

BULETIN F I S I K A

SUSUNAN REDAKSI BULETIN FISIKA UDAYANA

Pengarah : Dekan FMIPA Universitas Udayana
Prof. Dra. Ni Luh Watiniasih, M.Sc. Ph.D

Penanggung Jawab : Koordinator Program Studi Fisika FMIPA UNUD
Dr. Drs. Wayan Gede Suharta, M.Si

Editor In Chief:

Prof. Ni Nyoman Rupiasih, Ph.D., Department of Physics, Faculty of Mathematics and Natural Sciences, Udayana University, Bali, Indonesia

Journal Editor:

Prof. Dr. Ir. Hery Suyanto, M.T., Department of Physics, Faculty of Mathematics and Natural Sciences, Udayana University, Bali, Indonesia

Dr. W.G. Suharta, S.Si., M.Si., Department of Physics, Faculty of Mathematics and Natural Sciences, Udayana University, Bali, Indonesia

Section Editors:

K.N. Suarbawa, S.Si., M.Si., Department of Physics, Faculty of Mathematics and Natural Sciences, Udayana University, Bali, Indonesia

Editorial Boards:

Prof. Dr. Drs. A.A. Ngr. Gunawan, M.T., Dept. of Physics, Faculty of Mathematics and Natural Sciences, Udayana University, Bali, Indonesia

Prof Dr. Yusaku Fujii, Department of Mechanical Science and Technology, School of Science and Technology, Gunma University, Japan

Prof Silvano Donati, University of Pavia, Italy

Prof. Dr. P.B. Vidyasagar, Savitribai Phule Pune University, India

Dr. Santosh Bhaskaran, Vivekanand Education Society's College of Arts, Science and Commerce, India

Sagar S. Jagtap, Ph.D., Department of Physics, Haribhai V. Desai College, India

Dr. Eng. I Nyoman Sudiana, S.Pd. M.Si., Dept. of Physics, Universitas Halu Oleo, Kendari, Indonesia

Dr. Eng. Kuwat Triyana, M.Si., Gadjah Mada University, Indonesia

Prof. Dr. Darminto, M.Sc., Institute Technology Sepuluh Nopember Surabaya, Indonesia

Prof. Dr. Idam Arif, Institut Teknologi Bandung, Indonesia

I G.A. Putra Adnyana, S.Si., M.Si., Department of Physics, Faculty of Mathematics and Natural Sciences, Udayana University, Bali, Indonesia

Technical Editors

I G.A. Widagda, S.Si, M.Kom., Department of Physics, Faculty of Mathematics and Natural Sciences, Udayana University, Bali, Indonesia

I Ketut Putra, S.Si., M.Si., Department of Physics, Faculty of Mathematics and Natural Sciences, Udayana University, Bali, Indonesia

ISSN :1411-4690

e-ISSN: 2580-9733

Alamat Redaksi : Program Studi Fisika FMIPA Universitas Udayana, Kampus
Bukit Jimbaran Badung Bali Program Studi Fisika FMIPA
Indonesia

Penerbit : P.S. Fisika FMIPA Universitas Udayana

Telp. : (0361) 701954 Ext 246

Terbit setiap enam bulan sekali

Terakreditasi **SINTA 4**

Kata Pengantar

Puji syukur kami panjatkan kehadapan Tuhan Yang Maha Esa atas terbitnya Buletin Fisika Program Studi Fisika Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Udayana, Volume 25, No. 1, February 2024.

Dalam volume Buletin kali ini, kami memuat delapan belas artikel yang merupakan hasil penelitian dan studi *literature*, yaitu:

1. Designing and Creating an Automatic Hydroponic Plant Watering Control System Using a TDS Sensor Based on an ATMEGA328 Microcontroller, Feriandanu Hakim, I Wayan Supardi, Ni Nyoman Ratini
2. Determination of the Optical Band gap Energy from the Extraction and Evaporation of Anthocyanin Compound Sea Lettuce (*Ulva Lactuca L.*) Using Tauc Plot Method, Fiar Tri Santika, Hery Suyanto, Ni Luh Putu Trisnawati, I Putu Tedy Indrayana
3. Zero-Point Field is the Cause for the Lorentz Transformations and Leads to Find Misconceptions about the Special Relativity, Abouzar Bahari
4. Analysis A Water Cooler Simulator on A Solar Cell, I Wayan Teresna, I Nengah Suparta
5. Determination of Patient Dose on Head Computed Tomography Scan on Risk Factors of Cataract Using Size-Specific Dose Estimate (SSDE), Shinta Palupi, Ni Luh Putu Trisnawati, Winardi Tjahyo Baskoro, Rozi Irhas
6. Analysis of the Spectrum Pattern of Human Blood Plasma Using Raman Spectroscopy, Anak Agung Intan Rahmasari, Ida Bagus Made Suryatika, I Wayan Supardi
7. Effect of Exposure on Radiographic Image Quality Based on Object Thickness on Abdominal Examination, Efrensiana Ana Melti, I Gde Antha Kasmawan, I Wayan Supardi
8. The Effect of Glutaraldehyde Crosslinking on the Morphology of PVA/Chitosan/Collagen Composite Nanofibers, Ria Yuliani, Dewa Ayu Sukma Pranastia, Ni Nyoman Rupiasih, I Wayan Supardi, K N Suarbawa
9. Calculation of Laser-Induced Breakdown Spectroscopy Plasma Temperature using Boltzmann Equation using two Netral Cu line Emission, Vincent Milano, Suyanto Hery, Ida Bagus Ketut Yoga

10. Analysis of Atmospheric Lability in Heavy Rain Events in the South Bali Region (Case Study: Flood Events 5 and 6 December 2021), Anin Nuril Firdausi, I Made Yuliara, Kadek Sumaja, Komang Ngurah Suarbawa, Putu Suardana, I Ketut Putra
11. Study on the Relationship between Hotspots and Air Pollution Standard Index Based on Carbon Monoxide Concentration in West Kalimantan, Galuh Utamia Dillayati, Dwiria Wahyuni, Riza Adriat, Azrul Azwar, Zulfian
12. Soil Infiltration Rate Mapping of Pontianak City using Single Ring Infiltrometer, Radhitya Perdhana, Muhardi, Yuris Sutanto
13. Identification of Metal Content in Water Samples from Natural Hot Water Sources in Ulumbu Desa Wewo Kecamatan Satar Mese Center Manggarai Regency, Helena Idah, Ida Bagus Made Suryatika, Ida Bagus Alit Paramarta, A.A. Ngurah Gunawan, Nyoman Wendri, N.N. Rupiasih
14. Biosynthesis And Characterization of Silver Nanoparticles Using Nutgrass Rhizome Extract (*Cyperus rotundus* L.), Rosvita Hilbrida Sulastri, Ni Nyoman Rupiasih, I Wayan Supardi, I Gde Antha Kasmawan, I Gusti Agung Putra Adnyana, I Nengah Sandi
15. Optical Characterization of Ferric-Doped ZnO Thin Film Deposited By Chemical Bath Deposition Method, Mohammad Shahjahan, Aktarunnahar Eseta, Mohammad Asadul Haque
16. Analysis of Carbon Phase in Activated Coconut Shell Charcoal Based Teeth Whitening Using X-Ray Diffraction (XRD) Method, Muna Alfira, Made Sumadiyasa, Komang Ngurah Suarbawa, Nyoman Wendri
17. Effect of Density on Water Content of Making Corn Skin and Cob Biocharcoal Briquettes, Nurul Hafiza, Masthura, Ety Jumiaty
18. Prototype of Automatic Waste Filter with Load Sensor Cell on Drainage Waters, Siti Nurlisa, Mulkan Iskandar Nasution, Nazaruddin Nasution

Kami mengucapkan terimakasih kepada semua pihak terkait yang telah membantu terlaksananya penerbitan Buletin Fisika ini, dan kepada pembaca kami mohon kritik dan saran yang membangun untuk kesempurnaan Buletin Fisika ini.

Redaksi

Daftar Isi

	Halaman
1. <i>Designing and Creating an Automatic Hydroponic Plant Watering Control System Using a TDS Sensor Based on an ATMEGA328 Microcontroller</i> , Feriandanu Hakim, I Wayan Supardi, Ni Nyoman Ratini	1-7
2. <i>Determination of the Optical Band gap Energy from the Extraction and Evaporation of Anthocyanin Compound Sea Lettuce (Ulva Lactuca L.) Using Tauc Plot Method</i> , Fiar Tri Santika, Hery Suyanto, Ni Luh Putu Trisnawati, I Putu Tedy Indrayana	8-13
3. <i>Zero-Point Field is the Cause for the Lorentz Transformations and Leads to Find Misconceptions about the Special Relativity</i> , Abouzar Bahari	14-26
4. <i>Analysis A Water Cooler Simulator on A Solar Cell</i> , I Wayan Teresna, I Nengah Suparta	27-36
5. <i>Determination of Patient Dose on Head Computed Tomography Scan on Risk Factors of Cataract Using Size-Specific Dose Estimate (SSDE)</i> , Shinta Palupi, Ni Luh Putu Trisnawati, Winardi Tjahyo Baskoro, Rozi Irhas	37-42
6. <i>Analysis of the Spectrum Pattern of Human Blood Plasma Using Raman Spectroscopy</i> , Anak Agung Intan Rahmasari, Ida Bagus Made Suryatika, I Wayan Supardi	43-47
7. <i>Effect of Exposure on Radiographic Image Quality Based on Object Thickness on Abdominal Examination</i> , Efrensiana Ana Melti, I Gde Antha Kasmawan, I Wayan Supardi	48-55
8. <i>The Effect of Glutaraldehyde Crosslinking on the Morphology of PVA/Chitosan/Collagen Composite Nanofibers</i> , Ria Yuliani,	56-62

Dewa Ayu Sukma Pranastia, Ni Nyoman Rupiasih, I Wayan Supardi, K N Suarbawa	
9. <i>Calculation of Laser-Induced Breakdown Spectroscopy Plasma Temperature using Boltzmann Equation using two Netral Cu line Emission</i> , Vincent Milano, Suyanto Hery, Ida Bagus Ketut Yoga	63-73
10. <i>Analysis of Atmospheric Lability in Heavy Rain Events in the South Bali Region (Case Study: Flood Events 5 and 6 December 2021)</i> , Anin Nuril Firdausi, I Made Yuliara, Kadek Sumaja, Komang Ngurah Suarbawa, Putu Suardana, I Ketut Putra	74-80
11. <i>Study on the Relationship between Hotspots and Air Pollution Standard Index Based on Carbon Monoxide Concentration in West Kalimantan</i> , Galuh Utamia Dillayati, Dwiria Wahyuni, Riza Adriat, Azrul Azwar, Zulfian	81-88
12. <i>Soil Infiltration Rate Mapping of Pontianak City using Single Ring Infiltrometer</i> , Radhitya Perdana, Muhardi, Yuris Sutanto	89-97
13. <i>Identification of Metal Content in Water Samples from Natural Hot Water Sources in Ulumbu Desa Wewo Kecamatan Satar Mese Center Manggarai Regency</i> , Helena Idah, Ida Bagus Made Suryatika, Ida Bagus Alit Paramarta, A.A. Ngurah Gunawan, Nyoman Wendri, N.N. Rupiasih	98-105
14. <i>Biosynthesis And Characterization of Silver Nanoparticles Using Nutgrass Rhizome Extract (Cyperus rotundus L.)</i> , Rosvita Hilbrida Sulastri, Ni Nyoman Rupiasih, I Wayan Supardi, I Gde Antha Kasmawan, I Gusti Agung Putra Adnyana, I Nengah Sandi	106-114
15. <i>Optical Characterization of Ferric-Doped ZnO Thin Film Deposited By Chemical Bath Deposition Method</i> , Mohammad Shahjahan, Aktarunnahar Eseta, Mohammad Asadul Haque	115-123
16. <i>Analysis of Carbon Phase in Activated Coconut Shell Charcoal Based Teeth Whitening Using X-Ray Diffraction (XRD) Method</i> , Muna Alfira, Made Sumadiyasa, Komang Ngurah Suarbawa,	124-129

<i>Nyoman Wendri</i>	
<i>17. Effect of Density on Water Content of Making Corn Skin and Cob Biocharcoal Briquettes, Nurul Hafiza, Masthura, Ety Jumiati</i>	<i>130-134</i>
<i>18. Prototype of Automatic Waste Filter with Load Sensor Cell on Drainage Waters, Siti Nurlisa, Mulkan Iskandar Nasution, Nazaruddin Nasution</i>	<i>135 – 141</i>