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

Judul Karya Ilmiah (Prosiding)	:	Detection of heavy metal containment of soil pollution due to waste of paper industry using Nd:YAG laser induced breakdown spectroscopy		
Nama/ Jumlah Penulis	:	3 orang		
Status Pengusul	:	~~Penulis pertama~~/ Penulis ke 2 / ~~Penulis Korespondesi~~ **		
Identitas Prosiding	:	a. Judul Prosiding	:	Journal of Physics: Conference Series
		b. ISBN/ISSN	:	1742-6588, 1742-6596
		c. Thn Terbit, Tempat Pelaks.	:	2020, Semarang Indonesia
		d. Penerbit/Organiser	:	IOP Publishing
		e. Alamat Repository/Web	:	https://iopscience.iop.org/journal/1742-6596
		Alamat Artikel	:	https://iopscience.iop.org/article/10.1088/1742-6596/1428/1/012006/pdf
		f. Terindeks di (jika ada)	:	Scopus

Kategori Publikasi Makalah (beri ✓pada kategori yang tepat) : ☑ *Prosiding* Forum Ilmiah Internasional
☐ *Prosiding* Forum Ilmiah Nasional

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Prosiding		Nilai Akhir Yang Diperoleh
	Internasional ☑	Nasional ☐	
a. Kelengkapan unsur isi prosiding (10%)	3		2,3
b. Ruang lingkup dan kedalaman pembahasan (30%)	9		8,1
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	9		8,2
d. Kelengkapan unsur dan kualitas terbitan /prosiding (30%)	9		8,1
Total = (100%)	**30**		**25,9**
Nilai Pengusul = 40% x (25,9/2) = 5,18			

Catatan Penilaian artikel oleh Reviewer :

1. **<u>Kesesuaian dan kelengkapan unsur prosiding:</u>**
   pKeseuaian Prosiding telah di tulis sesuai dengan prosedur penulisan yang ditentukan dan memiliki kelengkapan unsur prosiding yang cukup baik.
2. **<u>Ruang lingkup dan kedalaman pembahasan:</u>**
   Ruang lingkup pembahasan sebaiknya lebih tajam sesuai dengan sil riset yang di dasarkan pada gap penelitian yang dikemukakan.
3. **<u>Kecukupan dan kemutakhiran data/informasi dan metodologi:</u>**
   Data dan informasi yang digunakan dalam penulisan cukup mutakhir, sebaiknya ditambah litertur yang cukup dan terbarus sesuai dengan topik penelitian.
4. **<u>Kelengkapan unsur dan kualitas terbitan/ prosiding:</u>**
   Prosiding memiliki kelengkapan yang baik, diterbitkan oleh kepanitiaan yang terpercaya dan berpengalaman, memiliki similaritas yang cukup rendah.

Semarang, 20 April 2021
Reviewer 1

Prof. Dr. Suryono, S.Si., M.Si.
NIP. 197306301998021001
Unit Kerja : Fisika
Bidang Ilmu: Fakultas Sains dan Matematika

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

Judul Karya Ilmiah (Artikel)	:	Detection of heavy metal containment of soil pollution due to waste of paper industry using Nd:YAG laser induced breakdown spectroscopy		
Jumlah Penulis	:	3 orang		
Status Pengusul	:	~~Penulis pertama~~/ Penulis ke 2/ ~~Penulis Korespondesi~~ **		
Identitas Jurnal Ilmiah	:	a. Nama prosiding	:	Journal of Physics: Conference Series
		b. Nomor ISSN	:	1742-6588, 1742-6596
		c. Tahun terbit, tempat pelaksana	:	2020, Semarang Indonesia
		d. Penerbit	:	IOP Publishing
		e. Alamat web jurnal	:	https://iopscience.iop.org/journal/1742-6596
		f. Terindeks di Scimagojr/Scopus ~~atau di….**~~		
Kategori Publikasi Jurnal Ilmiah (beri ✓pada kategori yang tepat)	:	☑ Prosiding Ilmiah Internasional **		
		☐ Prosiding Nasional Terakreditasi		

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
	Reviewer I	Reviewer II	
a. Kelengkapan unsur isi jurnal (10%)	2,3	2,5	2,4
b. Ruang lingkup dan kedalaman pembahasan (30%)	8,1	8	8,05
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	8,2	8	8,1
d. Kelengkapan unsur dan kualitas penerbit (30%)	8,1	7,8	7,95
Total = (100%)	**25,9**	**26,8**	**26,35**
Nilai untuk Pengusul : (40% x 26,35/2) = 5,27			

Semarang, 24 Februari 2021

Reviewer 1

Prof. Dr. Suryono, S.Si., M.Si.
NIP. 197306301998021001
Bidang ilmu/Unit kerja : Fakultas Sains dan Matematika/Fisika

Reviewer 2

Dr. Eng. Eko Hidayanto, S.Si., M.Si.
NIP. 197301031998021001
Bidang ilmu/Unit kerja : Fakultas Sains dan Matematika/Fisika

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

Judul Karya Ilmiah (Prosiding)	:	Detection of heavy metal containment of soil pollution due to waste of paper industry using Nd:YAG laser induced breakdown spectroscopy		
Nama/ Jumlah Penulis	:	3 orang		
Status Pengusul	:	~~Penulis pertama~~/ Penulis ke 2 / ~~Penulis Korespondesi~~ **		
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		f. Terindeks di (jika ada)	:	Scopus

Kategori Publikasi Makalah (beri ✓pada kategori yang tepat) : ☑ *Prosiding* Forum Ilmiah Internasional
☐ *Prosiding* Forum Ilmiah Nasional

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Prosiding		Nilai Akhir Yang Diperoleh
	Internasional ☑	Nasional ☐	
a. Kelengkapan unsur isi prosiding (10%)	3		2,5
b. Ruang lingkup dan kedalaman pembahasan (30%)	9		8,0
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	9		8,0
d. Kelengkapan unsur dan kualitas terbitan /prosiding (30%)	9		7,8
Total = (100%)	**30**		**26,8**
Nilai Pengusul = 40% x 26,8/2 = 5,26			

Catatan Penilaian artikel oleh Reviewer :

1. **Kesesuaian dan kelengkapan unsur isi jurnal:**
   Isi jurnal sangat sesuai dan lengkap dari komponen-komponen yang ada abstrak, pendahuluan, prosedur eksperimen, hasil dan pembahasan, lalu kesimpulan dan daftar pustaka yang digunakan.
2. **Ruang lingkup dan kedalaman pembahasan:**
   Paper ini membahas tentang deteksi kandungan logam berat pencemaran tanah dengan spektroskopi LIBS dengan Laser Nd:YAG (1064 nm, 8 ns, 200 mJ) pada sampel tanah dalam bentuk pelet, pada tekanan atmosfer.
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Data-data/informasi serta metodologi yang digunakan mutakhir.
4. **Kelengkapan unsur dan kualitas terbitan:**
   Karya ini diterbitkan dalam prosiding internasional dengan unsur-unsur yang lengkap serta kualitas yang baik.

Semarang, 04 Juli 2021
Reviewer 2

Dr. Eng. Eko Hidayanto, S.Si., M.Si.
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Bidang Ilmu: Fakultas Sains dan Matematika

Physical Society of Indonesia

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This certificate is awarded to

HERI SUGITO

Presenter

"Detection Of Heavy Metal Containment Of Soil Pollution Due To Waste Of Paper Industry Using Nd:YAG Laser-Induced Breakdown Spectroscopy"

The 4th International Conference on Applied Physics and Materials Application (ICAPMA 2019)

Grand Mercure Angkasa Hotel, 18 – 20 September 2019

Chairman of Physical Society of Indonesia
North Sumatera

Prof. Drs. Motlan, M.Sc., Ph.D.

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Journal of Physics: Conference Series • *Open Access* • Volume 1428, Issue 1 • 7 January 2020 • Article number 012006 • 4th International Conference on Applied Physics and Materials Application 2019, ICAPMA 2019, Medan, North Sumatera Province, 18 September 2019 - 20 September 2019, 157044

Detection of heavy metal containment of soil pollution due to waste of paper industry using Nd:YAG laser induced breakdown spectroscopy

Sugito H. ✉ , Khumaeni A., Binu Q.M.

Save all to author list

Department of Physics, Faculty of Sains and Mathematics, Diponegoro University, Indonesia

Abstract

Indexed keywords

SciVal Topics

Metrics

Funding details

Abstract

Detection of heavy metal containment of soil pollution has been made by using laser-induced breakdown spectroscopy (LIBS). A pulsed Nd:YAG laser (1064 nm, 8 ns, 200 mJ) was focused on to a soil sample, which is prepared in the form of pellet, at atmospheric pressure. Emission spectra taken from the waste-contaminated soil and uncontaminated soil were obtained. Plasma emissions are then detected using a multichannel analyzer (OMA) to obtain the emission line spectrum that represents the content of atoms and molecules in the target material. The spectrum is recorded and compared with the spectrum of reference standards of atoms, ions and molecules (National Institute of Standards and Technology/NIST) so that the atomic and molecular content in the sample can be known. From the results of the study it was found that there are elements of heavy metals in the form of Fe, Cd, and Mg in polluted soils.

Indexed keywords

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Funding details

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Detection of heavy metal containment of soil pollution due to waste of paper industry using Nd:YAG laser induced breakdown spectroscopy

H Sugito[1], A Khumaeni[1] and Q M Binu[1]

Journal of Physics: Conference Series, Volume 1428, The 4th International Conference on Applied Physics and Materials Application 18–20 September 2019, North Sumatera Province, Indonesia

Citation H Sugito *et al* 2020 *J. Phys.: Conf. Ser.* **1428** 012006

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Abstract

Detection of heavy metal containment of soil pollution has been made by using laser-induced breakdown spectroscopy (LIBS). A pulsed Nd:YAG laser (1064 nm, 8 ns, 200 mJ) was focused on to a soil sample, which is prepared in the form of pellet, at atmospheric pressure. Emission spectra taken from the waste-contaminated soil and uncontaminated soil were obtained. Plasma emissions are then detected using a multichannel analyzer (OMA) to obtain the emission line spectrum that represents the content of atoms and molecules in the target material. The spectrum is recorded and compared with the spectrum of reference standards of atoms, ions and molecules (National Institute of Standards and Technology/NIST) so that the atomic and molecular content in the sample can be known. From the results of the study it was found that there are elements of heavy metals in the form of Fe, Cd, and Mg in polluted soils.

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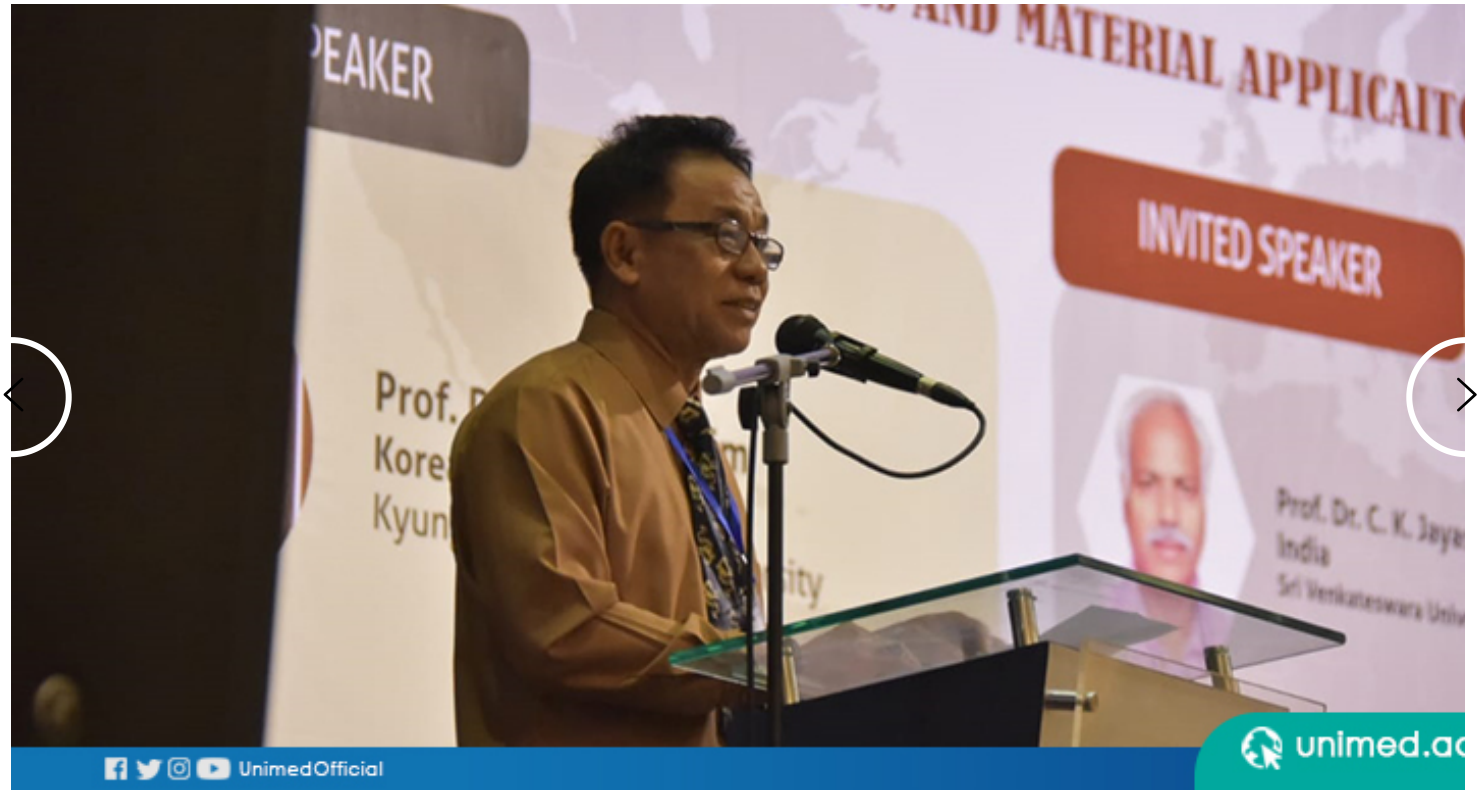

19 September 2019

UNIMED Jadi Tuan Rumah The 4th ICAPMA 2019

Wakil Rektor I Prof. Dr. Abdul Hamid K, M.Pd. membuka acara The 4th International Conference on Applied Physics and Materials Application (ICAPMA 2019) di Hotel Grand Mercure Medan. Pada kesempatan tersebut, turut hadir sebagai invited speaker adalah Prof. Dr. C. K. Jayasankar dari India, Prof. Dr. Mitra Djamal dari ITB Bandung (Ketua Himpunan Fisika Indonesia Pusat), Prof. Dr. Kohei Kamada dari Osaka – Jepang, Prof. Motlan, M.Sc., Ph.D dari Universitas Negeri Medan, Prof. Dr. Tossawat Seetawan dari Thailand, Dr. Kerista Tarigan, M. Eng. Sc. dari USU, Prof. Dr. Pham Hong Minh dari Vietnam, Drs. Togi Tampubolon, M.Si., Ph.D. dari Universitas Negeri Medan dan Prof. Dr. Than Zaw oo dari Yangon – Myanmar. Adapun pembicara kunci (keynote speaker) yang hadir dalam konferensi ini adalah pakar Fisika Energi Tinggi dari Korea yakni Professor Hong Joo Kim dan ahli Luminesensi Optik Prof. Jakrapong Kaewkhao dari Nakhon Pathom – Thailand.

Kontak
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Pada kesempatan tersebut, Wakil Rektor I Prof. Dr. Abdul Hamid K, M.Pd. mengapresiasi dan bangga Universitas Negeri Medan berkesempatan untuk melaksanakan konfrensi berskala internasional dengan konsorsium pelaksana lima negara yakni: Indonesia, Thailand, Vietnam, Myanmar dan Korea. Dia mengatakan acara ini sejalan dengan moto Unimed “The Character Building University”. Kami berharap makalah yang ditampilkan nantinya, akan menginspirasi kita untuk pencapaian sebagai Universitas Kelas Dunia. Acara ini juga memfasilitasi antara akademik, penelitian dan kebijakan, dengan melakukan diskusi dan berbagi pengalaman yang bermanfaat guna kemajuan teknologi.

Acara ICAPMA ini diselenggarakan dari tanggal 18 – 20 September di Hotel Grand Mercure Angkasa Medan. Adapun tema kegiatan ini adalah “The Role of Applied Physics and Material Application in Improve of Nation Competitiveness”.

ICAPMA merupakan kegiatan konferensi bidang Fisika dan Aplikasi Material berskala Internasional dengan konsorsium pelaksana lima negara yakni: Indonesia, Thailand, Vietnam, Myanmar dan Korea. Penyelenggaraan ICAPMA pada tahun ini merupakan yang ke-4 sejak dilakukan pada tahun 2003 yang lalu. Adapun penyelenggaraan konferensi ini diselenggarakan dua tahun sekali dengan negera penyelenggara bergiliran. Pada tahun 2019, Indonesia melalui Himpunan Fisika Indonesia (HFI) cabang Sumatera Utara yang didukung oleh dua Universitas terbesar Sumatera Utara yakni Unimed dan USU dipercaya sebagai penyelenggara ICAPMA.

Ketua penyelenggara Dr. Juniastel Rajagukguk, M.Si menjelaskan bahwa konferensi ICAPMA kali ini menghadirkan 110 peserta pemakalah dari berbagai negara seperti India, Korea, Jepang, Thailand, Vietnam, Myanmar dan Indonesia sendiri. Sedangkan dari dalam negeri, Dr. Juniastel melaporkan bahwa yang hadir merupakan para ahli fisika dan material maju seperti dari Institut Teknologi Bandung, LIPI, Universitas Indonesia (UI), Badan Tenaga Nuklir Nasional (BATAN), UGM, Unsyah, USU, Unimed, Universitas Hasanuddin (UNHAS), UNJ, ITM Udayana, Untirta, Universitas Brawijaya, UNDIP, Universitas Palangka Raya dan Universitas lainnya.

Ketua HFI Sumatera Utara, Prof. Dr. Motlan, M.Sc., Ph.D. mengungkapkan tema umum ini dimaksudkan untuk mengakomodasi berbagai minat dan keahlian dalam bidang fisika. Dengan demikian, diskusi tentang penelitian dalam bidang biomaterial, film tipis, bahan elektronik, paduan logam, bahan komposit keramik nano-material dan ilmu fisika lainnya dapat menghasilkan inovasi baru. Para peneliti diharapkan dapat berinovasi untuk menghasilkan penelitian untuk mendukung Revolusi Industri 4.0 masa depan. Para praktisi dipersilakan untuk berbagi informasi terkait dengan bidang keahlian mereka. Ketua ICAPMA menyampaikan bahwa semua makalah yang diterima akan dipublikasikan dalam publikasi terindeks internasional. Panitia telah menjalin kerjasama dengan penerbit IOP yang diindeks oleh scopus, yang merupakan agensi pengindeksan ternama. (Humas Unimed/eo).

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