

# SCIENTIFIC PROGRAMME

## 2022 International Conference on Advanced Functional Materials and Nanotechnology (ICAFMN) &

### 24<sup>th</sup> Samahang Pisika ng Visayas at Mindanao National Physics Conference

Host Universities: Mindanao State University-Iligan Institute of Technology and Holy Name University

Venue: Metrocentre Hotel and Panda Tea Garden Suites, Tagbilaran City, Bohol, Philippines

10/27/2022	Venue: Metrocentre Hotel, Tagbilaran City	
07:30-09:00	<b>REGISTRATION</b>	
09:00-10:00	<b>OPENING CEREMONIES</b>	
10:00-10:15	<b>Coffee Break</b>	
<b>PLENARY SESSION 1</b>		
10:15-10:40	<b>Prof. David N. McIlroy</b> Oklahoma State University, Oklahoma, USA <b>Topic: Enhancement of Surface Plasmon Polariton Activity/Scattering and for Metaoptics</b>	Moderator: Dr. Lyndon D. Bastatas
10:45-11:15	<b>Prof. Jason D. Slinker</b> University of Texas-Dallas, USA <b>Topic: Perovskite Light-Emitting Electrochemical Cells (Online)</b>	Moderator: Dr. Arnold C. Alguno
11:20-11:50	<b>Dr. Tanvi D. Chheda</b> Science Corps, California, USA <b>Topic: Physics Informed Neural Networks, and machine learning for physics simulation acceleration (Online)</b>	Moderator: Dr. Beverly V. Gemao
12:00-01:00	<b>LUNCH BREAK</b>	
<b>PLENARY SESSION 2</b>		
01:15-01:45	<b>Prof. Gisèle Laure Lecomte-Nana</b> University of Limoges, CEC, 12, rue Atlantis 87068 Limoges Cedex, France <b>Topic: Challenging the processing of sustainable ceramics: formulation, sintering and properties</b>	Moderator: Dr. Rolando T. Candidato, Jr.
01:50-02:20	<b>Prof. Kazuo Umemura</b> Physics Department, Tokyo University of Science, Japan <b>Topic: Microbiodevices developed via the eASIA research project</b>	Moderator: Dr. Rosario L. Reserva

02:25-02:55	<b>Prof. Dr. Is Fatimah</b> <i>Islamic University of Indonesia, Yogyakarta, Indonesia</i> <b>Topic: Development of Low-Cost Functional Materials for Green Technology in Water Treatment (Online)</b>	Moderator: Dr. Eli Christopher I. Enobio
03:00-03:15	<b>Coffee Break</b>	
03:15-03:45	<b>Prof. Chakrit Pongkitivanichkul</b> <i>Khon Kaen University, Thailand</i> <b>Topic: Axion and the Electroweak Hierarchy Problem</b>	Moderator: Dr. Jingle B. Magallanes
03:50-04:20	<b>Dr. Christopher C. Bernido</b> <i>Research Center for Theoretical Physics, Central Visayan Institute Foundation, Jagna, Bohol, Philippines</i> <b>Topic: Runaway Mutation: Critical Temperatures Spontaneously Break Symmetries Underlying Biodiversity</b>	Moderator: Dr. Mark Nolan P. Confesor
04:25-04:55	<b>Dr. German A. Clavijo-Mejia</b> <i>Center for Functional and Surface Functionalized Glass, Alexander Dubcek University of Trencin, Slovakia</i> <b>Topic: Influence of progressive additions of Bi<sub>2</sub>O<sub>3</sub> into 45S5 bioactive glass: properties and biological performance (Online)</b>	Moderator: Dr. Jose Perico H. Esguerra
06:30-10:00	<b>CONFERENCE BANQUET</b>	

## DAY 2

<b>10/28/2022</b>	Venue: Panda Tea Garden Suites, Tagbilaran City	
08:00-08:30	Physics Trivia	
<b>PLENARY SESSION 3</b>		
08:30-09:00	<b>Prof. Soyeun Park</b> <i>Keimyung University, Gaegu, South Korea</i> <b>Topic: Nano-mechanical characterization of soft matter using AFM Force spectroscopy (online)</b>	Moderator: Dr. Leo Cristobal C. Ambolode II
09:05-09:35	<b>Dr. Vallerie Ann I. Samson</b> <i>Philippines Nuclear Research Institute, Metro Manila, Philippines</i> <b>Topic: Synchrotron X-ray Microprobe Analysis in Pressurized Water Reactor (PWR) Crud Deposits</b>	Moderator: Dr. Catherine Therese J. Quiñones
09:35-10:00	<b>CEREMONIAL OPENING of POSTER EXHIBITS</b>	
10:00-10:15	<b>Coffee Break</b>	

**PARALLEL SESSIONS 1**

Time & Venue	<p align="center"><b>ROOM A</b> <b>2022 ICAFMN</b></p> <p align="center"><b>Moderator:</b> <b>Dr. Arnold C. Alguno</b></p>	<p align="center"><b>ROOM B</b> <i>Materials Science and Engineering, Photonics</i></p> <p align="center"><b>Moderator:</b> <b>Dr. Noel Lito B. Sayson</b></p>	<p align="center"><b>ROOM C</b> <i>Theoretical, Computational, and Applied Physics</i></p> <p align="center"><b>Moderator:</b> <b>Dr. Jingle B. Magallanes</b></p>	<p align="center"><b>ROOM D</b> <i>Complex Systems, Soft Matter, Biophysics, Medical Physics</i></p> <p align="center"><b>Moderator:</b> <b>Dr. Catherine Therese J. Quiñones</b></p>	<p align="center"><b>ROOM E</b> <b>2022 ICAFMN</b></p> <p align="center"><b>Moderator:</b> <b>Dr. Reynaldo M. Vequizo</b></p>
10:15-10:35	<p align="center"><b>A novel radiation detector based on Gd<sub>2</sub>O<sub>3</sub> doped organic semiconductor</b> <b><u>E. Fukasawa</u></b>, H. Miyata, E. Miyata, M. Katsumata, H. Sato, H. Ono, M. Watanabe, E. Saito, Y. Seino, A. Umeyama, M. Sato, M. Tamura, T. Suzuki</p>	<p align="center"><b>Transmitted intensity response of the Crisscrossed Coupled-Ring Reflector (X-CRR) under the ‘slow-light’ cross-coupling parameter conditions</b> <b><u>Avram J. Gutierrez</u></b>, Benjamin B. Dingel, Amante Joshua Jr. Dumalus, Wayne Jasper Sy, John Gabriel Rivera and Clint Dominic G. Bennett</p>	<p align="center"><b>An Analytical Investigation of a Modified Burgers’ Equation</b> <b><u>Yoj Ynnel G. Gaviola</u></b> and Benjamin B. Dingel</p>	<p align="center"><b>Lungs-Heart Coupling: dynamics of heartbeat under the influence of periodic respiration</b> <b><u>Mhar Ian Estayan</u></b>, Joseph Ian Abenilla, Shuan Ni Liang, Eric John Marayag</p>	<p align="center"><b>Green Synthesis of Ag Nanostructures for SERS applications</b> <b><u>Luce Vida A. Sayson</u></b> and Michelle D. Regulacio</p>
10:40-11:00	<p align="center"><b>Study on the long-term stability of the hybrid semiconductor radiation detector</b> <b><u>E. Miyata</u></b>, H. Miyata, E. Fukasawa, M. Katsumata, H. Sato, H. Ono, M. Watanabe, E. Saito, Y. Seino, A. Umeyama, M. Sato, T. Suzuki, M. Tamura</p>	<p align="center"><b>Proposed Hybrid Typical-Coupled and Directional Cross-Coupled-Based Optical Microring Resonator Configurations</b> <b><u>Maxine Ysabel L. Sanchez</u></b>, Kent C. Soria, Benjamin B. Dingel, and Gabriel Joseph D. Plata</p>	<p align="center"><b>Raindrop size distribution (DSD) characteristics of tropical cyclones and mesoscale convective systems in Luzon, Philippines using Disdrometer observations</b> <b><u>Marco Polo A. Ibanez</u></b>, Alvin G. Pura, Ramjun A. Sajulga</p>	<p align="center"><b>Monte Carlo Simulation of Proton Beams in Tissue-mimicking Phantoms using Particle and Heavy Ion Transport Code System (PHITS)</b> <b><u>Jay Erickson Tio</u></b> and Xander Andre B. Magtibay</p>	<p align="center"><b>Density Functional Theory Studies on Potential Singlet Fission Materials for Photovoltaic Applications</b> <b><u>Donnie R. Moradas</u></b>, Francis Kirby B. Burnea</p>
11:05-11:25	<p align="center"><b>Influence of shortened hydrothermal exposure on the properties of tomato (<i>Solanum lycopersicum L.</i>) based carbon quantum dots</b> <b><u>Aldrin A. Tan</u></b>, Restituto M. Cortez Jr., Marlon T. Conato</p>	<p align="center"><b>Monte Carlo simulation of <sup>137</sup>Cs ray irradiation effects in lead free Sn-Zn-Bi alloys using SRIM program</b> <b><u>Norika Marni A. Ilagan</u></b>, Marinell B. Palangao</p>	<p align="center"><b>Second-Order Derivative Disformal Transformation of the Primordial Cosmological Perturbations</b> <b><u>Allan L. Alinea</u></b> and Jeneil Owen S. Aquino</p>	<p align="center"><b>Reversibility in NESS as measure of distance from equilibrium</b> <b><u>Michael Jade Y. Jerez</u></b>, Mike A. Bonachita and Mark Nolan P. Confesor</p>	<p align="center"><b>Fully bio-based polyol from coconut fatty acid distillate (CFAD) and crude glycerol for rigid foam application</b> <b><u>Ma. Louella D. Salcedo</u></b>, Anthony O. Maputi, Amierson C. Tilendo, Dave Joseph E. Estrada, Renz John R. Estrada, Christine Joy M. Omisol, Blessy Joy M. Aguinid, Arnold A. Lubguban, Roberto M. Malaluan</p>
11:30-11:50	<p align="center"><b>Synthesis and characterization of biopolyglycerol polyester polyol for thermoplastic polyurethane production</b> <b><u>Mike Jhun P. Calderon</u></b>, Arnold A. Lubguban, Roberto M. Malaluan</p>	<p align="center"><b>Non-covalent Functionalization of Biphenylene Network by Nylon-6 and Cellulose Biopolymer: A First-principles Study</b> <b><u>Art Anthony Z. Munio</u></b> and Leo Cristobal C. Ambolode II</p>	<p align="center"><b>Form Factor Determination and Proton Radius Calculation using dcs<sub>ep</sub> Quark Models from MaMi Scattering Experiment</b> <b><u>Jade C. Jusoy</u></b>, Jingle B. Magallanes, Rene Luna-Garcia</p>	<p align="center"><b>Traffic Density Estimation using Stochastic Noise Analysis of Vehicle Speed Fluctuations</b> <b><u>Anwar Zeus S. Pattuinan</u></b> and Renante R. Violanda</p>	<p align="center"><b>Anti-corrosion properties of Polyaniline/Polyurethane composite coatings on mild steel using cocopol blend polyols</b> <b><u>Marijune T. Bonilla</u></b>, Archie G. Ruda, Dave Joseph E. Estrada, Kurt Sterling M. Ubas, Aaron Andrew B. Mutia, Lloyd Allan T. Cabañog, Arnold A. Lubguban, Rey Y. Capangpangan, Joselito P. Labis, and Arnold C. Alguno</p>

12:00-01:00	<b>LUNCH BREAK</b>	
<b>PLENARY SESSION 4</b>		
12:45-01:15	<b>Coffee Table Discussions in honor of Dr. Maria Victoria Carpio-Bernido for her Legacy in Science Education in the Philippines</b>	
01:15-01:45	<b>Dr. Jose Perico H. Esguerra</b> <i>National Institute of Physics, University of the Philippines, Quezon City, Philippines</i> <b>Topic: One Long Week: Learnings from the Philippine Participation in the International Physics Olympiads</b>	Moderator: Dr. Mariquit P. Obrero
01:50-02:50	<b>Dr. Mark Nolan P. Confesor</b> <i>Mindanao State University - Iligan Institute of Technology, Iligan City, Philippines</i> <b>Topic: Confronting the Educational Crisis of the Philippines: How SPVM can contribute solutions</b>	Moderator: Dr. Reynaldo M. Vequizo
02:55-3:10	<b>Coffee Break</b>	

<b>PARALLEL SESSIONS 2</b>					
<b>Time &amp; Venue</b>	<b>ROOM A 2022 ICAFMN</b>  Moderator: Dr. Rolando T. Candidato, Jr.	<b>ROOM B</b> <i>Materials Science and Engineering, Photonics</i>  Moderator: Dr. Lyndon D. Bastatas	<b>ROOM C</b> <i>Theoretical, Computational, and Applied Physics</i>  Moderator: Dr. Eli Christopher I. Enobio	<b>ROOM D</b> <i>Complex Systems, Soft Matter, Biophysics, Medical Physics</i>  Moderator: Abdulrajan Lintasan	<b>ROOM E</b> <i>Physics Education, Concepts and Demonstrations</i>  Moderator: Jick Balinario
03:10-03:30	Enhanced carrier dynamics of a photo-irradiated ZnO/Si heterojunction under UV light <u>Jose Presiphil B. Ontolan Jr.</u> , Junie Jhon M. Vequizo, Akira Yamakata, and Reynaldo M. Vequizo	Beam profile modification via photorefractive volume holographic polarization <u>Aviel Sheen V. Dumaicos</u> and Raphael A. Guerrero	Phase-space White Noise Analysis of Quantum Particle in a Velocity-dependent Potential <u>Alviu Rey bin Nasir</u> and Jingle B. Magallanes	Mutual information and Kuramoto order parameter as synchronization quantifiers in multiple intruders simultaneously impacting and moving through granular media Asma S. Abubacar and <u>Mergebelle D. Dengal</u>	<b>Smartphone-as-a-Laboratory:</b> <b>A low-cost method to demonstrate special relativity's relativistic aberration of light using a circuit analogue with a wireless system for acquisition</b> <u>Samuel C. Martirez Jr.</u> , Christine Shayne Venancio, John Gabriel C. Rivera, Benjamin B. Dingel, Daniel Kristofer Goco, Perine Nyssa Bianzon, and Clint Dominic Bennett

03:35-03:55	<p><b>Development and Characterization of Epoxy/Banana Pseudo-Stem Nanocellulose (BPNC) Composites as Anti-Corrosion Coatings on Mild Steel</b>  <u>Kurt Sterling M. Ubas</u>, Jessalyn C. Grumo, Archie G. Ruda, Marjune T. Bonilla, Aaron Andrew B. Mutia, Lloyd Allan T. Cabañog, Joselito P. Labis and Arnold C. Alguno</p>	<p><b>Modelling the emission behavior of 1D and 2D quantum emitters in a multilayer metallic system</b>  <u>Leo Miguel M. Santiago</u> and Lean L. Dasallas</p>	<p><b>Probing the natural patterns of a superhydrophobic leaf via soft lithography and its potential for electrowetting-on-dielectric application</b>  <u>Marco Laurence M. Budlayan</u>, Jonathan N. Patriciob,c, Susan D. Arcoc, Raphael A. Guerrero</p>	<p><b>Dynamics of Ratchet Gears in Active Bath</b>  <u>Maria Christine M. Lugo</u>, Khate Cheryl C. Bayer, Sheila G. Gonzales and Mark Nolan P. Confesor</p>	<p><b>Demonstration of electronic circuit analogue of Superluminal / Subluminal phenomena capable of demonstrating continuous tuning from negative to positive range using an Op-Amp Circuit</b>  <u>Ramon Benedict Lapiña</u>, Benjamin B. Dingel, Nicolas Ferry and Clint Dominic Bennett</p>
04:00-04:20	<p><b>Sunlight-Mediated Synthesis of Metallic Silver Nanoparticles With Coffee Pulp Aqueous Extract for Hg<sup>2+</sup> ion Detection</b>  <u>Jose Paolo O. Bantang</u>, Rhujielane Khim Abadiano, Kimberly P. Viron, Charisse T. Tugahan, Zailla F. Payag, Drexel H. Camacho, Gil Nonato C. Santos, &amp; Julius L. Leaño, Jr.</p>	<p><b>Correlation of FTIR molecular structure to mechanical properties of unvulcanized rubber sheets</b>  <u>Hana Shenne H. Patangan</u> and Reynaldo M. Vequizo</p>	<p><b>Noise Classification Using Sound Monitoring, Assessment, and Recording Tool for Environmental Acoustic Research (SMART-EAR)</b>  <u>Carl Kevin L. Mirhan</u>, Ricky Jonathan Fornis, Renante R. Violanda</p>	<p><b>Preparation of microalgae cultivation feedstock using oil palm waste – empty fruit bunches and rice straw waste for biofuel production</b>  <u>Princess Dhanniechelle D. Natividad</u>, Erika B. Luna, Thea Eliza T. Tumacas, Bealyn M. Oliveros, John Yehshua H. Manzon, Daniel Angelito G. Hernandez, Nur Ahmad Zaim Hussin, Makoto Togami, Tiara Nur Pratiwi, Julienne Stephanie Agapin</p>	<p><b>Refinement of the ‘radioactive’ dice experiment for Physics laboratory class</b>  <u>Mark Aldrin A. Valencia</u>, Allan L. Alinea, Mark Ruel D. Chua</p>
04:25-04:45	<p><b>Synthesis, characterization and fabrication of TiO<sub>2</sub>-polyurethane cocopol blend nanocomposites for anti-corrosion coatings on mild steel</b>  <u>Archie G. Ruda</u>, Marjune T. Bonilla, Kurt Sterling M Ubas, Dave Joseph E. Estrada, Rey Y Capampangan, Rey Marc T. Cumba, Joselito Labis, Arnold C. Alguno</p>	<p><b>Shielding efficiency of WC-LiBH<sub>4</sub>-SBR, LiBH<sub>4</sub>/Al/LiBH<sub>4</sub> and Al/LiBH<sub>4</sub>/Al as low earth orbit satellite shielding materials</b>  <u>Ronah C. Rollan</u>, Alleah S. Garzon, and Rhenish C. Simon</p>	<p><b>Cloud properties of heavy rainfall during Amihan and Habagat over Bicol Region</b>  <u>Jason P. Punay</u>, Chian-Yi Liu, Marie Deanne Lou J. Barredo, Maree Merrogel Vernalu V. Molina, Ariane Liezl R. Sison</p>	<p><b>Determining the population dynamics of <i>Nilaparvata lugens</i> and <i>Anagrus nilaparvatae</i> using a Lotka-Volterra model with a logistic prey growth rate</b>  <u>Sean Aldrich N. Rebuyas</u>, Alyssa P. Umbar, Mikaela Victoria C. Masusi, Shiuan-Ni Liang, Erica Silk P. dela Paz, Mhar Ian C. Estayan</p>	<p><b>Learning Interventions in Science Education and their Effectiveness in Enhancing Students’ Scientific Creativity: A Meta-analysis</b>  <u>Fredyrose Ivan L. Pinar</u>, Albert Andry E. Panergayo, Richard Sagcal, Maricar S. Prudente, Lydia S. Roleda</p>

# DAY 3

10/29/2022 Venue: Panda Tea Garden Suites, Tagbilaran City

08:00-08:30 Physics Trivia

## PARALLEL SESSIONS 3

Time & Venue	ROOM A 2022 ICAFMN  Moderator: Dr. Leo Cristobal C. Ambolode II	ROOM B <i>Materials Science and Engineering, Photonics</i>  Moderator: Gilbert M. Poralan, Jr.	ROOM C <i>Theoretical, Computational, and Applied Physics</i>  Moderator: Dennis C. Arogancia	ROOM D <i>Complex Systems, Soft Matter, Biophysics, Medical Physics</i>  Moderator: Dr. Beverly V. Gemao	ROOM E <i>Physics Education, Concepts and Demonstrations</i>  Moderator: Dr. Minerva Galabay
08:30-08:50	<p>Monte Carlo simulation study on the depth-dose distribution of thermoplastic reinforced composites for potential applications in external beam radiotherapy <u>Vanessa V. Destura</u>, Catherine Therese J. Quiñones, Reynaldo M. Vequizo</p>	<p>A comparative study on different extraction methods of naturally derived Hydroxyapatite (HAp) from Tilapia (<i>T. nilotica</i>) scales <u>Judd Christian F. Banas</u>, Marie Louise N. Joven, Raine Beatrice E. Piccio, Maria Christine M. Lugo</p>	<p>Numerical simulations of heavy rainfall and streamflow over the Talomo river in Davao City: A baseline study for the development of a numerical weather prediction-based flood forecasting system <u>Rochelle C. Coronel</u>, Ma. Catherine S. Lagare, Danica A. Loqueloque, Francia B. Avila, Joseph E. Acosta</p>	<p>Probing non-equilibrium dynamics of Physarum plasmodia <u>Jae Lord Dexter C. Filipinas</u>, Michael Jade Y. Jerez and Mark Nolan P. Confesor</p>	<p>Fostering climate change education through physics of colors with the aid of machine learning and artificial intelligence: A transdisciplinary STEM education approach <u>Dharel P. Acut</u></p>
08:55-09:15	<p>A new reaction route for the synthesis of coconut oil-derived biopolyol for rigid poly(urethane-urea) hybrid foam application <u>Roger G. Dingcong, Jr.</u>, Dave Joseph E. Estrada, Roberto M. Malaluan, Arnold A. Lubguban</p>	<p>Batch and fixed-bed adsorption dynamics of methylene blue from aqueous solution using polyurethane-activated carbon composites adsorbents <u>Renz John R. Estrada</u>, Roberto M. Malaluan, Arnold A. Lubguban</p>	<p>SRIM simulation of graphene synthesis on copper foils through carbon ion implantation <u>Redemptor C. Lictaoa, Jr.</u> and Jeffrey D. Tare</p>	<p>Calculation of Dose on a Water Phantom Inserted with Polymethylmethacrylate (PMMA) Material Using Monte Carlo Codes <u>Hermogenes C. Gooch, Jr.</u>, Salasa A. Nawang, Angelina M. Bacala, Takashi Sasaki, Akinori Kimura</p>	<p>3D Printed based Floater with Wireless Pressure Sensor as Teaching-Learning Tool for Pressure-Depth Experiment <u>Benito A. Baje</u>, Gencianus Alphonsus D. Retardo, Arlene Cahoy Agosto, Eugene J. Verano, Ro-ann S. Laude, Rey Y. Capangpangan</p>
09:20-09:40	<p>Effect of regulating the silver nitrate solution on the growth of honey mediated silver nanoparticles via green synthesis for antibacterial application <u>Aaron Andrew B. Mutia</u>, Rey Marc T. Cumba, Archie G. Ruda, Marjune T. Bonilla, Kurt Sterling M. Ubas, Lloyd Allan T. Cabañog, Rey Y. Capangpangan, Joselito P. Labis, and Arnold C. Alguno</p>	<p>SRIM simulation of copper and silver ion interaction with polylactic acid (PLA) <u>Alyssa L. Grantusa</u> and Ryan U. Olivares</p>	<p>A computational study on nanothread-cellulose nanocomposite <u>Jaylord C. Veloso</u> and Leo Cristobal C. Ambolode II</p>	<p>Kinetic energy of secondary particles produced from various particle interactions: A Monte Carlo study <u>Elaine Loraine P. Rivera</u>, Dainna Recel S. Pamisa, Catherine Therese J. Quiñones</p>	<p>Determination of home-made granola bar breakage limit due to compressive stress using wireless force sensors <u>Francis Murillo Emralino</u> and Trixie Bayer Fatal</p>



09:45-10:00	<b>Coffee Break</b>
10:00-11:00	<b>CLOSING CEREMONIES</b>
11:00-12:00	<b>LUNCH</b>
01:00-05:00	<b>CONFERENCE TOUR</b>

## 2022 International Conference on Advanced Functional Materials and Nanotechnology: Poster Presentations

<b>1</b>	<b>a-Si EPID modeling in GATE for Monte Carlo investigation on the dosimetry and optical properties of <math>Gd_2O_3:Tb</math> and <math>Lu_2SiO_5:Ce</math> scintillators</b> Dainna Recel S. Pamisa, Catherine Therese J. Quiñones
<b>2</b>	<b>Application of random forest in cytotoxicity dichotomous classification prediction of nanoparticles</b> Farley G. Bondaug, Aries P. Valeriano, Irelie P. Ebarido, Phoebe A. Sombilon, Gabriel C. Engcong, John Riz V. Bagnol, Mary Joy R. Latayad, Jay Michael R. Macalalag, Brian Dominic J. Paradero, Maricris L. Mayes, Mannix P. Balanay, Arnold C. Alguno and Rey Y. Capangpangan
<b>3</b>	<b>Atomic force microscopy characterization of polyacrylamide substrate for traction force application</b> Rosario L. Reserva, Shusuke Ohura, Daisuke Miyashiro, Mark Nolan P. Confesor and Kazuo Umemura
<b>4</b>	<b>Biological extraction and characterization of chitin biopolymer from local bangus (<i>Chanos chanos</i>) and tilapia (<i>Oreochromis niloticus</i>) fish scales waste</b> Nika L. Pareja, Doris B. Montecastro and Antonio M. Basilio
<b>5</b>	<b>Capture and Detection of Arsenic Using Cellulose Biopolymer: A First-principles Study</b> Art Anthony Z. Munio, Alfredo Q. Liboon, Jr., Alvanh Alem G. Pido, and Leo Cristobal C. Ambolode II
<b>6</b>	<b>Design Methodology of a Voltage Bandgap Reference with High PSRR in Advanced Technology Nodes for LDO Application</b> Robert Leemar M. Bagundol, Jefferson A. Hora, Emrys Leowhel Oling
<b>7</b>	<b>DFT study on electronic properties of gas- and metal-adsorbed divacancy-defected SWCNTs</b> Diamond C. Domato, Kim S. Ponce, Leo Cristobal C. Ambolode II
<b>8</b>	<b>Exploring the Potential Energy Surface of the Identity <math>S_N2</math> Reactions of Halide Anions with Methyl Halides</b> Miguel Angelito T. Lacasan, Marvin Jose F. Fernandez
<b>9</b>	<b>Fabrication of polyurethane-modified concrete with zinc oxide nanoparticles using cocopol blend polyols</b> Renzo Miguel R. Hisona, Arnold C. Alguno, Arnold A. Lubguban, Roberto M. Malaluan, and Noel Lito B. Sayson
<b>10</b>	<b>First-principles study of optical properties of SWCNT/Cellulose</b> Naomi Jane Jacosalem-Laguna, Art Anthony Z. Munio, Maria Theresa Mae M. Micompal, Daisy Shane L. Atayan, Leo Cristobal C. Ambolode II
<b>11</b>	<b>Hunting monolayer graphene: How does the thickness affect the raman spectra of graphene?</b> John Paul J. Aseniero, Ariel Jorge F. Payot, Horace Andrew F. Husay, Arnel A. Salvador, Eduardo R. Magdaluyo Jr., Karim M. Omambac, Cyril S. Salang

12	<b><i>In Silico</i> Nano-QSAR Toxicity Classification by Support Vector Machine</b> Kryzze Lee T. Serot, John Riz V. Bagnol, Farley G. Bondaug, Phoebe A. Sombilon, Irelië P. Ebarido, Gabriel C. Engcong, Aries P. Valeriano, Rey Y. Capangpangan
13	<b>Influence of Fe ions on the micro-structural characteristics sol-gel prepared TiO<sub>2</sub> particles</b> Niziel D. Tagdulang, Romnick Unabia and Rolando T. Candidato Jr.
14	<b>Influence of the sizes of gold nanoparticles on its colorimetric sensing for chicken meat spoilage detection</b> Rolen Brian P. Rivera, Noel Lito B. Sayson, Arnold A. Lubguban, Roberto M. Malaluan, Gaudencio C. Petalcorin, Jr., Rey Y. Capangpangan, Felmer S. Latayada, Arnold C. Alguno
15	<b>Magnetron sputtered and microwave-assisted thin film deposition</b> Michelle Marie S. Villamayor
16	<b>Micro-structural analysis of solution precursor plasma sprayed Fe-added TiO<sub>2</sub> coatings</b> Key T. Simfroso, Romnick B. Unabia, Shena Ramyr S. Cabo, Angelito Britos, Paweł Sokołowski, Rolando T. Candidato, Jr.
17	<b>Monte Carlo study of the gamma yield of various scintillating crystals in a simple Positron Emission Tomography (PET) system</b> John Jebert Joshua T. Rebuta and Catherine Therese J. Quiñones
18	<b>On cytotoxicity classification of nanoparticles via regularized regression models</b> Aries P. Valeriano, Farley G. Bondaug, Irelië P. Ebarido, Phoebe A. Sombilon, Gabriel C. Engcong, John Riz V. Bagnol, Mary Joy R. Latayada, Jay Michael R. Macalalag, Brian Dominic J. Paradero, Maricris L. Mayes, Mannix P. Balanay, Arnold C. Alguno and Rey Y. Capangpangan
19	<b>Periodic Calculations of Structural and Electronic Properties of Pristine and Alkali Metal (Na, Li, K)-Doped Polypyrrole using Density Functional Theory</b> Prudence Peace V. Bustamante, Irmalyn B. Paymalan
20	<b>Photoluminescence of GaAs with varying temperature</b> Johndell C. Canata, Florencio D. Recoleta, Jr.
21	<b>Preliminary study on the optical characteristics of SWCNT hybrids dispersed using cellulose extracted from corn husk and coconut coir</b> Aries Mae P. Calam, Rolando T. Candidato, Jr., Yuki Ide and Kazuo Umemura
22	<b>Synthesis and characterization of poly(urea)urethane hybrid coating derived from coconut oil-based polyester polyol for anti-corrosion application</b> Dave Joseph E. Estrada, Amierson C. Tilendo, Gerard G. Dumancas, Roberto M. Malaluan, Cyrene F. Caramba, Adams J. Fajardo, Giselle A. Lisondra, Arnold C. Alguno, and Arnold A. Lubguban
23	<b>Synthesis of a hydroxyl-terminated prepolymer via direct amidation of coconut oil with sequential prepolymerization</b> Louell Nikki A. Hipulan, Roger G. Dingcong, Jr., Dave Joseph E. Estrada, Arnold A. Lubguban, Roberto M. Malaluan, and Hernando P. Bacosa
24	<b>Synthesis of Urea-doped carbon quantum dots from Guava (<i>Psidium guajava</i>) leaf extract via microwave-assisted approach</b> Restituto M. Cortez, Jr., Aldrin A. Tan, Jose Emmanuel L. Camacho, Rhea G. Abisado-Duque, Marlon T. Conato
25	<b>The effect of synthesis temperature on the size distribution of silver nanoparticles synthesized using <i>Psidium guajava</i> and its antibacterial activity</b> Lloyd Allan T. Cabañog, Rey Marc T. Cumba, Melania G. Enot, Joselito Labis, Aaron Andrew Mutia, Kurt Sterling Ubas, Marjune Bonilla, Archie Ruda, Rey Y. Capangpangan, and Arnold C. Alguno



26	<b>Thermal Stability of Synthesized Cellulose Nanocrystals from Water Hyacinth (<i>Eichhornia crassipes</i>) Stem Fibers</b> Mark Angelou M. Siega and Crijamaica Oceña
27	<b>Understanding the Effect of Traps in Light Emitting Electrochemical Cells</b> Lyndon D. Bastatas, Noel Lito B. Sayson, Cresente O. Cabahug, Jason D. Slinker
28	<b>Understanding the Synergetic Interaction of Graphene-Oxide and Calcium-Silicate-Hydrates (C-S-H) Nanocomposite: <i>Ab Initio</i> Study</b> Art Anthony Z. Munio, Alfredo Q. Liboon, Jr. and Leo Cristobal C. Ambolode II

## 24<sup>th</sup> SPVM National Physics Conference: Poster Presentations

### Materials Science, Engineering and Photonics

1	<b>Air spraying of TiO<sub>2</sub> particles suspended in a polymeric solution</b> Angelito V. Britos, Key T. Simfroso, Dave Joseph Estrada, Noel Lito B. Sayson, and Rolando T. Candidato, Jr.
2	<b>Batch Adsorption Studies on Coconut Oil-based Polyurethane Foam-Activated Carbon Composite for Lead Sequestration in Aqueous Media Detected Using UV-Visible Spectroscopy Technique</b> Rubie Mae D. Fernandez, Tomas Ralph B. Tomon, Renz John R. Estrada, Shashwa M. Usop, Ruben F. Amparado, Rey Y. Capangpangan, Roberto M. Malaluan, Arnold A. Lubguban, and Hernando P. Bacosa
3	<b>Electrical and optical characterization of graphite-ZnO conductive paint</b> Jamaica F. Cabahug, Kimberly S. Carangcarang, Jess E. Gambe
4	<b>Fabrication of Au/SWCNT/Au Schottky Junction using Dry Film Pholithography</b> James H. Probitso and Eli Christopher I. Enobio
5	<b>Fabrication of porous clay ceramics material; substrate for slow-release fertilizer</b> Kenneth P. Tutong, Kimberly S. Carangcarang, Dave Joseph E. Estrada and Jess E. Gambe
6	<b>Functionalization of AC-Au Nanocomposites as Potential Nanomaterial for the Photocatalytic Activity of Methylene Blue</b> Jaycel Mae A. Embay, Rey Marc T. Cumba, and Angeline M. Atacador
7	<b>I-V characterization of Au/SWCNT/Au Schottky Junction fabricated using dry film photolithography</b> Cristine Ruvy D. Mahilom, James H. Probitso and Eli Christopher I. Enobio
8	<b>Influence of Nipa Sap to Biomass Ratio and Commercial <i>S. cerevisiae</i> in the Production of Bioethanol Using Spectral Absorption Measurement</b> Christia Marie C. Bacus, Ferdinand Michael B. Calo, Jr., and Romnick G. Unabia
9	<b>Investigation of shielding properties of nuclear radiation protective materials using the SRIM software</b> Anjella Marri Leal, Marinell B. Palangao, and Jeffrey D. Tare
10	<b>Maize – based composite films: functional group correlation to mechanical properties</b> Maria Teresa A. Batocael and Reynaldo M. Vequizo
11	<b>Multi-layering of Dry Film Photoresist without Air Bubble</b> Dulce I. Mondoñedo, James H. Probitso and Eli Christopher I. Enobio
12	<b>Nutrient Release of NPK-dipped Porous Ceramics</b> Mark Neil Ungab, Kimberly Carangcarang, Dave Joseph E. Estrada, and Jess E. Gambe
13	<b>Observation of more than one direct optical transitions of polyaniline films on glass and on Si(100)</b> Husney Amenodin, Richelle Vacalares, Jose Presiphil Ontolan Jr., Junie Jhon Vequizo, Akira Yamakata, Reynaldo Vequizo

14	<b>Physico-chemical properties of <i>Manihot esculenta</i>-based composite film</b> Jujen P. Bacotot and Reynaldo M. Vequizo
15	<b>Properties of aniline dimer, 4-ADA, electrodeposited on ITO</b> Pretty Rose M. Pongcol, Richelle B. Vacalares, Reynaldo M. Vequizo and Majvell Kay O. Vequizo
16	<b>Properties of electrochemically grown polyaniline on ITO</b> Christian Jay I. Latao, Richelle B. Vacalares, Reynaldo M. Vequizo and Majvell Kay O. Vequizo
17	<b>Synthesis of AC/Ag nanocomposites as potential nanophotocatalyst for the removal of organic dyes under UV light irradiation</b> Phoebe Marie V. Matulin, Angeline M. Atacador, and Rey Marc T. Cumba
18	<b>Synthesis of biopolymer from rotten <i>Mangifera indica</i> fruit for local industrial polymer production</b> An – nisaa M. Chua, Adrian Pierre B. Aguilin, Daniel Angelito G. Hernandez
19	<b>The Effect of Coco-Shell Based Activated Carbon in Hexavalent Chromium Sequestration of Polyurethane Foam: A Batch Adsorption Experiment</b> Tomas Ralph B. Tomon, Rey Y. Capangpangan, Arnold A. Lubguban, Jaime Q. Guihawan, and Hernando P. Bacosa
20	<b>Water quality index and filtration from activated carbon using oil palm empty fruit bunches</b> Emman Nicholas Blabe B. Idulsa, Jelsey Mei T. Tan, Daniel Angelito G. Hernandez

### Theoretical, Computational and Applied Physics

1	<b>A Stochastic Dynamical System Approach in Forecasting Seismic Signal of an Earthquake in Agusan Del Sur Region</b> Teotima Evangelista Gorres
2	<b>Characterizing the Energy Use of an Academic Building Using Building Performance Simulations: A Case Study of Cebu Technological University, Moalboal Campus, Graduate School Building</b> Limic M. de la Calzada II, Mark Anthony Cabilo
3	<b>Entrance and Exit Counter Security System</b> Celestino A. Quirante III
4	<b>Investigation on the relationship of turbidity and grayscale level of dyed water samples using IR laser distance measurement sensor</b> Dashiel Lorenz M. Ruelos and Ricardo Narandan
5	<b>Measuring the absolute magnitude and distance of the cepheid variable zeta-star-in-gemini using a DSLR camera</b> Hanz Carlo S. Quijano and Allan L. Alinea
6	<b>Optimal conditions for launching a manned spacecraft into orbit using the spin launch system: a preliminary study</b> Joven M. Galliguez, Allan L. Alinea, and Cedrix Jake C. Jadrin
7	<b>Temperature and relative humidity patterns in scattered Barangays of Dumaguete City</b> Giselle Ann A. Alvarez, Carlito C. Garcia, Jr., Merlie Deal Wasawas, Nasheva V. Hassan, Donabella A. Dionaldo, Nineveeh C. Gomez, Michael M. Cataluña, Jossa Teves and Dan Ryan Gutierrez
8	<b>A preliminary study of <math>pp \rightarrow Z'_{B-L} \rightarrow t\bar{t}H, H \rightarrow \tau^+\tau^-</math> at FCC-hh</b> Jurdel N. Gallano, Venus Abbeгаile S. Carbonel, Marlon P. Brade, Dennis C. Arogancia and Jan Mickelle V. Maratasa

9	<b>A study of <math>pp \rightarrow Z'_{B-L} \rightarrow t\bar{t}H, H \rightarrow b\bar{b}</math> at the Future Circular Collider</b> Venus Abbeaile S. Carbonel, Jurdel Gallano, Marlon P. Brade, Dennis C. Arogancia, and Jan Mickelle V. Maratas
10	<b>Bounds reach of a future circular collider on the parameters of a minimal B-L symmetric model</b> Marlon P. Brade, Jeremiah D. Juevesano, Pauline May Amethyst G. Salise, Dennis C. Arogancia, and Jan Mickelle V. Maratas
11	<b>Density Functional Theory Studies of Carbon Nanotube - Cellulose Nanocrystals Hybrids</b> Marie Carmel M. Micompal and Leo Cristobal C. Ambolode II
12	<b>DFT Study of the NMR Parameters of Bi@SWCNT Sytem</b> Ariel R. Balinas and Leo Cristobal C. Ambolode II
13	<b>Dose reduction enhancement using a sandwiched bolus on the exit-depth-dose accumulation due to electron return effect: A Monte Carlo Study</b> Jana Raye F. Gesulga, Conrado T. Yocor, Jr., and Salasa A. Nawang
14	<b>On the energy loss of alpha and proton particles</b> Ellen Mae E. Salvacion, Renna Mae V. Tondo and Salasa A. Nawang
15	<b>Partial reconstruction study of <math>\frac{B(B^0 \rightarrow J/\psi(\mu^- \mu^+) \eta'(\eta \pi^+ \pi^-))}{B(B_s \rightarrow J/\psi(\mu^- \mu^+) \eta(\pi^0 \pi^+ \pi^-))}</math> at FCC</b> Jeremiah D. Juevesano and Jan Mickelle V. Maratas
16	<b>Simulating a laser heatsink design made from aluminum and copper using FEATool</b> Ammiel S. Majan, Mary Diane A. Pilapil, Rommel G. Bacabac
17	<b>SRIM simulation of ion beam irradiation effects on oxide thin films</b> Chris Wilfred S. Estrada and Jeffrey D. Tare
18	<b>Uncertainty calculation of <math>B_0^s</math> semileptonic asymmetry at a high-luminosity Z factory</b> Dennis C. Arogancia, Jan Mickelle V. Maratasa and Stephane Monteil
19	<b>Clustering Coefficient of Incomplete Watts-Strogatz Networks</b> David Paul M. Jinayon and Beverly V. Gemao
20	<b>Elastic ep scattering dcs fitting via the modified Rutherford Scattering dcs</b> Marsden I. Badlisan, Jade C. Jusoy, Vincent Victor D. Velasco, and Jingle B. Magallanes
21	<b>Monte Carlo simulation of probability distribution of a linear homopolymer with k=2 coincidences: the fBm Edwards model</b> Roshin Marielle N. Britos, Jinky B. Bornales, and Beverly V. Gemao
22	<b>Phase-space White Noise Analysis Application in One-dimensional Erosion</b> Alviu Rey bin Nasir and Jingle B. Magallanes
23	<b>Phase-Space White Noise Analysis of the Quantum Particle in an Exponentially-Growing Potential</b> Alviu Rey bin Nasir and Jingle B. Magallanes

## Complex Systems, Soft Matter, Biophysics, Medical Physics

1	<b>Distance from equilibrium measurement of a NESS</b> Emil Vincent P. Llanes, Michael Jade Y. Jerez, Mark Nolan P. Confesor
2	<b>Dynamics of Active Diffusion-Limited Aggregation</b> Niccolo Anton D. Padro and Mark Nolan P. Confesor
3	<b>Reconstructing double well potentials via driving</b> Romie Seth E. Florida, Michael Jade Y. Jerez and Mark Nolan P. Confesor
4	<b>Single vs. multiple bouncing balls on a vibrating fluid surface: Differences in translational and rotational dynamics</b> Mira Luna T. Timosa, Mergebelle D. Dengal, and Adones B. Dengal
5	<b>The Impact of War in Ukraine on the Efficiency of International Crude Oil Market</b> Virginio C. Torlao and Harvey M. Niere
6	<b>Time-resolved transfer entropy dynamics between particle heading deviations in simulated active matter flocks</b> Ronald B. Claros and Mergebelle D. Dengal
7	<b>A method for in-vivo dosimetry using an electronic portal imaging device</b> Dainna Recel S. Pamisa and Catherine Therese J. Quiñones
8	<b>Depletion-like interactions in an active granular bath</b> Nathaniel B. Dimaocor, Kathleen C. Mendoza, and Mark Nolan P. Confesor
9	<b>Determination of an Institutional Diagnostic Reference Level (DRL) for 16-slice and 128-slice Computed Tomography (CT) Scanner in a Tertiary Hospital in the Philippines</b> Abel F. Ole
10	<b>Determining the dynamics of COVID-19 with and without the availability of vaccines in the City of Manila using the SIR Disease Model</b> Venus De Guzman, Anica Lauren Ang, Cian Margaret Cosep, Rica Caila Gonzales, Mhar Ian Estayan, Shiuan Ni Liang
11	<b>Dose reduction effect using thermoplastic bolus on the exit-depth-dose accumulation due to electron return effect: A Monte Carlo simulation study</b> Conrado T. Yocor, Jr. and Salasa A. Nawang
12	<b>Effective Temperature of Active Granular Chain on Periodic Potential Landscape</b> Argeena A. Agao-Agao and Mark Nolan P. Confesor
13	<b>Investigation of the Depth Dose Profile in Irradiation of SARS-COV2 Envelope Protein using Electron Beam in PHITS Simulation</b> Raia T. Pasion and Eulogio S. Auxtero, Jr.
14	<b>Monte Carlo simulation of radiation interaction with biological system at cellular level: An introduction to Geant4-DNA package</b> Maynard E. Limbaco and Salasa A. Nawang

15	<b>Monte Carlo study on the annihilation photons transmitted from a water phantom irradiated with carbon-12 at varying energies for applications in Positron Emission Tomography (PET)</b> Jerome D. Aparri and Catherine Therese J. Quiñones
16	<b>Morphology dynamic of confined <i>Physarum polycephalum</i> under acoustic perturbation</b> Tim Bryan B. Dilao, Jae Lord Dexter C. Filipinas, and Mark Nolan P. Confesor
17	<b>Optimization of the selection filter for scattering – based proton imaging</b> Grema Fe I. Peñonal and Catherine Therese J. Quiñones
18	<b>Oscillating contraction of protoplasmic veins of <i>Physarum Polycephalum</i></b> Kent Kevin P. Tabiliran, Jae Lord Dexter C. Filipinas and Mark Nolan P. Confesor
19	<b>Oscillation of <i>Physarum polycephalum</i> plasmodia wavefront in electrotaxis</b> Resa C. Malaay, Rosario L. Reserva and Mark Nolan P. Confesor
20	<b>Photon beam profile investigation and percentage depth dose (PDD) determination in a dosimetric set-up using Elekta Synergy Linac</b> Eulogio S. Auxtero, Jr. and Catherine Therese J. Quiñones
21	<b>Reverse alley – cropping by phytoremediation using <i>Canna generalis</i> for slash – burn land rehabilitation</b> Herlyn Kate P. Aizon, Aubrey Anne D. Tubo, Nica Hannah F. Seno, Gail Raenella Y. Castro, Thea Dorothy Pauline A. Lustica, Daniel Angelito G. Hernandez, Yevgeny Aster Dulla, Ronrick Arayata, and Mohammad Shazeli Che Zain
22	<b>Validation of JENDL-4.0 in PHITS using alpha particles in water at 0.001 MeV to 1000 MeV in BNCT</b> Grezel Vemb O. Repoylo and Eulogio S. Auxtero, Jr.

### Physics Education, Concepts and Demonstrations

1	<b>Propagation of light from different source geometries with a smartphone light sensor</b> Junsaku E. Yamada, Gabriel Anthony L. Tibay, Nathan Vance C. See, and Unofre B. Pili
2	<b>Sensitivity Characterization of HW 201 IR Sensor Module</b> Lowell D. Pamatong and Vincent Victor Velasco
3	<b>Smartphone-based acoustic timer application for Free-fall experiments</b> Alwielland Q. Bello
4	<b>Students' Experiences in Learning Physics in an Online Class</b> Justine C. Mercado
5	<b>Determining the magnetic permeability constant with a smartphone magnetometer</b> Gabriel Anthony L. Tibay, Junsaku E. Yamada, Nathan Vance C. See, and Unofre B. Pili

6	<b>Development of a board game in teaching speed and velocity to grade 7 students</b> Rizza Paz S. Onganiza, Elesar V. Malicoban, Monera A. Salic - Hairulla, Ivy Claire V. Mordeno, and Neal Alfie Y. Lasta
7	<b>Effects of Multiple Game-based Strategies in Grade 10 Science Learning</b> Radzma A. Morales, Wilfred G. Alava, Jr., and Alwielland Q. Bello
8	<b>Integration of Situational Images in Solving Linear Equation Problems</b> Angel Constantine A. Bajana
9	<b>Intellectual Property Application Profiles among Physics 3 Students at Philippine Science High School- Central Visayas Campus</b> Arlene Cahoy-Agosto, Benito A. Baje, Gencianus Alphonsus D. Retardo, Nardgin D. Balili, Ruby Cres Gayda, Riza Reyna G. Calma, Ro-ann S. Laude
10	<b>Investigation of junior high school teachers' perceptions and experiences in their implementation of the Spiral Progression Approach in the K to 12 science curriculum</b> Jed A. Tomarong and Monell John F. Cañizares
11	<b>Lenz's Law and the Art of Dance</b> Ginnie Vive T. Bautista, Giuliani Judd B. Alvizo, Carl Marlo D. Asotigue, Kenneth D. Atienza, Nigel John F. Casido, Zennia Marie C. Granado, Dancel John Laspoñas, Kessiah Faye B. Monteroso, Jopit Kirby M. Noguerraza, Arianne Mer F. Paas, Moniera Nice T. Planas, BG Yvonne C. Sabellano, Alviu Rey bin Nasir
12	<b>Mathematical Skills and Spatial Ability: Their Contribution to Physics Achievement</b> Regine F. Tesoro and Hazel Ann S. Soriano
13	<b>Measuring the speed of sound in air using the phyphox application and some half-closed tube-shaped household materials</b> Dashiel Lorenz M. Ruelos, Khin V. Misuari, and Unofre B. Pili
14	<b>Parameter estimates of the Physics achievement test using classical test theory and item response theory frameworks</b> Elesar V. Malicoban and Calixto G. Elnas Jr.
15	<b>Performance-Based Counteractive Approach and Students-Academic Achievement In Physics</b> Emma Tubilla Surita and Susie D. Daza
16	<b>Restructuring the Approach of Science Investigatory Project (SIP) Through Developing Skills in Analyzing a Research Abstract</b> Jas Felicisimo A. Cane, Arnold C. Alguno, Bernabe L. Linog, Rosario L. Reserva, and Sotero O. Malayao, Jr.
17	<b>Teaching Physics Through Philippine Traditional Games</b> Ruth Mary P. Fallesgon, Mark Angelo T. Daganio, and Frecel May F. Eusebio
18	<b>4 in 1 Anti – Thief Door Alarm</b> Abdulrajab I. Layagin
19	<b>The Effects of Modular Instruction in Learning Mechanics</b> Esthela Marie M. Tario and Joseph P. Hortezueta