



Fisika



LPPM



Volume 5 Issue 1, April 2020

SPEKTRA

Jurnal Fisika dan Aplikasinya

DOI: doi.org/10.21009/SPEKTRA

e-ISSN : 2541-3392

SPEKTRA: Jurnal Fisika dan Aplikasinya

Volume 5 Issue 1, April 2020

DOI: doi.org/10.21009/SPEKTRA.05100

Abstracting and Indexing:

			
			
			
			

SPEKTRA: Jurnal Fisika dan Aplikasinya

Volume 5 Issue 1, April 2020

DESIGN OF THE POLLUTION GAS CARBON MONOXIDE (CO) MONITORING SYSTEM BASED ON MICROCONTROLLER*Erna Kusuma Wati, Fitria Hidayanti, Novi Azman***THE DETERMINATION OF BARIUM STRONTIUM TITANATE THIN FILM BAND GAP ENERGY $\text{Ba}_{0,15}\text{Sr}_{0,85}\text{TiO}_3$ USING ULTRAVIOLET-VISIBLE SPECTROSCOPY***Rahmi Dewi, Krisman, Zulkarnaen, Rahmi Afrida Syahraini, TS Luqman Husein***SYNTHESIS AND CHARACTERIZATION OF STRUCTURAL NANOCOMPOSITE TITANIUM DIOXIDE COPPER-DOPED USING THE IMPREGNATION METHOD***La Ode Asmin, La Isa***ANALYSIS OF THE EFFECT OF CARE DOSE 4D SOFTWARE USE ON IMAGE QUALITY AND RADIATION DOSE ON THE CT SCAN ABDOMEN***Ni Larasati Kartika Sari, Merry Suzana, Muzilman Muslim, Dewi Mulyati***CHARACTERISTICS OF RAINFALL AND PRECIPITABLE WATER IN THE ANNUAL AND SEMIANNUAL RAINFALL IN THE AREA WITH VARIOUS INTENSITY OF EL NINO (SUMATERA CASE STUDY)***Agus Safril***THE DESIGN OF DISPLAY DIGITAL DATA INTERFACE CLAMP-METER COMPLEMENTED BY SENSOR GMR (GIANT MAGNETORESISTANCE)***Yulkifli, Fitri Afriani, Yohandri, Ramli***THE OUTBREAK'S MODELING OF CORONAVIRUS (COVID-19) USING THE MODIFIED SEIR MODEL IN INDONESIA***Rustan, Linda Handayani***DESIGN OF METAL HEAT CONDUCTIVITY MEASUREMENT USING PROBE METHOD***Fitria Hidayanti, Hari Hadi Santoso, Gigih Baskara***SURFACE MORPHOLOGY OF SPUTTERED TITANIUM-ALUMINUM-NITRIDE COATINGS***Esmar Budi, M. Mohd. Razali, A.R. Md. Nizam*

Editor in Chief

Dr. Widyaningrum Indrasari (Universitas Negeri Jakarta)

Editors

Prof. Madya Dr. Md. Nizam Abd Rahman (Universiti Teknikal Malaysia Melaka)

Prof. Dr. Agus Setyo Budi, M.Sc. (Universitas Negeri Jakarta)

Dr. Ezza Syuhada Sazali (Universiti Teknologi Malaysia)

Dr. Triati Dewi Kencana Wungu (Institut Teknologi Bandung)

Dr. Iwan Sugihartono, M.Si. (Universitas Negeri Jakarta)

Dr. Esmar Budi, M.T. (Universitas Negeri Jakarta)

Dr. Irzaman, M.Si. (Institut Pertanian Bogor)

Dr. -Ing. Rahmondia Nanda Setiadi, M.Si. (Universitas Riau)

Dr. Yulkifli, M.Si. (Universitas Negeri Padang)

Dr. Idha Royani, M.Si. (Universitas Sriwijaya)

Dr. Masturi (Universitas Negeri Semarang)

Dr. Rahadi Wirawan, M.Si. (Universitas Mataram)

Dr. Eleonora Agustine, M.Si. (Universitas Padjadjaran)

Dr. Lilik Hasanah (Universitas Pendidikan Indonesia)

Dr. Teguh Budi Prayitno, M.Si. (Universitas Negeri Jakarta)

Yanurita Dwi Hapsari, M.Sc. (Institut Teknologi Sepuluh Nopember)

Editorial Office

Program Studi Fisika Fakultas MIPA

Kampus A Universitas Negeri Jakarta

Gedung K.H. Hasyim Asyari Lt.10

Jalan Rawamangun Muka No.1

Rawamangun-Pulogadung Jakarta Timur, 13220

Reviewers (Mitra Bebestari)

Prof. Yusaku Fujii (Gunma University)
Prof. Hsiang-Lin Liu (National Taiwan Normal University)
Prof. Md. Rahim Sahar (Universiti Teknologi Malaysia)
Dr. Ramli, M.Si. (Universitas Negeri Padang)
Dr. Fiber Monado (Universitas Sriwijaya)
Dr. Zaroh Irayani (Universitas Jenderal Sudirman)
Dr. Siti Zulaikah, M.Si. (Universitas Negeri Malang)
Dr. Sparisoma Viridi (Institut Teknologi Bandung)
Dr.rer.nat. Bambang Heru Iswanto, M.Si. (Universitas Negeri Jakarta)
Dr. Sunaryo, M.Si. (Universitas Negeri Jakarta)
Dr. Mangasi Alion Marpaung, M.Si. (Universitas Negeri Jakarta)
Dr. Erfan Handoko, M.Si. (Universitas Negeri Jakarta)
Dr. Anggara Budi Susila, M.Si. (Universitas Negeri Jakarta)
Dr. Mutia Delina, M.Si. (Universitas Negeri Jakarta)
Dr. Trismidianto, M.Si. (Pusat Sains dan Teknologi Atmosfer, LAPAN)
Dr. Lusi Safriani, M.Si. (Universitas Padjadjaran)
Dr. Agus Supriyanto, M.Si. (Universitas Negeri Sebelas Maret)
Dr. Umiatin, M.Si. (Universitas Negeri Jakarta)
Taufiq Hidayah, M.Si. (Pusat Meteorologi BMKG)
Prihatin Oktivasari, M.Si. (Politeknik Negeri Jakarta)
Mera Kartika Delimayanti, M.T. (Politeknik Negeri Jakarta)
Dewi Mulyati, M.Si.,M.Sc. (Universitas Negeri Jakarta)
Riser Fahdiran, M.Si. (Universitas Negeri Jakarta)

EDITORIAL FOREWORD

SPEKTRA: Jurnal Fisika dan Aplikasinya is dedicated to all physics practitioners. The coverage of SPEKTRA includes: Instrumentation and Computational Physics, Material Physics, Medical Physics and Biophysics, Astrophysics, Theoretical Physics, Particle and Nuclear Physics, Environment Physics, Renewable Energy, and other fields related to the application of physics.

SPEKTRA Volume 5 issue 1 contains 9 papers: 1) Design of The Pollution Gas Carbon Monoxide (CO) Monitoring System Based on Microcontroller; 2) The Determination of Barium Strontium Titanate Thin Film Band Gap Energy $Ba_{0,15}Sr_{0,85}TiO_3$ Using Ultraviolet-Visible Spectroscopy; 3) Synthesis and Characterization of Structural Nanocomposite Titanium Dioxide Copper-Doped Using The Impregnation Method; 4) Analysis of The Effect of Care Dose 4D Software Use on Image Quality and Radiation Dose on The CT Scan Abdomen; 5) Characteristics of Rainfall and Precipitable Water in The Annual and Semiannual Rainfall in The Area with Various Intensity of El Nino (Sumatera Case Study); 6) The Design of Display Digital Data Interface Clamp-Meter Complemented by Sensor GMR (Giant Magnetoresistance); 7) The Outbreak's Modeling of Coronavirus (Covid-19) Using The Modified Seir Model in Indonesia; 8) Design of Metal Heat Conductivity Measurement Using Probe Method; and 9) Surface Morphology Of Sputtered Titanium-Aluminum-Nitride Coatings.

Hopefully, SPEKTRA can be a reference for readers and researchers in developing physics and its application.

Jakarta, 30 April 2020

Editor-in-Chief,

Widyaningrum Indrasari

CONTENTS

TITLE AND AUTHOR	PAGES
DESIGN OF THE POLLUTION GAS CARBON MONOXIDE (CO) MONITORING SYSTEM BASED ON MICROCONTROLLER <i>Erna Kusuma Wati, Fitria Hidayanti, Novi Azman</i>	1 – 10
THE DETERMINATION OF BARIUM STRONTIUM TITANATE THIN FILM BAND GAP ENERGY $\text{Ba}_{0,15}\text{Sr}_{0,85}\text{TiO}_3$ USING ULTRAVIOLET-VISIBLE SPECTROSCOPY <i>Rahmi Dewi, Krisman, Zulkarnaen, Rahmi Afrida Syahraini, TS Luqman Husein</i>	11 – 20
SYNTHESIS AND CHARACTERIZATION OF STRUCTURAL NANOCOMPOSITE TITANIUM DIOXIDE COPPER-DOPED USING THE IMPREGNATION METHOD <i>La Ode Asmin, La Isa</i>	21 – 30
ANALYSIS OF THE EFFECT OF CARE DOSE 4D SOFTWARE USE ON IMAGE QUALITY AND RADIATION DOSE ON THE CT SCAN ABDOMEN <i>Ni Larasati Kartika Sari, Merry Suzana, Muzilman Muslim, Dewi Mulyati</i>	31 – 40
CHARACTERISTICS OF RAINFALL AND PRECIPITABLE WATER IN THE ANNUAL AND SEMIANNUAL RAINFALL IN THE AREA WITH VARIOUS INTENSITY OF EL NINO (SUMATERA CASE STUDY) <i>Agus Safril</i>	41 – 52
THE DESIGN OF DISPLAY DIGITAL DATA INTERFACE CLAMP-METER COMPLEMENTED BY SENSOR GMR (GIANT MAGNETORESISTANCE) <i>Yulkifli, Fitri Afriani, Yohandri, Ramli</i>	53 – 60
THE OUTBREAK'S MODELING OF CORONAVIRUS (COVID-19) USING THE MODIFIED SEIR MODEL IN INDONESIA <i>Rustan, Linda Handayani</i>	61 – 68
DESIGN OF METAL HEAT CONDUCTIVITY MEASUREMENT USING PROBE METHOD <i>Fitria Hidayanti, Hari Hadi Santoso, Gigih Baskara</i>	69 – 78
SURFACE MORPHOLOGY OF SPUTTERED TITANIUM-ALUMINUM-NITRIDE COATINGS <i>Esmar Budi, M. Mohd. Razali, A.R. Md. Nizam</i>	79 – 86

