

# PHYSICS AND ITS APPLICATIONS

## VENUE

## Virtual

PACIFIC TIME (US)



# IN-PERSON MEETING GUIDELINES

## COVID-19 safety policies

The health and safety of all our participants remains our top priority. We are closely monitoring government mandates and policy changes, Centers for Disease Control and Prevention (CDC) guidelines and public health advancements (<https://www.cdc.gov/>).

## Face-coverings

Wearing mask is recommended in the meeting premises / in-doors.

## Hand sanitizer stations

Hand and washing facilities and/or sanitizing systems easily accessible to everyone throughout the event.

## No contact policy

To assist in minimizing potential physical contact, elbow bumps are a great alternative to handshakes.

## Presentations (PPT/PPTX/PDF)

To avoid physical contact, we request all the in-person presenters to submit the presentation at: [https://physics.unitedscientificgroup.org/submit\\_presentation](https://physics.unitedscientificgroup.org/submit_presentation)

## WiFi

WiFi network and pass code will be shared on arrival to the meeting room.

## Q & A

Moderator/Chair will pick up questions from the audience in the meeting room (at venue) and also from the zoom chat function – and ask the speaker to answer live.

## Meeting Joining Links (Live Streaming on Zoom Platform)

### PACIFIC TIME

As the conference is hybrid, the virtual attendees can access the in-person presentations and queries can be asked through zoom chat box.

Meeting links shared will be for the complete meeting to join at any point of time.

#### Topic

2<sup>nd</sup> International Conference on **Physics and its Applications**  
July 17-20, 2023 | Los Angeles, CA

#### Join Zoom Meeting

<https://us06web.zoom.us/j/81348759534?pwd=WFlxSVZyeWpuYkp6TnFCQzlZdGN5Zz09>

Meeting ID: 813 4875 9534

Passcode: 792431

08:30-08:55

Registrations &amp; Badge Pickup

@ Foyer Area

08:55-09:00

Opening Ceremony

## Keynote Presentations-I

@ California B&amp;C

Moderator: **Naveed Mahmud**, Florida Institute of Technology, Melbourne, FL

09:00-09:30

## Understanding &amp; Controlling Charge, Heat, and Spin at Atomically Precise Interfaces

**Paul S. Weiss**, University of California, Los Angeles, CA

**Paul S. Weiss** is a nano scientist and holds a UC Presidential Chair and is a distinguished professor of chemistry, bioengineering, and materials science at UCLA. He studies the ultimate limits of miniaturization, developing new tools and methods for atomic-resolution and spectroscopic imaging, chemical patterning, and quantum information science. He has won awards in science, engineering, teaching, publishing, and communications. He is a fellow of the American Academy of Arts & Sciences, AAAS, ACS, AIMBE, APS, AVS, Canadian Academy of Engineering, Chemical Research Society of India, Chinese Chemical Society, IEEE, and MRS. He was the founding editor-in-chief of ACS Nano.

09:30-10:00

## Elementary Particles, Dark Matter, Dark Energy, and Properties of Objects: Specifications that Associate with Data

**Thomas J. Buckholtz**, Ronin Institute, Montclair, NJ

**Thomas J. Buckholtz** received a PhD in physics from the University of California, Berkeley, after receiving a BS in mathematics from the California Institute of Technology. His work includes publications in physics; mathematics; computer science; innovation; service science; and information usage, systems, and technology. His contributions to society span aspects of research and development, business, government, education, not-for-profit endeavors, startup enterprises, and the environment.

10:00-10:30

**Quantum Electromagnetics: Hamiltonian Formulation *via* the Lorenz Gauge****Weng Cho Chew**, Purdue University, West Lafayette, IN

**Weng Cho Chew** was born in Malaysia, in June 1953. He received the B.S. degree in 1976, both the M.S. and Engineer's degrees in 1978, and the Ph.D. degree in 1980, from the Massachusetts Institute of Technology, Cambridge, all in electrical engineering. From 1981 to 1985, he was with Schlumberger-Doll Research, Ridgefield, CT, first as a Program Leader and then a Department Manager. From 1985 to 1990, he was an Associate Professor with the University of Illinois. He is currently a professor there and teaches graduate courses in waves and fields in inhomogeneous media and theory of microwave and optical waveguides, and he also supervises a graduate research program. From 1989 to 1993, he was the Associate Director the Advanced Construction Technology Center, University of Illinois. He is a Professor at Purdue University from past 6 years

10:30-10:50

Conversational Break

@ Foyer Area

10:50-11:20

**Accurate and Stable Methods for Full. Ill-condition S Equation Systems Arising from Radial Basis Functions****Edward J. Kansa**, Convergent Solutions, Livermore, CA

**Edward J. Kansa** received his Ph.D. from Vanderbilt University specializing in many-body quantum mechanics. Afterwards, he was a research physicist at the U.S. Bureau of Mines and Lawrence Livermore National Laboratory specializing in applied physics. He has 8300 citations of journal papers and was awarded the George Green [Green's functions] for the pioneering in meshless methods for partial differential and integral equations using radial basis functions (known as the Kansa methods).

**Oral Presentations**

@ California B&amp;C

**Scientific Session-I****Quantum Physics | Plasma Physics | Computational Physics**

11:20-11:40

**Quantum AI and its Impact****Arit Kumar Bishwas**, PricewaterhouseCoopers, Fremont, CA

11:40-12:00

**Towards Quantum Computing and its Applications****Naveed Mahmud**, Florida Institute of Technology, Melbourne, FL

12:00-12:20

**Access Quantum Relaxation Time Quantitatively Through Optical Probe****Xiaodong Xiang**, Southern University of Science and Technology, China

12:20-12:40

**Burning Plasma Regime for Tokamaks****Leonid E. Zakharov**, LiWFusion, Princeton, NJ

12:40-12:50

Group Photo

@ California B&amp;C

12:50-13:30

Lunch Break

@ California A&amp;D

PROGRAM

## Scientific Session-II

### Relativity | Geophysics | Particle Physics | Condensed Matter Physics

**Chair:** Wang Yang, Beihang University, China

- |             |   |                  |
|-------------|---|------------------|
| 13:30-13:50 | <b>Gauge Theory and Post-newtonian Gravitational Fields of General Relativity, with Reference to Dark Matter and Dark Space-fluid of Rotating Galaxies</b><br><b>Tsutomu Kambe</b> , University of Tokyo, Japan |                  |
| 13:50-14:10 | <b>Cosmology with Time-varying Curvature</b><br><b>John Botke</b> , Ronin Institute, Montclair, NJ  |                  |
| 14:10-14:30 | <b>SSHR, a New Solar Reference Spectrum Obtained from Space-based Observations and Modeling</b><br><b>Mustapha Meftah</b> , National Center for Scientific Research, France                                     |                  |
| 14:30-14:50 | <b>A New GPR Data Processing Method</b><br><b>Motti Haridim</b> , Holon Institute of Technology, Israel   |                  |
| 14:50-15:10 | <b>Search for New Physics Beyond the Standard Model at LHC</b><br><b>JeongEun Lee</b> , Seoul National University, South Korea  |                  |
| 15:10-15:30 | <b>Relativistic Effects of Rotation</b><br><b>Wang Yang</b> , Beihang University, China   |                  |
| 15:30-15:50 | <b>Natural Field: Origin of Inertia</b><br><b>Debabrata Saha</b> , Independent Research Scientist, India  |                  |
| 15:50-16:10 | Conversational Break  | @ Foyer Area     |
| 16:10-16:30 | <b>Phenomenological Description of Itinerant Weak Ferromagnetic Materials</b><br><b>Kazuyuki Matsumoto</b> , Hokkaido University of Education - Asahikawa, Japan  |                  |
| 16:30-16:50 | <b>Effect of B-site Donor Doping on Ferroelectric/Piezoelectric Properties of Nb-Modified BiFeO<sub>3</sub>-Ba-TiO<sub>3</sub> Ceramics</b><br><b>Myong Ho Kim</b> , Changwon National University, South Korea  |                  |
| 16:50-17:10 | <b>Amyloid Protein Self-assembly at the Surface-liquid Interface</b><br><b>Yuri L. Lyubchenko</b> , University of Nebraska Medical Center, Omaha, NE  |                  |
| 17:10-17:30 | <b>Generalized Carter[A]-plebański Solutions to Einstein-nonlinear Electrodynamics</b><br><b>Alberto A. Garcia-Diaz</b> , Cinvestav, Mexico   |                  |
| 17:30-20:00 | Networking & Drinks Followed by Dinner  | @ California A&D |

**End of Day-1**

Scientific Session-III

Mathematical Physics | Statistical Physics | Computational Physics | Material Physics | Econophysics

Chair: **Xiaoping Shi**, The University of British Columbia, Canada

Special Talk

@ California B&C

09:00-09:30 **The Dual Theory of Relativity and its Implications**

**Tepper L. Gill**, Howard University, Washington, D.C

Oral Presentations

@ California B&C

09:30-09:50 **A New Class of Weighted CUSUM Statistics**

**Xiaoping Shi**, The University of British Columbia, Canada

09:50-10:10 **Berezin Integral as a Limit of Riemann Sum**

**Roman Sverdlov**, University of New Mexico, Albuquerque, NM

10:10-10:30 **Age-structured Population Models. Numerical Integration in an Infinite Life Span Framework**

**Oscar Angulo**, University of Valladolid, Spain

10:30-10:50 **Thermal Solitons and Thermal Transfer Along Thin Wires**

**Michele Sciacca**, University of Palermo, Italy

10:50-11:10 Conversational Break

@ Foyer Area

11:10-11:30 **Collusion Indicators in the GameStop Short Squeeze**

**Michael Campbell**, StudioX, Anaheim, CA

11:30-11:50 **TiO<sub>2</sub> Supported Iridium Clusters for Low-temperature CH<sub>4</sub> Steam Reforming**

**Jyh Chiang Jiang**, National Taiwan University of Science and Technology, Taiwan

11:50-12:10 **Efficient Space Data Retrieval Technique for Inhomogeneous Earth and Ocean Surfaces by using LBL Forward Model**

**Rajinder Kumar Jagpal**, Epic Climate Green, Canada

12:10-12:30 **Development of Real-time Time-dependent Density-functional-theory Code, INQ, and its Application to Nonequilibrium Quantum Dynamics**

**Tadashi Ogitsu**, Lawrence Livermore National Laboratory, Livermore, CA

12:30-12:50 **Nanocoatings Applied in Smart Windows for a Dynamic Solar Radiation Control**

**Bjorn Petter Jelle**, Norwegian University of Science and Technology, Norway

12:50-13:10 **Phonon Dominated Thermal Transport in Metallic Niobium Diselenide from First Principles Calculations**

**Jorge Morales**, University of Mayor, Chile

13:10-14:00 Lunch Break

@ California A&D

## Scientific Session-IV

Nano-Physics | Instruments & Instrumentation | Lasers, Optics & Photonics | Biophysics | Radiation Physics

**Chairs:** Xiaoping Shi, The University of British Columbia, Canada

Alessandro Chiolerio, Italian Institute of Technology, Italy

- 14:00-14:20 **A Study on the Thickness Dependence of  $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Fe}_{12}\text{O}_{19}$ /rGO Nanohybrid on its Microwave Absorption Efficiency**  
Dhanakotti Rajan Babu, Vellore Institute of Technology, India
- 14:20-14:40 **Liquid Intelligence: Advancements Across the Synthetic Domain**  
Alessandro Chiolerio, Italian Institute of Technology, Italy
- 14:40-15:00 **Direct-write Deposition of Functional with a Scanning Electron Microscope**  
Heinz D. Wanzanboeck, Vienna University of Technology, Austria
- 15:00-15:20 **Understanding Tactile-texture Sensation through various Physical Properties; High Resolution Multi-physics Tactile Sensing and the Device**  
Hidekuni Takao, Kagawa University, Japan
- 15:20-15:40 **The Extended Cut-off Wavelength of Metal-semiconductor Interface by Localized Surface Plasmon Resonance Structure**  
Ching Fuh Lin, National Taiwan University, Taiwan
- 15:40-16:00 **An Example of Complex Modeling in Biology: Studying Molecular Regulation of Membrane Curvature During Endocytosis**  
Xinxin Wang, UT Southwestern Medical Center, Dallas, TX
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- 16:00-16:20 Conversational Break @ Foyer Area
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- 16:20-16:40 **Space-time Dependence of the Neutron Multiplication Factor in Spent Fuel Storage**  
Mosebetsi J. Leotlela, University of the Witwatersrand, South Africa
- 16:40-17:00 **Detection of Explosive Materials in Dual-energy X-ray Security Systems**  
Ozan Yalcin, Havelsan Technology Radar Turkey, Turkey
- 17:00-17:20 **Entanglement Between Micro-magnetism, Electromagnetism and the Tensor Magnetic Phase Theory-symmetry, Invariance and Conservation Laws Analysis**  
Olivier Maloberti, UniLaSalle Amiens, France
- 17:20-17:40 **Efficiency of Fuel on Structural, Particle Size, Surface Morphology, Magnetic Behaviour of Zinc Ferrite ( $\text{ZnFe}_2\text{O}_4$ ) Magnetic Nanoparticles Prepared by Self-sustained Solution Combustion Synthesis and its Anti-microbial Properties**  
R Vidya, Vellore Institute of Technology, India
- 17:40-18:00 **On Fibrous Growth During the Discontinuous Precipitation: A Phase-field Study**  
Lynda Amirouche, USTHB, University of Science and Technology of Algiers, Algeria
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- 18:00-19:00 Networking & Drinks @ California A&D

End of Day-2



05:50-06:00

Opening Remarks &amp; Introduction

## Keynote Presentations-II

Moderator: **Milind N. Kunchur**, University of South Carolina, Columbia, SC

06:00-06:30

## The Human Auditory System and the Time-frequency Relationship

**Milind N. Kunchur**, University of South Carolina, Columbia, SC

**Milind N. Kunchur** is a Governor's Distinguished Professor and Michael J. Mungo Distinguished Professor at the University of South Carolina. He did his Ph.D. in Physics from Rutgers University, USA. He is a Fellow of the American Physical Society. Also South Carolina winner of the CASE and Carnegie Foundation U.S. Professors of the Year award. Received the George B. Pegram Medal, Ralph E. Powe Award, Donald S. Russell Award, Martin-Marietta Award, Michael A. Hill Award, and Michael J. Mungo Award. He Holds a National Research Council Senior Fellowship. He Served on panels for the National Science Foundation, US Department of Energy, Audio Engineering Society and other agencies.

06:30-07:00

## Mechanics Meets Electronics at the Nanolevel Ruling Out Heat. Case Study: a Field Effect Transistor based on Ballistic Charge Transport

**Manuel G. Velarde**, Complutense University of Madrid, Spain

**Manuel G. Velarde** was born on 14 September 1941. He is the Honorary Doctor at Univ. Aix-Marseille-France, Saratov University-Russian Federation and University of Almeria-Spain. He is a Spanish physicist and university professor, currently a member of the Academia Europaea, the Royal Academy of Doctors of Spain and the European Academy of Sciences. He has worked in American and European universities and research organizations, focusing on fluid dynamics and other non-linear problems, including the kinetic and thermodynamic theories, hydrodynamic and interfacial instabilities, anharmonic lattices and electronics. Because of his research achievements and international cooperation, he received the insignia of Officer of the National Order of Merit of France, belongs to the Ordre des Palmes Académiques, and holds the Blaise Pascal Medal of EURASC and Dupont Science Prize.

07:00-07:30

**Integrable Peakon Models in Nonlinear Mathematical Physics****Zhijun Qiao**, University of Texas Rio Grande Valley, Edinburg, TX

**Zhijun Qiao**, President's Endowed Professor, University of Texas Rio Grande Valley. He received PhD degree of Mathematics 1997 from Fudan University. His research interests include nonlinear partial differential equations, integrable systems and nonlinear cusp solitary waves, KdV equations and soliton theory, integrable symplectic mapping, R-matrix theory, radar image processing and inverse problems in mathematical physics. In 1999, he won one of the hundred best doctoral dissertations in all natural and social sciences in China. From 1999 to 2001, he was Humboldt fellow in Kassel University, Germany. He was awarded the University of Texas Distinguished Research Award in 2013 and the University of Texas President's Endowed Professor in 2016. He was the PI of more than 20 national and international research grants. He published more than 150 academic papers and 2 books including top ranking journals Communications in Mathematical Physics, IEEE Transaction on Geoscience and Remote Sensing (TGRS). He is currently serving on the editorial board of Studies in Applied Mathematics and deputy editor-in-chief of Journal of Nonlinear Mathematical Physics.

07:30-07:45

Break

**Oral Presentations****Scientific Session-V**

**Nano-Physics | Computational Physics | Statistical Physics | Thermodynamics |  
Material Physics | Nonlinear Science| Instruments & Instrumentation | Mathematical Physics |  
Econophysics | Acoustics | Polymer physics**

07:45-08:05 **Nano-strained Quantum Dots with Siloxane Passivation****Xianghua Wang**, Hefei University of Technology, China08:05-08:25 **On Some Multiple Integrals Encountered in Relativistic Electrodynamics Calculations****Georgeta Vaman**, Institute of Atomic Physics, Romania08:25-08:45 **Structural Properties and Antibacterial Activity of Zinc Sulfide Powders****Ftema Aldbea**, Sebha University, Libya08:45-09:05 **Optimal Geometry of the Vortex Domain Wall Pinning in Constricted Magnetic Nanowires****Mohammed Al Bahri**, A'Sharqiyah University, Oman09:05-09:25 **Theoretical Analysis of Energy Reversible Nanoelectromechanical Switch for Adiabatic Computation****Abdulilah Mayet**, King Khalid University, Saudi Arabia09:25-09:45 **Bi-complex Algebra Applications to Electromagnetic Waves and Beam Dynamics****Alexei V. Smirnov**, Advanced Energy Industries, Mountain View, CA**Chair: Carlos E. Fiore**, University of Sao Paulo, Brazil09:45-10:05 **Using Fractal Geometry to Study Signals with Scale-free Dynamics****Tahmineh Azizi**, University of Wisconsin-Madison, Madison, WI

- 10:05-10:25 **Physical-mathematical Modeling of Water Networks and Related Problems**  
**Fabio Caldarola**, University of Calabria, Italy
- 10:25-10:45 **Regularity, Profiles of Solutions and Evolution of Supports for Modeling a Flame Propagation in a Porous Medium**  
**Jose Luis Diaz Palencia**, Distance University of Madrid, Spain
- 10:45-11:05 **Strong Rate of Convergence of Time Euler Schemes for a Stochastic 2D Boussinesq Model**  
**Annie Millet**, University of Paris, France
- 11:05-11:25 **On the Algebraic Structure of General Mechanics**  
**Jody Trout**, Dartmouth College, Hanover, NH
- 11:25-11:45 **Geometric and Optical Properties of Pits in CR-39 Plastic Etched after Irradiation by 216 MeV/amu  $^{12}\text{C}$  Beam at Different Depths of Water-chamber**  
**Valery Ditlov**, Kurchatov Institute, Russia
- 11:45-12:05 **Autonomous Human-machine Teams: The Embodied Cognition of Interdependence Leads to the Discovery of Shannon Information Losses**  
**William F. Lawless**, Paine College, Augusta, GA
- 12:05-12:25 **The Effect of Biaxial Strain on the Electronic Properties of  $(\text{SnO}_2/\text{TiO}_2)_n$  Superlattices**  
**Najwa Harrati**, UCCS/Artois, France
- 12:25-12:45 **Powerful Ordered Collective Heat Engine**  
**Carlos E. Fiore**, University of Sao Paulo, Brazil
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- 12:45-13:05 Break
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- Chair: Diego Paolo Ferruzzo Correa**, Federal University of ABC, Brazil
- 13:05-13:25 **Analytical Approximation of Optimal Thermoeconomic Efficiencies for a Stefan-boltzmann-type Heat Transfer Law**  
**Angela Mercedes Ares de Parga Regalado**, University of Mexico, Mexico
- 13:25-13:45 **Ceramic Deposition by Low Pressure Cold Gas Spray**  
**John Dairo Henao Penenrey**, CONACYT-CIATEQ AC, Mexico
- 13:45-14:05 **Optofluidic devices: The Pinball Platform for Multiomic Disease Diagnosis**  
**Sara Abalde-Cela**, International Iberian Nanotechnology Laboratory, Portugal
- 14:05-14:25 **Dynamics of COVID-19 and Social Distancing: Insights from an Epidemiological SIRSi-vaccine Model with Forced Limit Cycles**  
**Diego Paolo Ferruzzo Correa**, Federal University of ABC, Brazil
- 14:25-14:45 **Resolution Capability of Resist and Throughput using Alkaline Treatment under Ultrasonic Irradiation**  
**Hideto Onishi**, Saitama University, Japan
- 14:45-15:05 **Resolution Improvement of Ultrasound 3D Imaging by Single Transmitter/Receiver System**  
**Norio Tagawa**, Tokyo Metropolitan University, Japan
- 15:05-15:25 **Two Dimensional Micronozzle Array: Fabrication and its Applications to Biosample Manipulation**  
**Kyohei Terao**, Kagawa University, Japan
- 15:25-15:45 **Quantum Mutual Entropy on Classical-quantum Boundary**  
**Takashi Matsuoka**, SUWA University of Science, Japan

- 15:45-15:50 **Poster Presentation: Investigation on Errors of the Approximation Equation of Correction Factor G7 for Four-point Probe Resistivity Measurement**  
**Pao An Lin**, Guangdong University of Petrochemical Technology, China
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- 15:50-16:00 Break
- 
- Chair: Jun Zou**, The Chinese University of Hong Kong, Hong Kong
- 16:00-16:20 **Direct Sampling Methods for Nonlinear Inverse Problems with Moving Inhomogeneous Medium Inclusions**  
**Jun Zou**, The Chinese University of Hong Kong, Hong Kong
- 16:20-16:40 **Chaotic Oscillation Control in Memristive System**  
**Chunbiao Li**, Nanjing University of Information Science and Technology, China
- 16:40-17:00 **A Comprehensive Experimental Investigation of Additives to Enhance Pool Boiling Heat Transfer of a Non-azeotropic Mixture**  
**Chen Xu**, Wuhan University of Technology, China
- 17:00-17:20 **Understanding the Urban Taxi Sharing Potential**  
**Xianlei Dong**, Shandong Normal University, China
- 17:20-17:40 **How can a Stochastic Memory Work for a Random Number Generator?**  
**Chao-Yao Yang**, National Yang Ming Chiao Tung University, Taiwan
- 17:40-18:00 **Uphill Diffusion During Silicide Formation in Si Nanowires Through Point Contact Reaction**  
**Yi-Chia Chou**, National Taiwan University, Taiwan
- 18:00-18:20 **Neural Networks with Local Converging Inputs (NNLCI) for Solving Conservation Laws and Other Differential Equations with Greatly Reduced Complexity**  
**Yingjie Liu**, Georgia Institute of Technology, Atlanta, GA
- 18:20-18:40 **Electrochemical Study of Bi-doped ZnO as an Electrode Material for High Performance Supercapacitor Applications**  
**Ravichandran**, National College (Autonomous), India

**End of Day-3**

## Keynote Presentation-III

**Moderator:** Inge Svein Helland, University of Oslo, Norway

06:00-06:30

### Computation of the Deuteron Mass and Force Unification *via* the Rotating Lepton Model

**Constantinos G. Vayenas**, University of Patras, Greece



**Constantinos G. Vayenas** was born in Athens on September 22, 1950, studied Chemical Engineering at NTU Athens (1968-1973) and got his PhD in 1976 from the University of Rochester in the USA. He then taught as Assistant Professor in the Department of Engineering and Applied Science at Yale University (1976-77) and as Associate Professor at MIT (1977-82) before moving voluntarily to the University of Patras in Greece. He is an international member of the National Academy of Engineering (NAE) of the USA and a member of the Academy of Athens. He has authored three books and more than 300 papers on Catalysis, Electrochemistry and Particle Physics.

## Oral Presentations

### Scientific Session-VI

**Astroparticle Physics | Particle Physics | Relativity | Radiation Physics | Quantum Physics | Condensed Matter Physics | Fluid Physics | Lasers, Optics & Photonics**

- 06:30-06:50 **Development of 230 nm AlGaIn-based Far-UVC LEDs for Application to HumanSafe Virus Inactivation**  
**Hideki Hirayama**, RIKEN, Japan
- 06:50-07:10 **The Effective Dirac Algebra by Gauge Field Interaction in Relativistic Electrodynamics and its Application**  
**Wong Tsz Tsun**, The University of Hong Kong, Hong Kong
- 07:10-07:30 **Non-supersymmetric Strings, Self-adjoint Extensions and (In)Stability Issues**  
**Augusto Sagnotti**, Scuola Normale Superiore, Italy
- 07:30-07:50 **Probing the Gas in and around Galaxies with Quasar Observations**  
**Varsha P. Kulkarni**, University of South Carolina, Columbia, SC
- 07:50-08:10 **Optoelectronic Control of Surface Plasmon Polaritons Waves at Metal-doped Semiconductor Interfaces**  
**Raj K. Vinnakota**, Troy University, Troy, AL
- 08:10-08:30 **Effective and Organ Dose during SPECT/CT Examinations**  
**Ali Aamry**, King Saud Medical City, Saudi Arabia
- 08:30-08:50 **Radiation-induced  $\text{CaSi}_2$  Crystal Nucleation and Growth during the  $\text{CaF}_2$  Epitaxy on Si**  
**Anatoly Dvurechenskii**, Rzhanov Institute of Semiconductor, Russia

08:50-09:10	<b>Radiation Physics in Medicine</b> <b>John Sutcliffe</b> , IOP, IPEM, UK
09:10-09:30	<b>On Quantum Foundation</b> <b>Inge Svein Helland</b> , University of Oslo, Norway
09:30-09:50	<b>Consequences of a Rigid Analysis of the Schrödinger Equation for the Interpretation of the Wavefunction of Bound States and the Foundations of Quantum Mechanics</b> <b>Emil Roduner</b> , University of Stuttgart, Switzerland
09:50-10:10	<b>Testing Precision and Accuracy of Weak-value Measurements in a Quantum Computing System</b> <b>Francisco De Zela</b> , Pontifical Catholic University of Peru, Peru
10:10-10:30	<b>In Silico Biofluid Mechanics for Cardiovascular Problems</b> <b>Asimina Kazakidi</b> , University of Strathclyde, UK
10:30-10:40	Break
	<b>Chair: Chuanlei Liu</b> , Radiation Protection Bureau of Health Canada, Canada
10:40-11:00	<b>Bound for Spin-dependent Noncommutative Parameter based on Pauli Equation</b> <b>Carlos Alberto Stechhahn Da Silva</b> , Criminalistic Institute of Sao Paulo, Brazil
11:00-11:20	<b>Polarization-induced Phase Transitions in InGaN-based Coupled Quantum Well</b> <b>Slawomir P. Lepkowski</b> , Institute of High Pressure Physics, Poland
11:20-11:40	<b>Effect of Boundaries on the Surface Superconducting Critical Temperature</b> <b>Rodrigo Henrique de Braganca</b> , Federal University of Pernambuco, Germany
11:40-12:00	<b>Structural and Dielectric Properties of Hexagonal Perovskite Ceramics</b> <b>Cecile Autret</b> , Greman laboratory, France
12:00-12:20	<b>Control of High-speed Flows Over Aerodynamic Bodies using Plasma Formations Located in Various Flow Areas</b> <b>Olga Azarova</b> , Federal Research Center, Russia
12:20-12:40	<b>A Practical Investigation of Wind Turbine Blade Erosion and Particle-laden Flows</b> <b>Reza Hassanian</b> , University of Iceland, Iceland
12:40-13:00	<b>Cosmic Radiation Monitoring with Health Canada's Fixed Point Surveillance Network</b> <b>Chuanlei Liu</b> , Radiation Protection Bureau of Health Canada, Canada
13:00-13:20	<b>Tackling Scattering in X-ray Imaging with Time of Flight</b> <b>Julien Rossignol</b> , University of Sherbrooke, Canada
13:20-13:25	<b>Poster Presentation: Thoughts on the Build-up of Electromagnetic Radiation and on the Notion of Process Time</b> <b>Tibor Berceli</b> , Budapest University of Technology and Economics, Hungary
13:25-13:30	<b>Poster Presentation: An Innovation in used Car Windscreens for Post Accident Dose Reconstruction in the Periphery of Nuclear Installations</b> <b>Khulud saad Almuqrin</b> , Princess Nourah Bint Abdulrahman University, Saudi Arabia
13:30-13:40	Break

**Chair: Raj K. Vinnakota**, Troy University, Troy, AL

- 13:40-14:00 **An Anti-photon: Way to Explain the Gamma Ray Burst**  
**Soon-Tae Hong**, Sogang University, South Korea
- 14:00-14:20 **On the Numerical Exact Solution for Many-body Problem based on the Differential Forms**  
**Shin-Ichiro Kondo**, Nagasaki University, Japan
- 14:20-14:40 **Light Quantum Beyond the Fermi Golden Rule**  
**Kenzo Ishikawa**, Hokkaido University, Japan
- 14:40-15:00 **Quantum Compilation for Entangled State Preparation**  
**Le Bin Ho**, Tohoku University, Japan
- 15:00-15:20 **Generation of 10dB Squeezed Light with Higher-order Spatial Mode with Optical Parametric Amplifier**  
**Kui Liu**, Shanxi University, China
- 15:20-15:40 **Electronic Structure and Orbital Properties of Perovskite Ruthenates  $\text{SrRu}_{1-x}\text{Mn}_x\text{O}_3$**   
**Pao An Lin**, Guangdong University of Petrochemical Technology, China
- 15:40-16:00 **Cosmic Censorship of Smooth Structures on Spacetimes**  
**Vladimir Chernov**, Dartmouth, Hanover, NH
- 16:00-16:20 **High Single-mode Selectivity V-cavity Tunable Semiconductor Laser based on GaAs**  
**Tuo Chen**, Changchun University of Science and Technology, China
- 16:20-16:40 **Reconfigurable Valley Topological QED Platform for Qubit Operation**  
**Yongyou Zhang**, Beijing Institute of Technology, China
- 16:40-17:00 **Relativistic Effects of Rotation**  
**Yin Rui**, Beihang University, China
- 17:00-17:20 **Pulsed Laser Ablation of Nanoparticle-embedded PMMA Composite**  
**Tanant Waritanant**, Mahidol University, Thailand
- 17:20-17:40 **Spintronics-based Nonvolatile FPGA and its Application to Edge-IoT Devices**  
**Daisuke Suzuki**, The University of Aizu, Japan
- 17:40-17:45 **Poster Presentation: Enhanced Infrared Optical Responsivity and the Carrier Dynamics in Metal-semiconductor Interface**  
**Zih-Chun Su**, National Taiwan University, Taiwan

**End of Day-4**

**We wish to see you at**

# **Physics-2024**

**April 22-24 | Baltimore, MD**



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# 8105, Rasor Blvd - Suite #112, PLANO, TX 75024

**Tel:** +1-469-854-2280/81; **Fax:** +1-469-854-2278; **Toll free:** +1-844-395-4102

**Email:** [physics@uniscigroup.net](mailto:physics@uniscigroup.net) (or) [secretary@physics-conference.com](mailto:secretary@physics-conference.com)

**Web:** <https://physics.unitedscientificgroup.org/>