Table of Contents

Part I Conference Schedule

Time: December 6- 8, 2019
Location: International Asia-Pacific Convention Center Sanya
三亚亚太国际会议中心

Date	Time	Lobby		
Dec. 6	14:00-17:00	Registration		
Date	**Time**	**Shanghai Room (上海厅)**	**HongKong Room(香港厅)**	**Tokyo Room(东京厅)**
Dec. 7	08:30-12:00	**Biomedical & Life Sciences** **Keynote Speech Session 1:** **Chair:** **Group photo & Coffee Break: 10:45-10:55**	**Physics Sciences** **Keynote Speech Session 1:** **Chair:** **Group photo & Coffee Break: 10:45-10:55**	**Energy Engineering** **Keynote Speech Session:** **Chair:** **Group photo & Coffee Break: 10:45-10:55**
	12:00-13:30	Lunch Pacific Cafe（太平洋咖啡厅）		
Date	**Time**	**Shanghai Room (上海厅)**	**HongKong Room(香港厅)**	**Tokyo Room(东京厅)**
Dec. 7	14:00-18:00	**Biomedical & Life Sciences** **Keynote Speech Session 2** **Chair:** **Group photo & Coffee Break: 16:15-16:25**	**Physics Sciences** **Keynote Speech Session 2:** **Chair:** **Group photo & Coffee Break: 16:15-16:25**	**Energy Engineering** **Technical Session:** **Chair:** **Group photo & Coffee Break: 16:15-16:25**
	18:00-19:30	Dinner Pacific Cafe（太平洋咖啡厅）		
Date	**Time**	**HongKong Room(香港厅)**	**Tokyo Room(东京厅)**	
Dec. 8	08:30-12:00	**Biomedical & Life Sciences** **Technical Session:** **Chair:** **Group photo & Coffee Break: 10:00-10:15**	**Physics Sciences** **Technical Session:** **Chair:** **Group photo & Coffee Break: 10:00-10:15**	
	12:00-13:30	Lunch Pacific Cafe（太平洋咖啡厅）		

Part II Keynote Speech

Biomedical & Life Sciences: Keynote Speech Session 1

Keynote Speech 1: Type I interferon signaling contributes to HCV and HBV persistent infections

Speaker: Prof. Limin Chen, Chinese Academy of Medical Sciences, China
Time: 08:30-09:15, Saturday Morning, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Host innate immunity, characterized by the activation of type I interferon signaling and NK cells, poses the 1st line of defense in many virus infections. Using cDNA microarray gene expession profiling, we successfully identified an 18-gene response signature that predicts whether a given patient will respond to the interferon-based therapy or not with 96% accuracy. Most of these genes are interferon stimulated (sensitive) genes (ISGs) and they are all up-regulated in treatment non-responders. We therefore identified an "ISG high" non-responder phenotype characterized by the over-activation of type I IFN signaling leading to increased expression of ISGs, especially ISG15/USP18 ubiquitin-sigaling pathway. Similar findings were observed in HBV non-responders. Further evidence on how increased ISGs affect treatment response status will also be discussed.

Keynote Speech 2: Nanobody's application in cell therapy

Speaker: Dr. Jishuai Zhang, Shenzhen PREGENE Biopharma Company, Ltd, China
Time: 09:15-10:00, Saturday Morning, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
The single domain antibody and its application in CART therapy
Bullet points:
The introduction for single-domain antibody.
The development and clinical effect of CART targeting BCMA using humanized single domain antibody as the antigen recognition domain.

Keynote Speech 3: TBD

Speaker: Prof. Rui Gong, Wuhan Institute of Virology, Chinese Academy of Sciences, China
Time: 10:00-10:45, Saturday Morning, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

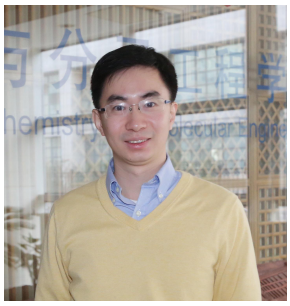
Abstract
TBD

Keynote Speech 4: Equations of Life: A Single Molecule Protein Folding Hypothesis

Speaker: Dr. Yi Fang, Australian National University, Australia
Time: 10:55-11:40, Saturday Morning, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
To resolve the protein folding problem, that is: predicting the native structure and describe the folding dynamics, we must work with the fundamental physical law that directly governs protein folding process. That law is the Thermodynamic Principle of Protein Folding, it is just the Second Law of Thermodynamics. In the protein folding case, the second law is that the Gibbs free energy achieves a minimum at the native structure.
Therefore, we have to figure out what is the Gibbs free energy. The question is, is there a Gibbs free energy function whose variables are all possible conformations of a given protein molecule? Or is it only a Gibbs free energy difference between the folded ensemble of protein molecules and its counterpart, the unfolded ensemble? The former is a microscopic view; the latter is a macroscopic view.

Keynote Speech 5: Chemistry-enabled tools for neuroscience



Speaker: Prof. Peng Zou, College of Chemistry, Peking University
Time: 11:40-12:25, Saturday Morning, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Neural functions arise through the complex interactions between biological macromolecules, physical forces, and chemical signaling. My research group aims to develop enabling technologies to study cells at these three levels at high spatio-temporal resolutions. In this talk, I will present our recent work on a novel chemical biology approach to label RNAs in live cells. Our method, called CAP-seq, capitalizes on light-activated, proximity-dependent RNA oxidation. The high spatial resolution and high sensitivity of CAP-seq enabled us to profile the local transcriptomes near the endoplasmic reticulum and the mitochondria. I will also present our newly developed far-red hybrid voltage indicators, which allow us to optically track neuronal population-level action potential spike trains over 10 minutes, with submicron and millisecond resolutions.

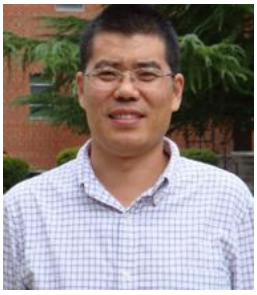
Keynote Speech 6: TBD

Speaker: Prof. Herlina Abdul Rahim, Universiti Teknologi Malaysia, Malaysia
Time: 12:25-13:10, Saturday Morning, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
TBD

Biomedical & Life Sciences: Keynote Speech Session 2

Keynote Speech 7: MicroRNA-regulated Mechanisms and it’s Application for Improving Crop Tolerance to Abiotic Stress



Speaker: Prof. Baohong Zhang, Department of Biology, East Carolina University, Greenville, USA
Time: 14:00-14:45, Saturday Afternoon, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
MicroRNAs (miRNAs) are an extensive class of endogenous, small RNA molecules that sit at the heart of regulating gene expression in multiple developmental and signalling pathways. Recent studies have shown that abiotic stresses induce aberrant expression of many miRNAs, thus suggesting that miRNAs may be a new target for genetically improving plant tolerance to certain stresses. These studies have also shown that miRNAs respond to environmental stresses in a miRNA-, stress-, tissue-, and genotype-dependent manner. During abiotic stress, miRNAs function by regulating target genes within the miRNA-target gene network and by controlling signalling pathways and root development. Generally speaking, stress-induced miRNAs lead to down-regulation of negative regulators of stress tolerance whereas stress-inhibited miRNAs allow the accumulation and function of positive regulators. Currently, the majority of miRNA-based studies have focused on the identification of miRNAs that are responsive to different stress conditions and analysing their expression profile changes during these treatments. This has predominately been accomplished using deep sequencing technologies and other expression analyses, such as quantitative real-time PCR. In the future, more function and expression studies will be necessary in order to elucidate the common miRNA-mediated regulatory mechanisms that underlie tolerance to different abiotic stresses. The use of artificial miRNAs, as well as overexpression and knockout/down of both miRNAs and their targets, will be the best techniques for determining the specific roles of individual miRNAs in response to environmental stresses.

Keynote Speech 8: Molecular Mechanism Underlying Genic Male Sterility and Biotechnology-based Male-sterility Systems for Crossing Breeding and Hybrid Seed Productionin Maize

Speaker: Prof. Xiangyuan Wan, University of Science and Technology Beijing, China
Time: 14:45-15:30, Saturday Afternoon, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
As one of the most important crops, maizenot only has been a source of the food feed, andindustrial feedstock for biofuel and bioproducts but also became as a model plant system for addressing fundamental questions in genetics. Male sterility is a very useful trait for hybrid vigor utilization and hybrid seed production. The identification and characterization of genic male-sterility (GMS) genes in maize and other plants have deepened our understanding of the molecular mechanismscontrolling anther andpollen development, and enabled the development and efficient use of many biotechnology-based male-sterility (BMS) systems for crop hybrid breeding. Here, I willreport the main progress on the identification and characterization of GMS genes such as ZmMs7, ZmMs20,ZmMs25,ZmMs30, and ZmMs33in maize, and construct a putative regulatory network controlling maize anther and pollen development by comparative genomics analysis ofthe GMS genes in maize, Arabidopsis and rice. Furthermore, I will introduce and appraise the features of more than a dozen BMS systems (e.g. MCS, DMS, SPT) for propagating male sterile lines and producing hybrid seeds in maize and other plants. Finally, I would like toprovide myperspectives on the studies of GMS genes and the development of novel BMS systems in maize and other plants. The continuous exploration of GMS genes and BMS systems will enhance our understanding of the molecular regulatory networks controlling male fertility and greatly facilitate hybrid vigor utilization in breeding and field production of maize and other crops.

Keynote Speech 9: In vitro propagation and DNA profiles of diploid and triploid cytotypes of Acorus calamus L.

Speaker: Prof. G. J. Sharma, Department of Botany, Manipur University, India
Time: 15:30-16:15, Saturday Afternoon, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract

Acorus calamus Linn. (sweet flag) is an important littoral plant widely used in traditional medicine since times immemorial. Four cytotypes, viz., diploid, triploid, tetraploid and hexaploid are found world-wide. Two cytotypes, viz., diploid and triploid are found in Manipur, India. Different cytotypes show wide variations in morphology and chemical composition of essential oils in rhizomes and leaves. The plant is used for anti-spasmodic, anti-diarrhoeic, anti-helminthic, anti-depressant and CNS anxiolytic properties, as tonic, stimulant and aphrodisiac, for treating rheumatism, toothache and respiratory ailments. Chinese medicine suggests its beneficial effects on memory disorder, learning performance and senescence. Bioactive molecules present are acorone, α-asarone, ß-asarone, asaryldehyde, caryophylene, isoasarone, methyl isoeugenol and safrol. β-asarone content varies with ploidy level. Triploids contain 7-7.8% β-asarone as against 73-88% in tetraploids. Diploids do not contain β-asarone which is a known carcinogen.. Clonal propagation and somatic embryogenesis of diploid and triploid cytotypes have been developed using dual-phase culture. Microrhizome induction for propagation has significance in conservational and sustainable development priorities. Accessions across nineteen different populations have been investigated. RAPD and ISSR markers have been employed for understanding genetic variabilities of the species. Amplification of genomic DNAs reveals 35.3% polymorphism. Marker indices and resolving powers indicate that ISSR markers are more efficient. Similarity matrix has been used to construct dendrogram based on UPGMA analysis and grouped accessions into two clusters in tune with ploidy level.

Figure: Acorus calamus in wild habitat (left) and rhizome (right)

References

1. N Sandhyarani, R Kishor, GJ Sharma (2011) Clonal propagation of triploid Acorus calamus Linn. using dual-phase culture system. Journal of Crop Science and Biotechnology 14(3): 85-95.
2. NS Devi, R Kishor, GJ Sharma (2012) Microrhizome induction in Acorus calamus Linn.- an important medicinal and aromatic plant. Horticultural and Environmental Biotechnology 53(5): 410-414.
3. NS Devi, R Kishor, GJ Sharma (2018): RAPD and ISSR molecular marker variations in Acorus calamus Linn., European Journal of Biomedical and Pharmaceutical Sciences 5: 651-656.
4. NS Devi, R Kishor, GJ Sharma (2019): Somatic embryogenesis through callus induction in low ß-asarone containing diploid Acorus calamus Linn., 2nd European Plant Science Conference, 18-19 October, Milan, Italy.

Keynote Speech 10: Element concentrations in plant as an indicator of the plant systematics

Speaker: Prof. Irina Shtangeeva, Institute of Earth Sciences, St. Petersburg State University
Time: 16:25-17:10, Saturday Afternoon, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Native populations of plants include different plant species that differ at physiological, biochemical, and genetic levels. We may assume that these specific features partially result from quantitative distributions of different macro- and trace elements in the plants. During recent years an impressive progress has been made in the understanding of the processes of uptake and pathways of various chemical elements in plants. It was shown that different genotypes may differ in the demands for mineral element supply and capacity of the element uptake, transport and involvement in the plant metabolism. Differences in the plant mineral nutrition have been recognized by both agronomists and molecular biologists. It has been assumed that each plant species has developed a specific element composition, and concentrations of different elements in a plant reflect first of all plant nutrient requirements rather than concentrations of the nutrients in soil. Different plants growing in the same place often have different concentrations of trace and macro-elements. It is important to remember that under ordinary conditions, each plant part may have its own characteristic concentrations of elements. Therefore, comparisons of element concentrations in plants may not be referred to the plant as a whole but should refer to the same plant parts (e.g. roots, or leaves, or seeds). Lastly, we may assume that not only concentration of one or another element in a particular plant part of any two plant species growing in the same environment may differ significantly but relations between elements in the plants may also be different.
In the present work we compared different plant species grown both in a field and in greenhouse. The basic idea was that not only concentrations of organic compounds but also contents of macro- and trace elements in the plant species, and probably relationships between elements in different parts of the plants, may be different. The aim was to assess and to try to explain the differences and similarities in the ability of the plants to uptake and translocate different elements. We also studied relationships between various elements in different parts of the plant species, stressing the importance of not only organic but also mineral components as an additional indicator of the plant classification.

Keynote Speech 11: Ethnobotanical and Nutraceutical Investigation of Edible Wild Fruits and Vegetables of Himalayan Region of Pakistan

Speaker: Prof. Arshad Mehmood Abbasi, COMSATS University Islamabad, Abbottabad Campus, Pakistan
Time: 17:10-17:55, Saturday Afternoon, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract

Present research work is based on Ethnobotanical and nutraceutical investigation of wild edible fruits and vegetables of Lesser Himalayas, Pakistan. Ethnobotanical information was obtained through informed consent semi-structured interviews, questionnaires, market survey and focus group conversation from different areas of Himalayan region of Pakistan. The plant samples were analysed for nutritional components, phytochemical constituents and antioxidant potential. A total of 80 wild edible plant species including 35 fruits and 45 vegetables were investigated. Inhabitant of the area used 50 medications based on wild edible fruits and 51 recipes based on wild edible vegetables to cure various ailments along with other ethnobotanical uses i.e. fooder, fuel, making agricultural tools, furniture, sheltering, fencing and as hedge plant etc. Moraceae and Papilionoideae were most quoted botanical families of wild fruits and vegetables. Morus nigra showed highest mean culture importance values (mCI) within top ten fruit plants, followed by Morus alba, Olea ferruginea, and Berberis lyceum. While among vegetables Ficus carica was most cited species, followed by Ficus palmate and Bauhinia variegata, and Solanum nigrum. Juglans regia and Cichorium intybus showed highest nutritional potential in fruits and vegetables, respectively. Potassium metal exhibited highest average levels, followed by Ca and Mg, while lowest levels were observed for Li, Cd and Cr in the fruit and vegetable samples. Significantly higher phenolics, flavonoids, flavonols, ascorbic acid contents and antioxidant activities were observed in Phoenix dactylifera and Juglans regia (Fruit), and Origanum vulgare, Amaranthus viridis, and Ficus palmate in vegetables. Mostly random and broad distribution of the nutrient, selected metals and phytochemical contents was found in the fruits and vegetables. Antioxidant activities revealed significant correlation with most of the phytochemical contents. Principal component analysis (PCA) revealed significant anthropogenic contamination of the selected metals in the fruits and vegetables mostly contributed by transportation activities, industrial emissions and domestic waste. Most of the wild edible plant species in the study areas have no protection, but acquisition of economic benefits such as genetic improvement of existing crops from their wild ancestors and nutritional requirement from these wild edibles might promote local people’s interest in the conservation and maintenance of these important and threatened species. Further exploration is still required to investigate useful and toxic compounds, pharmacological study; skill training in home gardening, biotechnological techniques to improve yields and income generation through large scale promotion of these wild edible fruits and vegetables.

Keynote Speech 12: Wood anatomical variations in L-34 clone of Populus deltoides Bartr. ex. Marsh

Speaker: Dr. PALLAVI GAUTAM, Dev Bhoomi Group of Institutions, Dehradun, Uttarakhand, India
Time: 17:55-18:40, Saturday Afternoon, December 7, 2019
Location: Shanghai Room (上海厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Poplars are among the world's fastest growing industrial woods which can be used as pure or mixed plantations as well as in association with agricultural crops. It offers great scope in meeting the growing needs of wood based industries besides providing extra income to farmers. Its wood has high timber and fiber value for industrial applications. In the present study, wood anatomical properties of wooden sample of Populus deltoides were studied. The samples were taken from the local wooden market. Wooden samples were collected from healthy, well-formed trees, with more than 30 cm diameter at breast height. The wood anatomical properties of fiber length, fiber diameter, vessel element length, vessel element diameter, wall thickness and specific gravity were examined. Physical properties such as specific gravity was investigated. These properties are important for studying the trends that vary from pith to periphery depending upon the species and anatomical features. The best known and most studied within-tree (ramet) variability in wood is the change from the tree centre (the pith) to the bark, which is frequently referred to as the characteristics of juvenile and mature wood. Maceration technique was used following Schultz's method. Collected data on wood anatomical properties were statistically analyzed for mean and standard deviation. Within-disc variations showed, that variations were non-significant for most of the wood traits whereas for pooled data variations were significant only for fiber length. The study concluded as, non-significant vertical, directional and radial variations for pooled data of Populus deltoides for most of the wood traits which contributes to the homogeneous appearance of wood properties.
Keywords: wood anatomy, specific gravity, within-tree (ramet) variability, Populus deltoides

Speakers to be confirmed:

Prof. Muhammad Akram, Government College University, Pakistan
Prof. Bhumi Nath Tripathi, "Indira Gandhi National Tribal University, India"
Dr.Saba Irshad, University of the Punjab, Lahore, Pakistan
Prof. Shujun Zhang, Huazhong Agricultural University
Prof. Genlou SunSaint, Mary's University, Halifax, NS, Canada
Prof. Dr. R. Aswati Nair, Central University of Kerala (CUK)
Prof. Fengqun Yu, Saskatoon Research and Development Centre, Agriculture and Agri-Food Canada (AAFC)
Dr. sambandam Ravikumar, Aarupadai veedu Medical college and Hospital
Dr. Akbar Dorgalaleh, Iran University of Medical Sciences

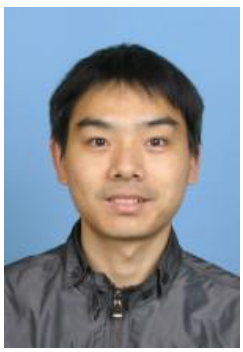
Physics Sciences: Keynote Speech Session 1

Keynote Speech 1: Combining multiphoton fluorescence microscopy with focal modulation for improved penetration depth

Speaker: Prof. Nanguang Chen, National University of Singapore, Singapore
Time: 08:30-09:15, Saturday Morning, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Nonlinear fluorescence microscopy methods, including two-photon and three-photon microscopic methods, have become increasingly popular in biomedical researches. Due to highly selective excitation of fluorophores, nonlinear light microscopes enjoy a much-improved imaging depth than single photon fluorescence microscopes. With the help of low-repetition femtosecond lasers, some groups have achieved greater than 1 mm penetration depths in mouse brain. We have been investigating the potential of combining nonlinear light excitation with focal modulation in attempt to further reduce the strong background and bring the penetration depth to 2 mm and above. We have focused on design issues of spatiotemporal phase modulator, a key component for additional background rejection. Various designs have been evaluated and optimized to achieve the best combination of modulation depth, background modulation, as well as spatial resolution.

Keynote Speech 2: Highly efficient nitride-based blue/green/ultraviolet light-emitting diodes



Speaker: Prof. Shengjun Zhou, Wuhan University, China
Time: 09:15-10:00, Saturday Morning, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Nitride-based light-emitting diodes (LEDs) have attracted considerable interest for their applications in solid state lighting, automotive front lighting, and high-resolution micro-display due to their inherent advantages such as long lifetime, high luminous efficiency, low power consumption, and compact volume. Owing to the large different in refractive indices between GaN and surrounding air, the light extraction efficiency of GaN-based LEDs is low caused by the total internal reflection (TIR) of the emanated light at the

GaN/air interface. This talk will outline the emerging challenges in the design and fabrication of micro/nano-structures for improving light extraction efficiency of GaN-based blue/green/ultraviolet LEDs. Recent development from our group in developing high-efficiency light-outcoupling micro/nano-structures, such as patterned dual-layer ITO, patterned SiO2 current blocking layer, nanoscale patterned sapphire substrate, sidewall nano-prism, embedded air cavity array, microstructured SiO2 lens, and metal wire gird transparent conductive electrode will be discussed. Moreover, the recent development in fabricating Mini-LEDs for high-resolution micro-display will also be introduced.

Keynote Speech 3: Measurement accuracy, design and calibration of optical fiber-based sensors in engineering based on strain transfer theory

Speaker: Prof. Huaping Wang, School of Civil Engineering and Mechanics, Lanzhou University, China
Time: 10:00-10:45, Saturday Morning, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Optical fiber sensors are the most promising technique in monitoring physical and chemical variables of engineering structures. For the brittle material characteristics, a bare sensing fiber is prone to breakage under the shear or torsional action existed in the construction and operation. To guarantee the survival and long-term service of the sensors, the packaging measure is particularly significant. This treatment generates an intermedium layer between the sensing fiber and the monitored structure, which leads to the strain of the host material not entirely transferred to the sensing fiber for a portion of strain loss in the transferring path. To correct the error and improve the measurement accuracy, strain transfer theory is developed to establish the quantitative strain relationship between the sensing fiber and the host material. A state-of-the-art review on strain transfer theory of optical fiber based sensors developed for civil structures is addressed. It aims to demonstrate the advance, the application and the challenge of strain transfer theory and provide scientific guidance for the better understanding of the multi-layered sensing model and the theoretical instruction for the optimum design, calibration and measurement accuracy enhancement of optical fiber sensors.

Keywords: optical fiber sensor, strain transfer theory, measurement accuracy, error modification, optimum design, civil engineering

Keynote Speech 4: Quantum cascade laser absorption spectroscopy and applications

Speaker: Prof. Jingsong Li, Anhui University, China
Time: 10:55-11:40, Saturday Morning, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract

Tunable diode laser absorption spectroscopy (TDLAS) is an excellent method for trace gas detection, since it presents advantages of high sensitivity, good selectivity, fast response and high temporal resolution. With the rapid development of laser fabrication technology, quantum cascade lasers (QCLs) have emerged as attractive laser sources for mid-infrared (MIR) spectroscopic applications. In this paper, state-of-the-art quantum cascade laser based TDLAS gas sensor is demonstrated as a promising new tool for noninvasive, real-time identification and quantification of trace gases in environmental atmosphere monitoring and isotope analysis, human breath gases diagnosis, gas exchange process between soil and atmosphere, and Volatile Organic Compounds (VOCs) analysis and remote sensing, etc.

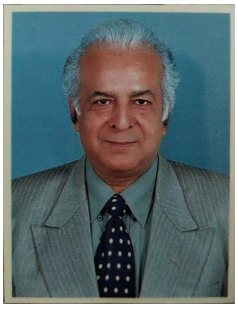
Keynote Speech 5: Optical fiber sensors engineered with femtosecond lasers

Speaker: Prof. Xuewen Shu, Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, China
Time: 11:40-12:25, Saturday Morning, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract

Femtosecond lasers have become a very powerful and convenient tool to fabricate micro-/nano-structures in different materials and waveguides. Based on refractive index modification, femtosecond laser inscription technique can directly fabricate a variety of structures such as gratings, interferometers and waveguides with great flexibility. In this talk, we will review our past and recent research work on the development of optical fiber sensors based on femtosecond laser inscription technique. We will discuss various kinds of micro-structures fabricated with femtosecond laser in optical fiber and demonstrated their applications as sensors for measuring different physical parameters.

Keynote Speech 6: UNCONVENTIONAL LASERS



Speaker: Prof. Kamal Nain Chopra, Former Scientist G, Laser Science and Technology Centre (LASTEC), DRDO, India
Time: 12:25-13:10, Saturday Morning, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract

A lot of literature, especially books on the conventional lasers like Solid state lasers, Gas lasers, and Semiconductor lasers is available. However, not many efforts seem to have been made on writing books on unconventional lasers. This Keynote Address is a small but sincere effort of the author to make available very useful information on this topic, especially from the research point of view. In addition, the technical analysis of the theoretical aspects of these lasers along with the modeling and designing considerations for maximizing the efficiency of these lasers has been presented in this Keynote Address. Apart from discussing the theoretical modeling and designing of these lasers some related experimental results available in the literature have been presented to make the presentation clear and meaningful. Nearly all types of unconventional lasers including X-ray FELs (XFELs), GaSb-based Type-I Diode Lasers Photonic crystal based lasers, Phase Conjugated Lasers, Quantum Cascad Lasers, and Diode pumped Fiber Lasers, have been covered. All these types of lasers are having many useful applications in various fields like Industry, surgery, biology, and novel imaging techniques, apart from their usage in practical research applications in most of the scientific and engineering topics. In the field of medicine, these lasers are applied on several areas, including dermatology, in which they are used to skin tone more even. Vascular skin lesions are known to contain oxygenated hemoglobin, which has the characteristic of strongly absorbing the visible light at 418nm, 542nm and 577 nm, and the pigmented skin lesions contain melanin, which has a wide range of absorption in the visible and IR wavelength regions. The Phase Conjugated Lasers are very useful for certain applications like – nullifying the optical distortion and also achieving some novel characteristics of the lasers. The Fiber laser along with the Raman converter module is capable of the efficient spectral conversion of its unique combined ultra-short radiation pulses into longer-wavelength spectral domain of 1150 to 1550 nm. Tourmaline Ytterbius-1100 has many applications like - time-resolved spectroscopy, Raman spectroscopy, micro- and nano-photonics, supercontinuum generation, fluorescence-lifetime imaging microscopy, and optical DNA sensing technology. The Unconventional Lasers based on Photonic crystals are very useful for certain applications like – data storage, biomedical applications, and display technologies. GaSb-based Type-I Diode Lasers Operating in the Optical Spectral Region are very useful for a variety of applications including trace gas sensing, free-space optical communications, and infrared countermeasures. The field of Quantum Cascaded Lasers (QCLs) has recently grown fast due to the fact that these lasers are having great advantages over the other semiconductor lasers, and consequently have found newer applications. Higher Powers from Femtosecond Fiber Lasers have become very useful for a variety of applications including laser processing, medical bio-optics, and opto-electronics The studies on the Cr:Colquiriite lasers - Cr:LiSaF and Cr:LiCaF Lasers, have

also drawn the attention of various researchers , because of their main advantage, that they can be pumped by diodes (GaInP / AlGaInP QW), and therefore, are quite compact and inexpensive. Ti:sapphire lasers are popular and important because of the fact that they (i) are tunable lasers, capable of emitting red and near-IR radiations in the spectral region 650nm to 1100 nm, and (ii) generate ultra short pulses. Because of these characteristics, they have become very handy for carrying out scientific research. As is well known, the Random lasers have also been drawing the attention of various researchers because of their unique theory, fabrication, and properties. It has now been well understood that this Novel laser produces random mid-infrared light, and because of the great advantage of its capability of removing speckling, has important applications in the systems requiring high image quality e.g. airport security. Raman Lasers, Spin lasers, and ultrafast mid – IR lasers are also useful in research and other upcoming fields. The amazingly high intensities of X-ray free-electron lasers - 108 – 1010 times greater than the ordinary laboratory sources, have led to their great application in the very highly specialized areas of scientific research.

Physics Sciences: Keynote Speech Session 2

Keynote Speech 7: Principle, Structure and Characteristics of MOS Gas Sensors Assisted by Ultrasound

Speaker: Prof. Junhui Hu, Nanjing University of Aeronautics and Astronautics, China
Time: 14:00-14:45, Saturday Afternoon, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
The metal oxide semiconductor gas sensor has the merites such as fast response, quick recovery, good durability, long working life, lower cost, and excellent portability. An improvement in its sensitivity and selectivity will definitely widen its application range. The existing methods for improving its sensitivity include the utilization of nano porous sensing materials, doping, optimization of the grains of sensing materials, and UV light irradiation. The existing methods for improving its selectivity include the doping and working temperature modulation. Recently, the author’ s research group proposed a new strategy not only capable of significantly raising the sensitivity of MOS gas sensors, but also providing a possibility to identify various reducing and oxidizing target gases. The strategy utilizes ultrasonic radaition to enhance the target gas transfer onto the sesning layer, to change the sensing chanracteristics of a MOS sensor. In this talk, the principle, structure and characteristics of MOS gas sensor systems assisted by ultrasound will be given, as well as their potential applications.

Keynote Speech 8: New sound technology with broad band resonators to stop the sound and eliminate noise

Speaker: Prof. Feo V Kusmartsev, Department of Physics, Loughborough University,UK
Time: 14:45-15:30, Saturday Afternoon, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
A new technology for sound attenuation based on a broad band resonating system has been developed. A plurality of nested broad band resonators can be used to form an acoustic shield protecting against sources of unwanted noise in a very broad spectrum. The technology has the advantage of having spaces between each resonator, in stark contrast to conventional solid sound barriers. We aim to use this technology to create novel acoustic barriers for use in a number of situations but specifically: Alongside roads/rail in applications where a combination of soundproofing and air flow is needed. No currently available sound barriers for road/rail use enable penetration of both air and light whilst simultaneously providing sound attenuation. Around machinery (air-conditioning units, fixed industrial machinery, pneumatic drilling) where the environment needs to be protected from sound whilst still maintaining airflow around the machinery. I will present detailed design concepts, optimised to application, with full scale working prototypes built.

Keynote Speech 9: Investigation on ultrasonic motors for ventricular assist devices

Speaker: Prof. Yang Ming, Shanghai Jiaotong University, China
Time: 15:30-16:15, Saturday Afternoon, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Background: Worldwide the number of heart failure patients exceeds 23 million, in which 5-10% of total heart failure patients may become unresponsive to conventional treatments. Although heart transplantation is a gold standard of treatment for heart failure, heart transplantation is limited by the availability of donor hearts. Fortunately, rapid advances in technology have enabled durable mechanical circulatory support emerged as an increasingly viable therapeutic option for treatment of heart failure patients as bridge

to heart transplantation, or life time support as destination therapy. These mechanical circulatory support devices provide effective hemodynamic support, high device reliability and significant improvements in patient status.However mechanical circulatory support therapy is accompanied severe adverse complications including pump thrombosis, bleeding, stroke, and right ventricle failure, which are mainly associated with the electromagnetic actuators.

Methods: To develop a ventricular assist device with low rate of adverse complications, several actuating technologies are investigated in terms of response time, thrust force, weight, volume, and controllability. No commercial product is available meeting the requirements. To explore the feasibility of ultrasonic motors, the long lifetime drive of traveling wave ultrasonic motors, heat dissipation, and stable vibration tracking technologies are investigated to be the actuator of ventricular assist devices. Finally, a pulsatile blood pump prototype is developed and investigated in a mocked circulatory system.

Results: A flow of 5L/min is achieved with an average after load of 100mmHg with a size close to the continuous flow ventricle assist device. A shifting vortexflow is found in blood chamber to form a persistent rotational flow pattern through the cardiac cycle， similar to the blood flow in the left ventricle.

Keynote Speech 10: Four Algorithms for Boundary Control with Breaking in Space and Time

Speaker: Prof. Vladimir Arabadzhi, Institute of Applied Physics (RAS), Russia
Time: 16:25-17:10, Saturday Afternoon, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Typically, active control systems either have a priori complete information about the boundary-value problem and damped waves before switching on, or get it during the measurement process or accumulate and update information online (identification process in adaptive systems). In this case, the boundary problem is completely imprinted in the information arrays of the control system. However, very often complete information about a boundary-value problem is not available in principle or this info is changing in time faster than the process of its accumulation. The article considers examples of boundary control algorithms based almost without information. The algorithms presented in the article cannot be obtained within the framework of the harmonic representation of the problem by complex amplitudes. And these algorithms carry out fast control in microstructured boundary problems. It is shown that in some cases it is possible to find simple solutions if we remove restrictions: (a) on the spatio-temporal resolution of controlling

elements of a boundary-value problem (and these are not methods of analytic extrapolation); (b) on the high-frequency radiation of the controlled boundary.

Keywords
Incident Low Frequency Wave, High Frequency Technological Radiation, Fast Control in Microstructured Boundary Problems, Binary Breaker, Breaker-Inverter Length of Damping, Inverter, Spinning Acoustic Blades, Gas Stream.

Keynote Speech 11: TBD

Speaker: Prof. Ji Wang, Ningbo University, China
Time: 17:10-17:55, Saturday Afternoon, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
TBD

Keynote Speech 12: TBD

Speaker: Prof. Haiquan Zhao, Southwest Jiaotong University, China
Time: 17:55-18:40, Saturday Afternoon, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
TBD

Keynote Speech 13: TBD

Speaker: Prof. Hornsen (H.S.) TZOU, NANJING UNIVERSITY AERONAUTICS AND ASTRONAUTICS, China
Time: 18:40-19:25, Saturday Afternoon, December 7, 2019
Location: Hongkong Room (香港厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
TBD

Physics Sciences: Keynote Speech Session 3

Keynote Speech 14: Challenge to Black Hole Models and Supernova explosion driven by Magnetic Monopoles

Speaker: Prof. Qiuhe Peng, Department of Astronomy, Nanjing University, China
Time: 08:30-09:15, Sunday Morning, December 8, 2019
Location: Tokyo Room (东京厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
1) A unusually strong radial magnetic field detected near our Galactic Center (2013) is consistent with the prediction from our model of supermassive object with magnetic monopoles (MM) (Peng and Chou 2001). The important implications of the unusually strong radial magnetic field near the GC are: a) A strong evidence of the existence of MM; b) The black hole model of the suppermassive object at the GC is nonphysical (Peng et al., 2016; 2017).
c) MM may catalyze nucleon decay (Rubakov -Callen effect) may be real.
2) I shall also give query on the black hole models for other quasars and active galactic nuclei. The key dilemma of the black hole model is the question on the BH mass at the center of AGNs. However, the dilemma will disappear in our model of Supper-massive Stars with MM.

3) Taking the RC effect as an energy source, we have proposed an unified model for various supernova explosion (Peng et al. 2017). In our model, the remnant of the collapsed core of supernova is still a neutron star rather than a black hole no matter how huge of the supernova mass. That means, black holes with stellar mass are impossible to be formed through supernova explosion.

4) We may explain the physical reason of the Hot Big Bang of the Universe with the similar mechanism of supernova explosion by using the RC effect as an energy source. That is , the primordial Black hole of the whole Universe is no physical.

Reference

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2) Qiu-He Peng, Jing-Jing Liu and Chi-Kang Chou, 2016
"A possible influence on standard model of quasars and active galactic nuclei in strong magnetic field", Astrophys Space Science (2016) 361:388

3) Qiu-He Peng, Jing-Jing Liu and Zhong-Qi Ma, 2017,
"Some new possible anticipated signals for existence of magnetic monopoles?"
New Astronomy, 57 (2017)59-62

4) Peng Q. and Chou C., 2001, "High-Energy Radiation From a Model of Quasars, Active Galactic Nuclei, And the Galactic Center With Magnetic Monopoles",
ApJ., 551(2001) L23-L26

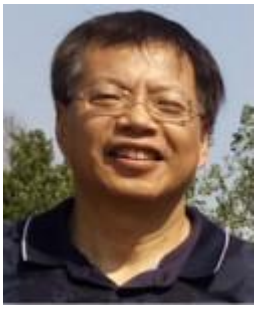
5) Qiu-He Peng , Jing-Jing Liu and Chih-Kang Chou, 2017," A unified model of supernova driven by magnetic monopoles" ,Astrophys Space Science , 2017, 362;222

Keynote Speech 15: On the kinematics of Jet motion of Black hole systems

Speaker: Prof. Biping Gong, Huazhong University of Science and Technology

Time: 09:15-10:00, Sunday Morning, December 8, 2019

Location: Tokyo Room (东京厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya



Abstract

Faster than light or superluminal motion was originally predicted as a relativistic illusion of ballistic moving ejecta, and confirmed in a number of sources observationally. However, the recent results of the long bas line observations display vertical acceleration motion of ejecta, which are unexpected by the ballistic scenario.

This indicates the existence of non-ballistic jet motion, in which a continuous jet produces a discrete hot spot. And the precession of such a hot spot in the plane of the sky appears superluminal. Therefore, a unified and simple interpretation to the new results is obtained, which is of importance in the understanding of the nature of superluminal motion, the interaction of jets and surrounding materials, as well as the common physics underlying quasars and microquasars.

Energy Engineering: Keynote Speech Session

Keynote Speech 1: Industrialization of Triumph Group CIGS Thin Film Module

Speaker: Prof. Genbao Xu, Triumph Photovoltaic Materials Co.Ltd., China
Time: 08:30-09:15, Saturday Morning, December 7, 2019
Location: Tokyo Room (东京厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
The report mainly describes the basic knowledge and development of CIGS module, and the strategy and progress of CIGS thin film module of Triumph Group. The report will be divided into five parts: 1) Introduction of CIGS industrialization of Triumph Group, including development history, strategy and the technical origination; 2) Brief review of CIGS solar mechanism, such as the power generation principle and CIGS process flow; 3) Introduction of research and development as well as construction of manufacturing base of CIGS, i.e. the founding of Triumph Photovoltaic Materials Co. Ltd. (TPVM) and its progress of R&D and mass production; 4) Development status and prospect of Triumph Group for CIGS, which emphasizes on the technological advantages and development status as well as its future development plans; 5) BIPV application of CIGS module, such as applying CIGS module to factory building, office building and Stadium, etc.

Keynote Speech 2: The recycling of various wastes for the electrode materials rechargeable battery

Speaker: Prof. Hongying Hou, Kunming University of Science and Technology, China
Time: 09:15-10:00, Saturday Morning, December 7, 2019
Location: Tokyo Room (东京厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
In this article, the rapid development of modern social economy and the growth of the population inevitably result in the production of a large quantity of various industrial wastes or domestic garbages such as waste Cu circuit printed board etchant, waste Cu scraps, expired medicine, waste cigarettes butts etc. Therefore, in order to stimulate the circular economy mode and protect the environment, it is urgent how to reasonably these wastes. For this purpose, the investigations of a series of wastes were carried out by various methods and routes such as thermal routes, sol-gel, high temperature solid reaction, electrodeposition, liquid reaction and so on. Resultantly, a series of function materials with controllable morphology were obtained, as shown in

the following figures. Furthermore, the corresponding application feasibilities as the electrode materials in the rechargeable batteries were also evaluated. Thus, both the circular economy and low consumption of fresh raw mineral materials would be achieved, which no doubt facilitate the sustainable development and the harmony between the people and the natural environment.

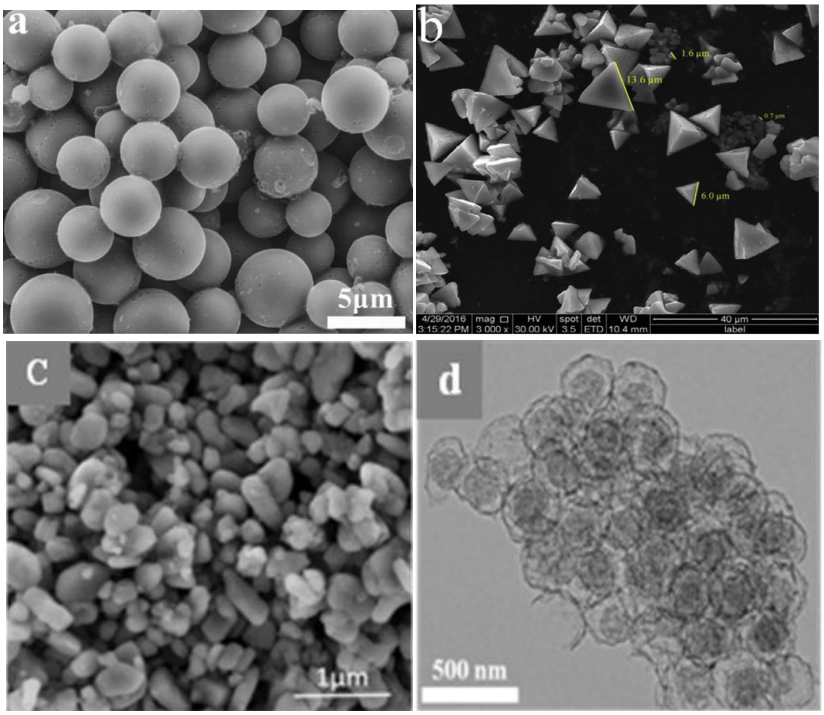


Fig.1 SEM images of (a) N-doped carbon microspheres derived from expired vitamin B1 injection, (b) tetrahedron-like CuCl from waste Cu scraps, (c) $LiFePO_4$/C powders from expired medicines of lithium carbonate and ferrous sulfate; (d)TEM image of N/S co-doped hollow nanospheres derived from waste donkey-hide gelatin pulp;.

Keynote Speech 3: Strong Electro-Chemo-Mechanical Coupling in High-Capacity Electrode Materials

Speaker: Prof. Hui Yang, Department of Mechanics, Huazhong University of Science and Technology, China
Time: 10:00-10:45, Saturday Morning, December 7, 2019
Location: Tokyo Room (东京厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
The growing demand for low-cost, high-performance rechargeable battery techniques for portable electronics, hybrid electric vehicles, and large-scale energy storage has stimulated the relentless search for new electrode materials. The successful development and application of such newly identified materials necessitate a fundamental understanding of the electrochemical and mechanical properties of the materials, as well as the intrinsic electro-chemo-mechanical coupling mechanisms

in these materials. In this talk, I will present a combined experimental and computational investigation of deformation and failure in high-capacity electrode materials such as silicon, germanium, carbon nanotube, and graphene for their use in advanced rechargeable batteries. The strong coupling between electrochemical charging/discharging kinetics and mechanical stress in these high-capacity electrode materials will be uncovered, which will shed light on the design of new generation failure-resistant electrodes.

Keynote Speech 4: Photovoltaic Chiral Magnetic Effect in Topological Semimetals

Speaker: Prof. Katsuhsia Taguchi, Yukawa Institute for Theoretical Physics, Kyoto University, Japan
Time: 10:45-11:30, Saturday Morning, December 7, 2019
Location: Tokyo Room (东京厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract

Electrons have two properties, charge and spin. While the technology that controls the degree of freedom of charge is conventional electronics, "Spintronics" is a new technology that controls both "charge" and "spin", which are the basic properties of electrons. Hence, spintronics could bring innovation to electronics, which is a control technology by charge degrees of freedoms. Recently, a study of electronics and optics in topological materials (e.g., Dirac semimetal [1], Weyl semimetal [2], and line-node semimetals [3]), which host Dirac and Weyl fermions in bulk, have been attracting much attention. The properties of Dirac and Weyl fermions have been both theoretically and experimentally studied in many fields of physics. These fermions drive unconventional transport and optical responses [4]. These phenomena could be applicable to novel electrical and optical functional devices in future.

Among these characteristic phenomena in topological materials, in this talk, we will present a study of light-induced charge current (dubbed as photovoltaic chiral magnetic effect) in Weyl semimetal [5]. Here, the photovoltaic chiral magnetic effect is caused when we apply circularly polarized light in Weyl semimetals with time-reversal symmetry. The applied circularly polarized light generates the charge current along the light propagation direction. Its charge flow is controllable by chirality of the circularly polarized light via inverse Faraday effect [6].

Besides, we will talk the study of photovoltaic anomalous Hall effect in line-node semimetals (e.g., Ca_3P_2). The photovoltaic effect is the optical anisotropic, and it could be applicable to photodetector based on the line-node semimetals [7].

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[6] A. Kirilyuk, A. V. Kimel, and T. Rasing, Rev. Mod. Phys. **82**, 2731 (2010).
[7] K. Taguchi, D.-H. Xu, A. Yamakage, and K. T. Law, Phys. Rev. B **94**, 155206 (2016).

Keynote Speech 5: Storage of Renewable Energy and Hydro Potential

Speaker: Prof. Mamata Kumari Padhy, Mechanical Engineering Department ,ITER, SOA Deemed to be University, India
Time: 11:30-12:15, Saturday Morning, December 7, 2019
Location: Tokyo Room (东京厅), 3rd Floor, Conference Building, International Asia-Pacific Convention Center Sanya

Abstract
Energy plays a key role in economic growth of a country. It is obligatory to produce the required amount of energy with prominent productivity for fulfillment of human need and social advancement. There are different sources of renewable energy available viz. small hydro, wind energy, biomass, solar energy, geothermal, tidal power etc. Consider remote areas, villages in Himalayan range, Small Island; where grid connection is a difficult task. These people usually depend on renewable energy sources. If managed systematically, these areas can be provided with electricity uninterruptedly by renewable energy sources with energy storage facility. All renewable energy sources has their own limitations, so the available energy should be stored when it is surplus. The present topic discusses about the different storage process and facilities.

Speakers to be confirmed:

Dr. Mohamed Salem Badawi, Beirut Arab University, Beirut, Lebanon
Dr. K. N. Shinde, Département of Physics, N.S. Science and Arts College, Bhadrawati, India
Dr. Marshall Porterfield, Purdue University
Dr. Yun Wang University of California, Irvine
Prof. Tao Ma Shanghai Jiao Tong University

Part III Technical Sessions

Biomedical & Life Sciences: Technical Session

Session Chair:

Hongkong Room (香港厅), 3rd Floor, Conference Building 08:30-12:00, Sunday Morning, December 8, 2019

ID	Paper Title	Author	Affiliation
08:30-08:45	Variations in Hepatitis B virus genome and their importance on disease progression	Ahmed A. Al-Qahtani	King Faisal Specialist Hospital & Research Centre, Saudi Arabi
08:45-09:00	Phosphorylation of AMMECR1at Serine16 is not essential for its nuclear localization	Huamin Zhou	Xiamen University
09:00-09:15	Matrix Softening Induces Inflammatory Signals of Endothelial Cells	Weicong Chen	Shanghai Jiao Tong University
09:15-09:30	Transcriptomic profiling of microglia and astrocytes throughout aging	Pan Jie	Communist Party member
09:30-09:45	Response of the rhizosphere fungi community diversity and structure of massion's pine inoculating with Suillus luteus in Mining area	Peiyi Yu	Central South University of Forestry and Technology
09:45-10:00	Fomitopsis pinicola collected from British Columbia, Canada has anti-proliferative activity	Jiazhi Da	University of Northern British Columbia
10:00-10:15	A polyU polymerase CDE-1 suppresses the production of antisense ribosomal siRNA by coupling 3'-end polyuridylation and degradation of 26S rRNA	Yun Wang	Huainan Normal University
10:15-10:30	**Coffee Break**		
10:30-10:45	LC Domain Mediated Coalescence Is Essential for Otu Phase Separation and Enzymatic Activity	Qingshuang Cai	Anhui Agricutural University
10:45-11:00	Sequencing and Analysis of Transcriptome on Leaf of Swida wilsoniana of the Woody Oil Plant	Zhou Xiao	Central South University of Forestory and Technology, College of Life Sciences and Technology

11:00-11:15	Deficiency of apoptosis-stimulating protein 2 of p53 protects mice from acute hepatic injury induced by CCl4 via autophagy	SHI HONGBO	Beijing Institute of Hepatology, Beijing Youan Hospital, Capital Medical University
11:15-11:30	Single-Cell RNA Sequencing Analysis Reveals Sequential Cell Fate Transition during Human Spermatogenesis	Gang Chang	Shenzhen University
11:30-11:45	Aurora Kinase inhibitor Tozasertib Suppresses the Mast Cell Activation In Vitro and In Vivo via Downregulating Cellular NF-κB and MAPK Pathways	Jia-jie Chen	School of Medicine, Shenzhen University
11:45-12:00	Phytosociology – the useful tool of assessment of past and future human impact on plants and forest ecosystems	Monika Konatowska	Poznań University of Life Sciences
12:00-12:15	Preliminary Analysis of Sapindus mukorossi Extracts from Different Sources for their Antifungal Potential against Forest Fungi	Prerana Badoni	Dev Bhoomi Group of Institutions, Dehradun, Uttarakhand, India
Poster	CircTulp4 functions in Alzheimer's disease pathogenesis by regulating its parental gene, Tulp4	Nana Ma	Biomedical Research Institute, Shenzhen Peking University - The Hong Kong University of Science and Technology Medical Center
Poster	Lanosterane triterpenes with anti-inflammatory activities from the fruiting bodies of Inonotus obliquu	Rongwei Kou	Northwest A&F University
Poster	Bioactive Aromadendran Sesquiterpenes from the fruits of Pittosporum tobira	Yao Liu	Northwest A&F University
Poster	Thiodiketopiperazines with Tyrosinase Inhibitory Activity from The Endophytic Fungus Phaeosphaeria fuckelii	Yijie Zhai	Northwest A&F University
Poster	Study on desensitization of raw lacquer and its antibacterial activity	Chen Fan	Northwest A&F University

Poster	Bioactive Cassane Diterpenes from the stem of Ceasalpinia pulcherrima	Jiayao Zhang	Northwest A&F University

Physics Sciences: Technical Session

Session Chair:

Tokyo Room (东京厅), 3rd Floor, Conference Building 8:30-12:00, Sunday Morning, December 8, 2019

ID	Paper Title	Author	Affiliation
Keynote Speech	Challenge to Black Hole Models and Supernova explosion driven by Magnetic Monopoles	Prof. Qiuhe Peng	Department of Astronomy, Nanjing University, China
Keynote Speech	On the kinematics of Jet motion of Black hole systems	Prof. Biping Gong	Huazhong University of Science and Technology
10:00-10:15	**Coffee Break**		
10:15-10:30	High resolution photoacoustic tomography system for whole mouse brain imaging based on full-ring ultrasound array	Lijun Deng	Guangdong University of Technology
10:30-10:45	Forest-Fire Recognition by Sparse and Collaborative Subspace Clustering	Zhen Ye	Chang'an University
10:45-11:00	The precise analytical modeling and measurement of the fractional thermal loading in a laser medium	Yaoting Wang	Xi'an Technological University
11:00-11:15	NUMERICAL STUDIES OF BPF PRESSURE PULSATION IN CENTRIFUGAL VENTILATORS	Sergey Timushev	Moscow Aviation Institute
11:15-11:30	Assessment of Whole-body vibration produced by machines used in processing of mineral raw materials	Jacek Zajac	Central Institute for Labour Protection - National Research Institute
11:30-11:45	Measurements of vibration using a high-speed camera – preliminary tests	Piotr Kowalski	Central Institute for Labour Protection – National Research Institute, Warsaw, Poland

11:45-12:00	Acoustic method; Frequency spectrum; Leakage; Gas pipelines	Rui Xiao	School of Civil Engineering, Tongji University, China
12:00-12:15	VIBRATION CONTROL OF A TRACKED VEHICLE DRIVER SEAT VIA MAGNETORHEOLOGICAL DAMPER	Wael Ata	Staff Member in Mechanical Engineering Department
12:15-12:30	Experimental methods of radiation hardness research of ITER Si photodiode array	Chaozhi Li	University of Science and Technology of China
12:30-12:45	A Novel Highly Reliable and Low-power Radiation Hardened 14T SRAM bitcell design	Dianpeng Lin	Shanghai Institute of Microsystem and Information Technology
Poster	Monte Carlo simulation of echo signal in airborne laser underwater detection	Xiongfei Zou	Civil Aviation Flight university of China
Poster	Photonic microwave frequency division and multiplication utilizing one dual-frequency integrated laser	Jin Li	PLA Army Engineering University, Communications Engineering College
Poster	Simultaneous measurement of curvature and temperature based on a single fiber Bragg grating	Xuewen Shu	Huazhong University of Science and Technology, Wuhan National Laboratory for Optoelectronics, Wuhan, China

Energy Engineering: Technical Session

Session Chair:

Tokyo Room (东京厅), 3rd Floor, Conference Building 14:00-18:00, Saturday Afternoon, December 7, 2019

ID	Paper Title	Author	Affiliation
14:00-14:45	TBD	Yun Wang	University of California, Irvine
14:45-15:30	TBD	Tao Ma	Shanghai Jiao Tong University
15:30-15:45	**Coffee Break**		
15:45-16:00	The method of testing for asbestos in electronic and electric products through polarizing microscope and X-ray diffraction	Hongwei Wang	Chinese Academy of Inspection and Quarantine
16:00-16:15	Numerical studies of divided aperture techniques in confocal system	Haonan Lai	Ulinkcollege
16:15-15:30	Effect of Oxygen Addition on Structural, Optical and Morphological Properties of Ultrathin ZnO Films Deposited by RF Magnetron Sputtering	Na-Fu Wang	Department of Electronics, Cheng Shiu University, Kaohsiung, Taiwan
16:30-16:45	Development and Performance Evaluation of Self-Generating Enhanced Foam water plugging system	Liu Chang	School of Petroleum Engineering, China University of Petroleum
16:45-17:00	Mechanical behavior and microstructure deformation of membrane and catalyst layer of PEMFC	Cong Feng	Tongji University
Poster	Application and Practice of High-precision Solar Resource Monitoring Technology in Photovoltaic Power Plant Area	Rong Zhou	China Renewable Energy Engineering Institute, Beijing, China

Part IV Technical Sessions Abstracts

Part V Instructions for Presentations

Oral Presentation

Devices Provided by the Conference Organizing Committee:

- Laptops (with MS-office & Adobe Reader)
- Projectors & Screen
- Laser Sticks

Materials Provided by the Presenters:

- PowerPoint or PDF files

Duration of each Presentation:

- Regular Oral Session: 10-15 Minutes of Oral Presentation
- Keynote Speech: 40-45 Minutes of Keynote Speech

Poster Presentation

Materials Provided by the Conference Organizing Committee:

- X Racks & Base Fabric Canvases (60cm×160cm, see the figure below)
- Adhesive Tapes or Clamps

Materials Provided by the Presenters:

- Home-made Posters

Requirement for the Posters:

- Material: not limited, can be posted on the Canvases
- Size: smaller than 60cm×160cm
- Content: for demonstration of the presenter's paper

Part VI Hotel Information

About Hotel

International Asia-Pacific Convention Center Sanya is a five star standard luxury hotel, which locates beside the seashore, and is the ideal place for vacation and conference. The hotel has 254 luxury and comfortable rooms, and 16 conference rooms in different sizes. The conference rooms can accommodate people from 20-1000 and totally square 5400m2. Housing, dining, recreation facilities… everything needed is ready, Even National initiative seawater swimming poor, sea recreational centre and so on, which make you a pleasant vacation. High-speed net connectors are equipped in the houses and service of renting laptops is provided, all these give you a convenient office atmosphere while you are on vacation.

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URL: www.iapccsanya.com

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Fax: (86 898) 88332266

How to Get to the Hotel

Downtown of Sanya: 30 minutes ride
Sanya Phoenix Airport: 15 minutes ride
Sanya International Golf Club: 20 minutes ride
End of the Earth: 10 minutes ride

For non-Chinese author, please show the following info to the driver if you take a taxi:

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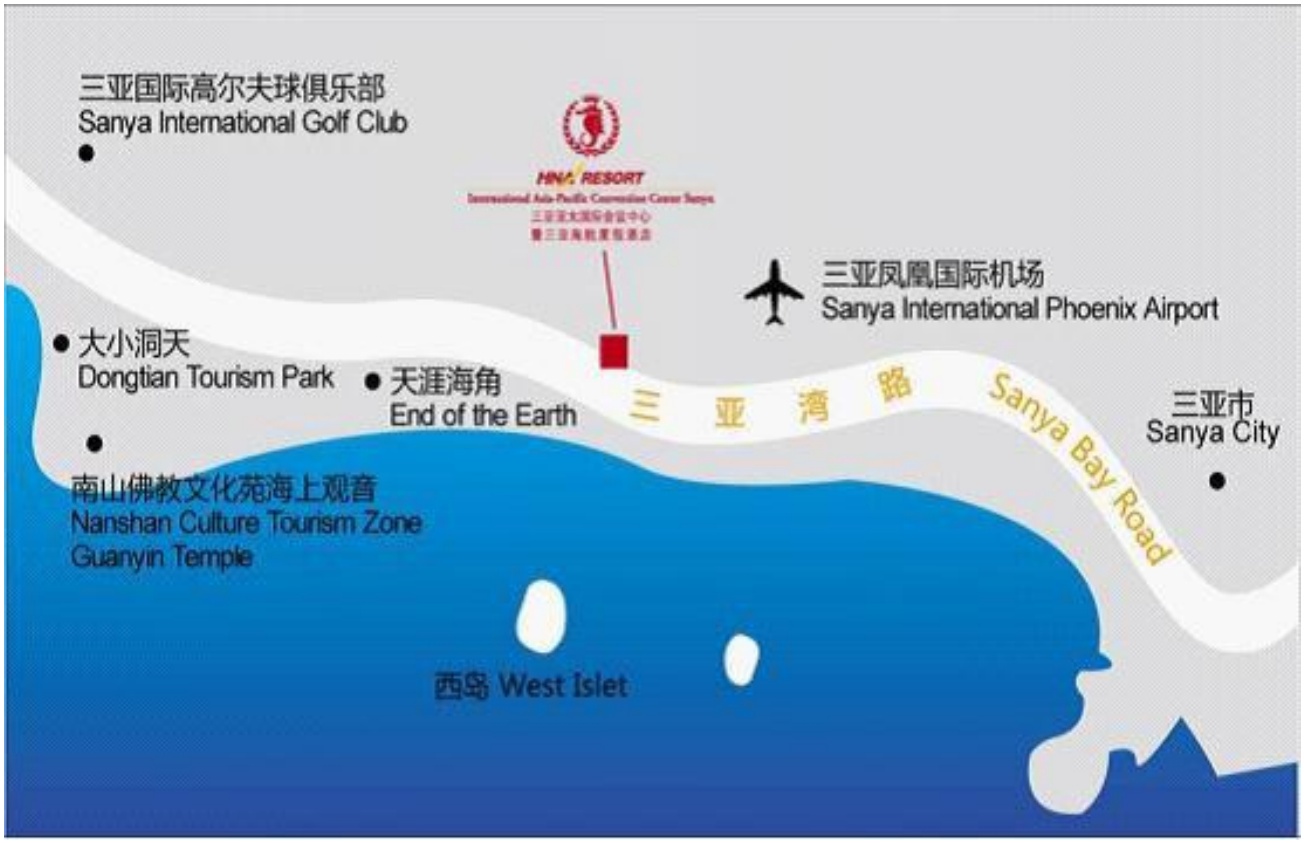

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