Poster di Seminar Internasional

PIPS 2015

The 2nd Padjadjaran International Physics Symposium 2015

Jatinangor, Indonesia

1st-2nd September 2015

Modification of Organic Phosphor Using Inorganic-organic Hybrid Polymer as Conversion Materials for Solid State Lighting: From Its Synthesis to Application

(**Fitrilawati,** Norman Syakir, Togar Saragi, Annisa Aprilia, Sahrul Hidayat, Rustam E. Siregar, Hendro, Rahmat Hidayat)

The 2nd Padjadjaran International Physics Symposium

Bale Sawala, Universitas Padjadjaran
Jatinangor

1-2 September 2015

Material Functionalization and Energy Conservations

Department of Physics
Faculty of Mathematics and Natural Sciences
Universitas Padjadjaran

ABSTRACT BOOKS

The 2nd Padjadjaran International Physics Symposuim
Material Functionalization and Energy Conservations

PROGRAMME

1st day – September 1st 2015

TIME	ACTIVITIES		
08.00 – 08.25	Registration		
08.25 – 08.30	Welcoming Address		
08.30 – 09.15	Plenary Speaker 1 (Prof. Shuji Owada, Waseda Univ., Japan) Importance of Solid Phase Separation in Resources Recycling		
09.15 – 09.45	Plenary Speaker 2 (Prof. Poki Chen, National Taiwan University of Science and Technology,Taiwan) Intelligent Power Environment Monitoring for Smart Home		
09.45 – 10.15	Coffee Break		
10.15 – 10.45	Plenary Speaker 3 (Dr. Edward Halawa, Charles Darwin University, Australia) Solar Water Heating -An Overview		
10.45 – 11.15	Plenary Speaker 4 (Prof. Dr. N. Balasubramanian, Anna Univ, India) Advanced Carbon Functional Material		
11.15 – 12.00	Opening Ceremony		
	- Chairman		
	- Rector of Unpad		
	- Photo session		
12.00 – 13.00	Lunch Break		
13.00 – 15.00	Parallel Session		
	ROOM A	**ROOM B**	**ROOM C**
	Material Functionalization and Energy Conservation (ME) - Moderator: Dr. Annisa Aprilia	Material Functionalization and Energy Conservation (ME) - Moderator: Dr. Togar Saragi	Computational and Modeling for Energy Conservations (CM) + Instrumentation & Control System on Material Characterization & Energy Conservations (ICS), Moderator: Dr. Dessy Novita, MT.
13.00 – 13.30	INV-1 : The Thermodynamic Cycle Models for Geothermal Power Plants by Considering the Working Fluid Characteristic (Dr. Cukup Mulyana)	INV-3 : A review on AFM analysis for material characterization(Dr. Risa Suryana)	INV-2: Doping Effects of Rare Earth Molecules on Electric and Magnetic Properties of the Gallium Nitride: Density Functional Study on Energy Saving Applications (Dr. Acep Furqon)
13.30 – 13.45	Activated Coconut Shell Charcoal Carbon Using Chemical-Physical Activation	Charges Carrier Generation Potential of Graphene/Si-TiO_2 based Solar Cell Device in UV-Vis Wavelength Range Spectra	Hipocenter Relocation of Microearthquake using Markov Chain Simulation (Case Study: on Geothermal Field)
13.45 – 14.00	Interaction of Methanol and Its Dehydrogenation Species with Pt-alloy Surfaces	Effect of Growth Solution Concentration on the Performance of Gallium Doped ZnO Nanostructures Dye Sensitized Solar Sells (DSSCs)	A Neutronic Evaluation of Small/Medium PB-BI Cooled Fast Reactor with Nitride, Carbide and Mox Fuel
14.00 – 14.15	Microscopically Structural Examination of Fe_3O_4 Nanoparticles Spin-coated onto Cu Substrate	Detection of CdSe Quantum Dot Photoluminescence for Security Label on Paper	Effect of Turbulence Modelling to Predict Combustion and Nanoparticle Production in the Flame Assisted Spray Dryer Based On Computational Fluid Dynamics
14.15 – 14.30	Effect of KOH Concentratioin on Carbon Electrode from Rubber Wood for Supercapacitor Application: Cyclic Voltammetry Analysis	Floatability Study of Graphite Ore from South Sulawesi (Indonesia)	Hidrocarbon Exploration with Geophysical Methods: Resistivity Image of the Belik Area, Purbalingga based on Magnetotelluric Data
14.30 – 14.45	Development of Green Nickel-Based Catalysts Zeolite for Citronella Oil Conversion to Isopulegol	Effect of Quartz Sand on Compressive Strength of the Solid Waste Composite	The Identication of Geothermal with Geographic Information System and Remote Sensing in Distric of Dolok Marawa
14.45 – 15.00	Optimization Pretreatment Process of Lignocellulosic Waste of Bagas Sorghum for Bioethanol Production	Characterization of 2?0 Correction for Improving the Accuracy of Lattice Parameters in X-Ray Diffraction Analysis	Design and Simulation of Maximum Power Point Tracking (MPPT) System on Solar Module System Using Constant Voltage (CV) Method
15.00 – 15.30	Coffee Break		
15.30 – 17.00	Poster Session		
18.00 – 21.00	Banquet for all participant		

2nd day – September 2nd 2015

TIME	ACTIVITIES		
08.15 – 09.00	Plenary Speaker 5 (Dr. M.V. Venkatashamy Reddy, NUS, Singapore) Nanomaterials Synthesis and advanced functional properties for Li-ion Batteries		
09.00 – 09.30	Plenary Speaker 6 (Prof. Tatsushi Matsuyama, Soka Univ., Tokyo, Japan) Electrostatic charging of particulate materials		
09.30 – 10.00	Plenary Speaker 7 (Dr. Nobuhiro Aya, Industrial Science andTechnology (AIST), Japan) Fine Bubbles Technology		
10.00 – 10.30	Coffee Break/Poster Session		
10.30 – 11.00	Plenary Speaker 8 (Dr. Y. C. Hong, Plasma Technology Research Center, Korea) Review of Plasma Technology on Material Functionalization		
11.00 – 11.30	Plenary Speaker 9 (Prof. Dr. Heru Setyawan, ITS, Indonesia) Silica-coated magnetite nanoparticles and their application for dye removal from waste-water		
11.30 – 12.00	Plenary Speaker 10 (Dr. Ing. Oo Abdul Rosyid, Energy Technology Center, Indonesia) Comparative Performance testing of Photovoltaic Modules in Tropical Climates of Indonesia		
12.00 – 13.00	Lunch Break		
13.00 – 14.00	Parallel Session		
	ROOM A	**ROOM B**	**ROOM C**
	Material Functionalization and Energy Conservation (ME) - Moderator: Dr. Lusi Safriani	Material Functionalization and Energy Conservation (ME) - Moderator: Dr. Pramujo	Material Functionalization and Energy Conservation (ME) - Moderator: Drs. Norman Syakir, MSc.
13.00 – 13.30	INV-4: Modification of Organic Phosphor Using Inorganic-organic Hybrid Polymer as Conversion Materials for Solid State Lighting: From Its Synthesis to Application (Dr. Fitrilawati)	INV-5: Molecular Dynamics Methods: A Review on its Technological Aspect and Applications in Material Science (Dr. Yudi Rosandi)	INV-6: Phosphor: the Development and Chalenging for Lighting Applications (Dr. Camellia Panatarani)
13.30 – 13.45	The Effect of Sintering Temperature on Electrical Characteristics of Fe_2TiO_5 /Nb_2O_5 Ceramics for NTC Thermistor	The Effect of Additive Type and $LiFePO_4$ Cathode Sheet Thickness on the Lithium ion Battery Performance	Synthesis and Photocatalysis of Fe_3O_4@TiO_2 Core-Shell for Degradation of Rhodamine B
13.45 – 14.00	Cracking Callophyllum Oil to Biogasoline by Microporous Catalyst	Preparation of Biomass-based Carbon for Supercapacitor Application	Optical Properties and Photocatalytic Activities of Tungsten Oxide (WO_3) with Platinum Co-Catalyst Addition
3rd JAPAN POWDER TECHNOLOGY FORUM			
14.00 – 14.10	OPENING OC: W. Lenggoro, T. Matsuyama, (TBA)		
14.10 – 14.25	Spray Drying by M. Ohkawara, CEO of Ohkawara Kakohki Co. Ltd.		
14.25 – 14.40	Grinding Mill Powder by T. Makino, CEO, Makino Mfg Co.,Ltd.		
14.40 – 14.55	Atomizer Mill by H. Ebihara, CEO, Tokyo Atomizer M.F.G., Co.,Ltd.		
14.55 – 15.10	Classifier, Mixer, Granulator by T. Tanimoto, President, Tokuju Corporation		
15:10 – 15.25	Particle research networks at Tokyo University of Agriculture and Technology by Prof. W. Lenggoro, TUAT, Tokyo		
15.25 – 16.00	Summary and Recommendation for 3rd PIPS 2017		
16.00 – 16.30	Closing Ceremony: Best and Favorite Poster Awards		
16.30 – 16.45	Coffee Break		
18.00 – 21.00	Dinner for Invited Only (PIPS invited speaker, Japan Powder Association, Committee)		

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INV-06

Modification of Organic Phosphor using Inorganic-organic Hybrid Polymer as Conversion Materials for Solid State Lighting: from Its Synthesis to Application

Fitrilawati[1,a], Norman Syakir[1], Togar Saragi[1], Annisa Aprilia[1], Sahrul Hidayat[1], Rustam E. Siregar[1], Hendro[2], Rahmat Hidayat[2]

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Abstract. Research and development of solid state lighting (SSL) is very important path to achive a large energy saving since lighting consume a significant amount of energy. Most of commercial SSL configurations are a combination of inorganic LED with inorganic phosphor as color conversion material. Besides well known inorganic phosphor, organic phosphor also have potential application as color conversion material for SSL. Organic phosphor are well know having high quantum efficiency and low production cost, however they have limitation on their stability. In order to improve organic phosphor stability and used them for color conversion material for SSL, we develop hybrid inorganic-organic polymer based on monomer of (3-(Trimethoxysilyl) propyl methacrylate) and (3-Glycidyloxypropyl) tri methoxysilane), which have higher stability and employed it as an host matrix for organic phosphors. In order to obtain a white emision we used Nile Red, Coumarin 6, Coumarin 1, and DCM (4-(Dicyano methylene)-2-methyl-6-(4-dimethylaminostyryl)-4H-pyran) as RGB (*Red Green Blue*) organic phosphor and optimized their compositions. Some of thin film fabrication techniques such as spincoating, screen printing and spraying were employed to obtain thin film of organic phosphor. We present some results on development of organic phosphor using the hybrid polymer host matrix and some examples of their application as color conversion material in SSL configuration using direct path excitation and light wave coupling approach.

Keywords: Inorganic-organic hybrid polymer, organic phosphor, solid state lighting

Advanced

Abstract. Graphene has rec
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