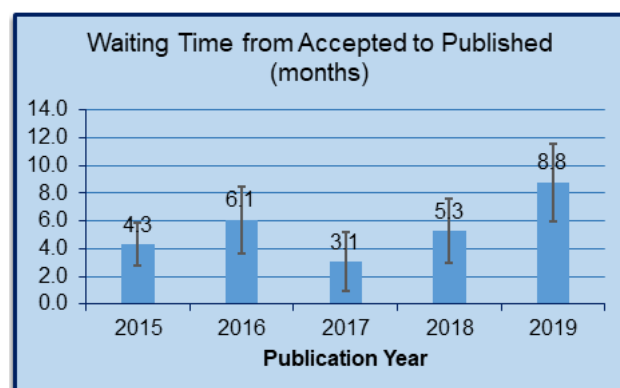
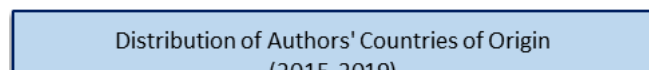


Figure 4. Average of waiting time from accepted to published (in months)



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antioxidant biodiesel catalyst

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immobilization kinetics

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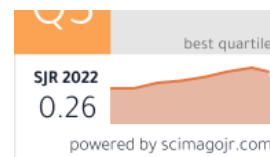
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Influence of Calcination Temperature on Size, Morphology and Optical Properties of ZNO/C Composite Synthesized by a Colloidal Method

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Abstract: ZnO is one of the most studied semiconductor materials because of its interesting chemicals, and from a technological point of view, mainly as a consequence of their outstanding properties, such as wurtzite type, non-toxic nature, large band gap, low cost, and environment-friendly. In this work, the ZnO/C composite was synthesized by a simple and fast low-temperature method; the solid product was calcination temperature at 100 to 400 °C. The influence of variation in calcination temperature was studied using X-ray diffraction (XRD), Fourier transforms infrared spectroscopy (FTIR), scanning electron microscopy (SEM), and UV-visible diffuse reflectance spectroscopy. The X-ray diffraction patterns indicated a high crystallinity and a nanocrystalline size of the ZnO/C composite hexagonal structure of wurtzite. The SEM image of the samples showed that the powder has a spherical structure of flakes aggregated in the common nucleus like a grid. The sphere consists of spindle and flower-like structures. The optical properties were determined by UV-vis diffuse reflectance spectroscopy, and it was found that the band gap energy of ZnO/C composite increase from 3.210 to 3.329 eV with an increase in calcination temperature from 100 to 400 °C. FTIR spectra and EDS analysis showed that the existence of carbon in the composite.

Keywords: ZnO/C composite; calcination temperature; colloidal method; morphology; optical properties

■ INTRODUCTION

Materials based on zinc oxide are the most interesting from a technological point of view, mainly because of their remarkable properties, such as the wide direct band gap of around 3.37 eV, a semiconductor material with a high exciton binding energy of 60 meV at room temperature [1], crystallizes in the typical hexagonal wurtzite structure with lattice parameters $a = b = 0.325$ nm and $c = 0.521$ nm [2]. All these properties make them widely applied in several fields, such as light-emitting diodes [3], solar cells [4], photocatalysis [5], and photovoltaic applications [6].

Carbon as a good candidate is used as a host material for composite because of its properties, such as high surface area and conductivity. The combination of ZnO with carbon will result in an intermediate energy level in the band gap of the material and reduce its absorption energy. Previous studies on ZnO/carbon composites have

improved the structural, morphological, vibrational properties and reduce the band gap of broadband semiconductors of ZnO [7]. Osman et al. [8] reported the synthesis of ZnO/C nanocomposite using glucose and observed enhanced visible-light photocatalytic activity. On the other hand, Jayalakshmi et al. [9] described the synthesis of ZnO/C Nanocomposite by the thermal decomposition using dextrose for the application of supercapacitors. There are different synthesis methods used to produce a ZnO/C composite, such as the sol-gel method [10], a hydrothermal method [11], micro-emulsion method [12], thermal decomposition [13], combustion method [14], and microwave-assisted method [15]. The Thermal treatment, for example, calcinations, would remove impurities, and the second chemical phase, used as a capping agent, would give a pure product. In addition, calcinations effectively modify the crystalline phase to obtain a homogeneous one.

Phytochemical Analysis of Bioactive Extracts and Seed Oil of Three Euphorbia Species from Algerian Flora by LC-MS and GC-MS

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Abstract: Euphorbia species possess pharmacological properties that have been widely used for medical purposes worldwide. In this paper, three plants belonging to the Euphorbia genus growing in North-East of Algeria were studied. The phenolic contents were identified using LC-MS, while the fatty acid composition of their fixed oils was determined with GC-MS. The quantification of the total condensed tannins and the leaves' entire anthocyanin content were performed using photometric methods. The main constituents of the polyphenolic compounds identified by LC-MS were ascorbic, chlorogenic, and ellagic acids. The oil yield of the seeds of *E. terracina*, *E. biumbellata*, and *E. dendroides* was 17.48%, 18.5%, and 20.05%, respectively. Quantitative analyses of these oils using GC-MS showed variations in the species' fatty acid constituents' concentrations and compositions. Besides, the phytochemical screening results showed that *E. terracina* possessed a high amount of tannin and anthocyanin content compared with other studied plants.

Keywords: Euphorbia; polyphenols; oil; LC-MS; GC-MS

■ INTRODUCTION

More attention has been given to plants as a human medicaments source, especially in some developing countries, as plant-derived medicines have made significant contributions to human health and wellbeing [1-3]. Among the natural products found in plants, polyphenols constitute one of the largest classes of the plant's secondary metabolite, which has an important role in preventing and restricting free radicals.

The plant *Euphorbia* belongs to the family Euphorbiaceae that is widespread worldwide and widely present in the tropical region. It is a large family of flowering plants, including 300 genera and over 5000 species [4-5].

The *Euphorbia* species are considered critical medicinal plants used mainly in folk medicine all over the world. In Africa, *Euphorbia* species were used to treat various diseases such as skin disease, migraines,

gonorrhea, fungal and inflammatory disorders, and sexual transmission [6-7]. In Nepal, the latex of *E. milii* is used to cure sprains [8], while in China, it is used to cure hepatitis [9]. In Pakistan *E. helioscopia* leaves are used to relieve constipation [10]. In India, *E. neriifolia* is known for its medicinal value, such as antibacterial, antifungal, antiviral, and antioxidant [11]. In Nigeria, essential oils from the leaves of *E. milii* are used for insecticidal action [12].

Few previous works are reported on the use of *E. biumbellata*, *E. terracina*, and *E. dendroides* in folk medicine. According to ethnobotanical investigations, it was observed that *E. terracina* leaves have been used as a remedy for paralysis and fever [13]. And *E. dendroides* was used as a fish poison and as a cathartic, while *E. biumbellata* latex has been used to cure warts [4].

Phytochemical studies of *Euphorbia dendroides* exhibited the presence of polyphenols, flavonoids, and