ORAL PRESENTATION PROGRAM

1. Oral presentation session starts from 09:30-17:30 on 16th December and from 08:30-11:30 on 17th December
2. Each plenary lecture is 45-min talk.
3. Each invited lecture from single speaker is 20-min talk and 10-min discussion.
4. Invited lecture from duo speakers is 30-min talk and 10-min discussion.
5. Each general presentation is 15-min talk and 5-min discussion, with 5-min interval for speaker changes.
6. To keep the session on time, please strictly concern the time limits.

1st	Bell	12 min	
2nd	Bell	15 min	End of Talk
3rd	Bell	20 min	End of Discussion

7. Before the presentation, please install Zoom application and test the system including your slides on 15th December during 13:30-16:00 ICT with meeting ID: 799 327 1544 and password: NANO2021 This meeting ID and password will be used throughout the conference
8. For presenter in Nanosafety session, please install Webex application and test the system including your slides on 15th December with meeting number: 2512 407 6807 and password: 2021 or via the meeting link: https://meeting-nstda.webex.com/meeting-nstda/j.php?MTID=m3029a06adc1a6f4bd8a16c25be7db147 On the conference date, meeting number: 2514 724 4963 and password: 2021 with meeting link: https://meeting-nstda.webex.com/meeting-nstda/j.php?MTID=m078c76fac72fc751fb07aab685e602ce will be used to access to Nanosafety session.
9. All presenters have to make a registration during 8:00-8:45 ICT on 16th December and during 07:30-08:25 ICT on 17th December via Zoom application prior to the presentation.
10. Any slide presentation formats and templates are allowed. However, all texts and slides must be clearly visible when using sharing screen in Zoom/Webex Application.
11. Chairpersons are requested to join and test the system on 15th December. Please also come to the assigned sessions at least 15 minutes before the start time to notify the corresponding staff of the session.

TIMETABLE: Day 1, Thursday 16th December via Zoom

Plenary Lecture					
10:20	**NANO-PL-02**	**Solid-state Nanopore Platform integrated with Machine Learning for Digital Diagnosis of Virus Infection** Tomoji Kawai (Osaka University, Japan)			
Breakout Room A		**Breakout Room B**		**Breakout Room C**	
11:10	**NANO-O-1-A01** Introducing a Novel Hydrophilic Cellulose Nanofiber Separator for "Water-in-salt" Based Energy Storage Devices Varisara Deerattrakul (NANOTEC, Thailand)	11:10	**NANO-IN-1-B01** Defects and Impurities in Functional Metal Oxides: Insight from Density-Functional Calculations Pakpoom Reunchan (Kasetsart University, Thailand)	11:10	**NANO-IN-1-C01** Modified electron transporting layers for High Performance and Stable Perovskite Solar Cell Pisist Kumnorkaew (NANOTEC, Thailand)
11:35	**NANO-O-1-A02** Comparative Study on Photocatalytic Degradation of Methylene Blue Using Pristine ZnO and Ni/ZnO Composite Films Jirawan Srisai (Chulalongkorn University, Thailand)	11:45	**NANO-O-1-B01** The Importance of Using Dispersion Corrected Density Functionals When Evaluating Some Band[N]calicenes as Carbon Dioxide Hosts Thawalrat Ratanadachanakin (Maejo University, Thailand)	11:45	**NANO-O-1-C01** Low-cost fabrication of planar perovskite solar cells using recrystallization technique via air blade coating Sorrawit Meeklinhom (Thammasat University, Thailand)
12.00	**NANO-O-1-A03** Anti-dust and Antireflective Silica-based Hard Coating Using Flow Coating Technique on Polymethyl Methacrylate for Building Applications Narin Chomcharoen (NANOTEC, Thailand)	12:10	**NANO-O-1-B02** **(Cancelled)**	12:10	**NANO-O-1-C02** Aspects of Optical and Thermal Performances in Flexible Perovskite Solar Cells Made of Nanomaterials with Potential for Development of Vehicle-Integrated Photovoltaics Methawee Nukunudompanich (KMUTT, Thailand)
Lunch Break					

TIMETABLE: Day 1, Thursday 16th December via Zoom

Plenary Lecture					
10:20	**NANO-PL-02**	**Solid-state Nanopore Platform integrated with Machine Learning for Digital Diagnosis of Virus Infection** Tomoji Kawai (Osaka University, Japan)			
Breakout Room D		**Breakout Room E**		**Breakout Room F**	
11:10	**NANO-O-1-D01** Interruption of blood-testis barrier by flutamide-loaded nanostructured lipid carrier as a novel non-surgical contraceptive approach for male animals Prattana Tanyapanyachon (NANOTEC, Thailand)	11:10	**NANO-IN-1-E01** Digitalization of the Human Body Smell for Health Monitoring Teerakiat Kerdcharoen (Mahidol University, Thailand)	11:10	**NANO-IN-1-F01** Photocatalytic degradation of pesticides over exfoliated graphitic carbon nitride/TiO_2 nanocomposites Siwaporn Meejoo Smith (Mahidol University, Thailand)
11:35	**NANO-O-1-D02** Microfluidic Aqueous Two-Phase System Forming Cell Encapsulated Degradable Hydrogel Microfibers for Tissue Engineering Applications Katawut Namdee (NANOTEC, Thailand)	11:45	**NANO-IN-1-E02** Smart Electronic Eyeglasses for Kidney Monitoring Integrated with Machine Learning Surachate Kalasin (KMUTT, Thailand)	11:45	**NANO-IN-1-F02** Peroxidase Mimicking Functional Nanomaterials for Chemical and Biosensing Applications Sreeramareddygari Muralikrishna (KMUTT, Thailand)
12:00	**NANO-O-1-D03** Development of a closed-tube field-deployable loop-mediated isothermal amplification (LAMP) assay for the visual detection of Enterocytozoon hepatopenaei (EHP) Narong Arunrut (BIOTEC, Thailand)				
Lunch Break					

TIMETABLE: Day 1, Thursday 16th December via Zoom

Breakout Room A		Breakout Room B		Breakout Room C	
13:30	**NANO-IN-1-A01** Design and Engineering of Optical Nanostructured Thin Films for Sensing Applications Mati Horprathum (NECTEC, Thailand)	13:30	**NANO-O-1-B03** Understand the Limitations and Validate the Applications of the Simplified Space-Charge-Limited-Current Theory by using the Drift-Diffusion Model Kanokkorn Pimcharoen (NANOTEC, Thailand)	13:30	**NANO-IN-1-C02** Energy Storage Technologies at the Pilot Plant Scale Montree Sawangphruk (VISTEC, Thailand)
14:05	**NANO-IN-1-A02** Direct Ink Writing 3D Printing for Fabricating Ultra-deformable Microfludic Electronic Devices Michinao Hashimoto (Singapore University of Technology and Design, Singapore)	13:55	**NANO-O-1-B04** Understanding the interaction on Ni and Cu surfaces in HMF hydrogenation reaction: Theoretical study Aunyamanee Plucksacholatarn (NANOTEC, Thailand)	14:05	**NANO-IN-1-C03** The effect of the chemical structure of the polymer binder on promoting long-cycle life of aqueous Zn/MnO_2 batteries Rongrong Cheacharoen (Chulalongkorn University, Thailand)
14:40	**NANO-IN-1-A03** Hydrothermal ZnO Nanorods grown on Ag seed layer and Its Fluorescence Enhancement Activity Annop Klamchuen (NANOTEC, Thailand)	14:20	**NANO-O-1-B05** MACHINE LEARNING MODEL OF γ AND γ′ LATTICE PARAMETERS IN NICKLE-BASE SUPERALLOYS Supanan Pongteerapol (KMUTT, Thailand)	14:40	**NANO-IN-1-C04** The Role of Piezo/Nanopiezo-electric Materials for Hybrid Piezoelectric-Triboelectric Nanogenerator Thitirat Charoonsuk (Srinakharinwirot University, Thailand)
15:15	**NANO-O-1-A04** Investigation of lipid bilayer formation by AFM Seoung-Oh Kim (Park Systems Corporation, Korea)	14:45	**NANO-O-1-B06** Exploring binding mechanism of microRNA, Graphene quantum dot and complementary DNA using molecular dynamics simulation Nattapon Kuntip (Kasetsart University, Thailand)	15:15	**NANO-IN-1-C05** Functional evaluation of biomass-derived carbon quantum dots as electrode in sodium-ion battery Baskar Thangaraj (KMUTT, Thailand)

TIMETABLE: Day 1, Thursday 16th December via Zoom

Breakout Room D		Breakout Room E		Breakout Room F	
13:30	**NANO-IN-1-D01** Exploring rare cellular activity in more than one million cells by a trans-scale-scope Takeharu Nagai (Osaka University, Japan)	13:30	**NANO-O-1-E01** Synthesis of bimodal mesoporous silica from bagasse heavy ash via pH alteration process with a single template Kunpirom Chainarong (Kasetsart University, Thailand)	13:30	**NANO-IN-1-F03** Theoretical Insights into CO_2 Electroreduction toward Ethylene and Ethanol on Cu(100) Catalyst Pussana Hirunsit (NANOTEC, Thailand)
14:05	**NANO-IN-1-D02** Nanocoating of medical devices for biomedical applications Norased Nasongkla (Mahidol University, Thailand)	13:55	**NANO-O-1-E02** Hydrophobic/hydrophilic NaCl-functionalized mesoporous silica adsorbent derived from bagasse heavy ash Pariyawalee Sangteantong (Kasetsart University, Thailand)	14:05	**NANO-O-1-F01** Investigation of electrochemical cell design and electrode on gas diffusion electrode for CO_2 reduction reaction Kornkamon Meesombad (NANOTEC, Thailand)
14:40	**NANO-IN-1-D03** Lipopeptide Nanoparticulate Vaccine Design for the Induction of Protective Immune Responses Istvan Toth (The University of Queensland, Australia)	14:20	**NANO-O-1-E03** Effect of aluminosilicate adsorbent with different silica and alumina ratios derived from bagasse ash on ammonia adsorption in water Supisara Lertthanu (Kasetsart University, Thailand)	14:30	**NANO-O-1-F02** Development of Continuous Electrochemical Production of 2,5-Furandicarboxylic Acid (FDCA) Sarinya Woraphutthaporn (NANOTEC, Thailand)
15:15	**NANO-O-1-D04** Development and evaluation of colistin-conjugated silver nanoparticles for enhanced antibacterial activity Poowadon Muenraya (Walailak University, Thailand)	14:45	**NANO-O-1-E04** Silica-reinforced natural rubber nanocomposites as a coating material for slow-release fertilizer Patharawadee Boonying (NANOTEC, Thailand)	14:55	**NANO-IN-1-F04** Refractive free-form micro-optical elements and phase plates in lithium niobate by high-current focused Xe ion beam milling Sergey Gorelick (Monash University, Australia)

TIMETABLE: Day 1, Thursday 16th December via Webex

Breakout Room G	
13:30	**NANO-IN-1-G01** Recent status of nanosafety and standardization for nanomaterials in Vietnam Assoc. Prof. Quang Le Dang (Vietnam Institute of Industrail Chemistry, Vietnam)
14:05	**NANO-IN-1-G02** Use of Zebrafish Embryo Assay to Evaluate Developmental Toxicity of α-Mangostin Wittaya Pimtong (NANOTEC, Thailand)
14:40	**NANO-IN-1-G03** Comparison of migration disturbance potency of epigallocatechin gallate (EGCG) synthetic analogs and EGCG PEGylated PLGA nanoparticles in rat neurospheres Marta Barenys (University of Barcelona, Spain)
15:25	**NANO-O-1-G01** ACUTE TOXICITY AND 28-DAY REPEATED DOSE STUDIES OF MULTI-WALLED CARBON NANOTUBES Jocelyn P. Reyes (Industrial Technology Development Institute, Philipines)

TIMETABLE: Day 1, Thursday 16th December via Zoom

Breakout Room A		Breakout Room B	Breakout Room C	
15:40	**NANO-O-1-A05** Tunable Charge Transport Process of Highly Stable Electrochromic Polymers Chuleekorn Chotsuwan (NANOTEC, Thailand)		15:50	**NANO-O-1-C03** Surface texture-controlled carbon nanotube/polydimethylsiloxane composite for performance enhancement of triboelectric nanogenerators Chinathun Pinming (KMITL, Thailand)
16:05	**NANO-O-1-A06** Study of silica nanoparticle and fluoroalkylsilane nanocomposite towards transparent, hydrophobic and oleophobic coating Tippawan Sodsai (NANOTEC, Thailand)		16:15	**NANO-O-1-C04** **(Cancelled)**
16:30	**NANO-O-1-A07** Preparation of Biocompatible Octyl Methoxycinnamate/Poly(ε-caprolactone) Nanocapsules for Use in Cosmetic Application Chayanan Tanesanukul (Thammasat University, Thailand)		16:40	**NANO-O-1-C05** Prediction of higher heating value of hydrochar from sugarcane leaf during hydrothermal carbonization proces Jatuporn Parnthong (NANOTEC, Thailand)
			17:05	**NANO-O-1-C06** Effect of pyrolysis conditions on the electroactive performance of biochar: A comparison with multiwalled carbon nanotubes for fabric supercapacitor applications David Joseph G. Alzate (University of Santo Tomas, Philipines)

TIMETABLE: Day 1, Thursday 16th December via Zoom

Breakout Room D		Breakout Room E		Breakout Room F	
15:40	**NANO-IN-1-D04** High quality electrochemical redox enzyme disease biomarker biosensing, with and without nanomaterials in the biocatalyst immobilization matrix Albert Schulte (VISTEC, Thailand)	15:10	**NANO-IN-1-E03** Dimensional Evolution of TiO_2 Nanoforest Films for Efficient Solar-to-Chemical Conversion Teera Butburee (NANOTEC, Thailand)	15:30	**NANO-IN-1-F05** Low-Dimensional Materials and Opto-electronic Properties Sukrit Sucharitakul (Chiang Mai University, Thailand)
16:15	**NANO-IN-1-D05** Metal Oxide Nanowires Embedded in Microfluidic Channel for DNA Analysis Sakon Rahong (KMITL, Thailand)	15:45	**NANO-O-1-E05** Chemical activation of particle board waste by ferric nitrate and ferrocene Suppanat Tantavanich (Chulalongkorn University, Thailand)	16:05	**NANO-IN-1-F06** Quantum state so called negative electronic compressibility and its application on energy capacity enhancement Worawat Meevasana (Suranaree University of Technology, Thailand)
16:50	**NANO-O-1-D05** SERS-based sandwich assay for the detection of miR-29a cancer biomarker Kiatnida Treerattrakoon (NANOTEC, Thailand)			16:40	**NANO-O-1-F03** Bandgap Shifting in Antimony Doped ZnO by means of Electroreflectance Spectroscopy Sukittaya Jessadaluk (KMITL, Thailand)
				17:05	**NANO-O-1-F04** Photonic density of states and photonic bandgap of deformed titanium dioxide inverse opal structures Nonthanan Sitpathom (Mahidol University, Thailand)
				17:30	**NANO-O-1-F05** Investigation of Detergent Compositions Effects on the Effectiveness of Alumina and Aluminium Titanium Carbide Cleaning Kittikron Pattaradamrongchai (Chulalongkorn University, Thailand)

TIMETABLE: Day 2, Friday 17th December via Zoom

Plenary Lecture					
08:00	**NANO-PL-01**	**Materials Science with 2D Atomic Layers** Pulickel M. Ajayan (Rice University, USA)			
08:30	**NANO-PL-03**	**Nucleoside-modified mRNA-LNP therapeutics** Drew Weissman (University of Pennsylvania, USA)			
09:15	**NANO-PL-04**	**COVID 19 mRNA vaccine development** Kiat Ruxrungtham (Chulalongkorn University, Thailand)			
Breakout Room A		**Breakout Room B**		**Breakout Room C**	
10:05	**NANO-IN-2-A01** Advanced Graphene and Carbon Nanomaterials for Printed Sensor and Energy Applications Adisorn Tuantranont (NSD, Thailand)	10:05	**NANO-IN-2-B01** From lab to market – the commercialization of nanosilver in Thailand Nutthaphol Khupsathianwong (Prime Nanotechnology Co., Ltd., Thailand)	10:05	**NANO-IN-2-C01** Development of emerging/re-emerging infectious disease detection platform using new coronavirus (Covid-19) as a model Deanpen Japrung (NANOTEC, Thailand)
10:40	**NANO-O-2-A01** Effect of external magnetic field on LPG diffusion through ZSM-5 zeolites with different cluster sizes Zehui Du (Kasetsart University, Thailand)	10:40	**NANO-IN-2-B02** Nanotechnology Startups and Industrial Enterprise in the Not-So-Distant Future of Electronic Printing Sarun Buppasirakul (Quasense Co., Ltd., Thailand)	10:40	**NANO-IN-2-C02** Rapid and robust CRISPR based diagnostic platform for SARS-CoV-2 RNA detection Maturada Patchsung, Aimorn Homchan (VISTEC, Thailand)
11:05	**NANO-O-2-A02** The Evaluation and Optimization of Electrodeposited Fe-doped Nickel Oxyhydroxide Electrocatalysts for the Oxidation of 5-Hydroxymethyl furfural to 2,5-Furandicarboxylic acid Natjanan Songserm (Kasetsart University, Thailand)	11:15	**NANO-O-2-B01** Welding Fume Reduction in Flux Cored Wire Arc Welding using Nanoparticles-Shielding Gas Mixture Isaratat Phung-on (KMUTT, Thailand)		

TIMETABLE: Day 2, Friday 17th December via Zoom

Plenary Lecture				
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Breakout Room D		**Breakout Room E**		**Breakout Room F**
10:05	**NANO-IN-2-D01** Low Dimensional Perovskite Nanocrystals for Efficient Solar Cells Jianyu Yuan (Soochow University, China)	10:05	**NANO-O-2-E01** **(Cancelled)**	
10:40	**NANO-O-2-D01** Establishment of Metrological Traceability of Nanomaterial Size Measurement in the Philippines through Conduct of a Local Interlaboratory Comparison using Polystyrene Nanosphere Standards Admer Rey C. Dablio (Industrial Technology Development Institute, Philipines)	10:30	**NANO-O-2-E02** **(Cancelled)**	
11:05	**NANO-O-2-D02** Enhancing electrochemical CO_2 reduction to C_2 products using CuZn tandem catalysts supported on porous carbon Saranya Juntrapirom (NANOTEC, Thailand)	10:55	**NANO-O-2-E03** Simultaneous Detection of Dual Metal Ions Pb^{2+} and Hg^{2+} Using Quantum Dots Modified Paper Based Microfluidic Chandan Hunsur Ravikumar (KMUTT, Thailand)	
		11:20	**NANO-O-2-E04** Swellable Microneedles for Nitrate Detection in Food Thanachita Sumontha (Mahidol University, Thailand)	

POSTER PRESENTATION PROGRAM

1. Poster presentation session starts from 11:40-12:40 on 17th December.
2. Before the presentation, please install Zoom application and test the system including your slides on 15th December during 13:30-16:00 ICT with meeting ID: 799 327 1544 and password: NANO2021 This meeting ID and password will be used throughout the conference
3. All presenters have to come and make a registration during 7:30-8:25 ICT via Zoom application prior to the presentation.
4. All presenters should be in their respective breakout room during poster discussion time.
5. Any poster formats and templates are allowed. However, all texts and figures on the poster must be clearly visible when using sharing screen in Zoom application.

POSTER LIST: Day 2, Friday 17th December 11:40-12:40

Breakout Room 01

NANO-P-01 Direct Growth of Nb-doped Anatase and Rutile TiO2 Nanorod Arrays with High Orientation
Takaki Kimura (Kyoto University, Japan)

Breakout Room 02

NANO-P-02 Electrochemical and structural properties of copper hexacyanoferrate
Sukanya Jankhunthod (Suranaree University of Technology, Thailand)

Breakout Room 03

NANO-P-03 Ethylene Oxide Cycloaddition with Carbon Dioxide over M-Faujasite Zeolite (M=Mg, Zn and Cu): A Theoretical Reaction Mechanism Investigation
Winyoo Sangthong (Kasetsart University, Thailand)

Breakout Room 04

NANO-P-04 Investigation Structure and Electronic properties of Fucoxanthin-Chlorophyll a/c Light harvesting Ability: Study by using DFT calculation
Natsuda Toesier (Kasetsart University, Thailand)

Breakout Room 05

NANO-P-05 A DFT study of hydrogen and n-butane dissociation on FeP and CoP surfaces
Nirun Ruankaew (NANOTEC, Thailand

Breakout Room 06

NANO-P-06 Daytime radiative cooling of photonic woods fabricated by hydrogen peroxide bleaching
Piyawath Tapsanit (KMUTNB, Thailand)

Breakout Room 07

NANO-P-07 Vitamin C-Phosphatidylcholine Complex as a Potential Drug Carrier
Oraphan King (NANOTEC, Thailand)

Breakout Room 08

NANO-P-08 Overcoming Limitations of Hen Egg White Lysozyme using Cationic Liposomal Nanoparticles for Oral Drug Delivery
Natchanon Rimsueb (NANOTEC, Thailand)

Breakout Room 09

NANO-P-09 A Novel Plant-based Nanovesicles: Ginger Nano- Exosomes for Anti-inflammation and Anti-cancer Phyto-active Agent Delivery
Tapanee Thinbanmai (NANOTEC, Thailand)

Breakout Room 10

NANO-P-10 The Adsorption of miR-144 Cancer Biomarkers on Graphene Quantum Dot in Aqueous Solution
Saowalak Natmai (Kasetsart University, Thailand)

Breakout Room 11

NANO-P-11 Preliminary Study of Turmeric Waste Activated Carbon Synthesis
Nuttamon Vanichsetakul (Chulalongkorn University, Thailand)

Breakout Room 12

NANO-P-12 Carbon nanofiber as an anti-fouling electrode in phenolic detection
Keerakit Kaewket (Suranaree University of Technology, Thailand)

Breakout Room 13

NANO-P-13 Enhancement of ammonia gas sensing by metal oxide-polyaniline nanocomposite
Nattawut Soibang (Chulalongkorn University, Thailand)