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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 Minutes of Presentation
- Plenary Speech: 30 Minutes of Presentation

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

Guilin Grand Link Hotel (桂林桂山华星酒店) locates on the bank of Li River in the beautiful city of Guilin which enjoys the fame as "having the best scenery in China". Facing the city badge the Elephant Trunk Hill across the river and adjacent to the Seven Star Park and ZiZhou Island Park. It is only 10 minutes' ride to the downtown city, the railway station, the Hi-tech Industrial Zone and International Exhibition & Conference Center, 45 minutes to Guilin Liangjiang International Airport. It is the only luxury garden resort hotel on the Li River bank and near the gardens.

Address: No. 42 Chuanshan Road, Guilin City, Guangxi Zhuang Autonomous Region, China (中国广西壮族自治区桂林市穿山路 42 号)

URL: www.guishanhotel.com

Tel: +86-773-319 9999

Fax: +86-773-319 9998

For non-Chinese author, please show the following info to the driver if you take a taxi: **请送我到:** 中国广西壮族自治区桂林市穿山路42号 桂林桂山华星酒店

Transportation

Downtown 2.56 km

Guilin Liangjiang International Airport29.47 kmGuilin Railway Station3.47 km

Guilin North Railway Station8.70 kmXiangshan Scenic Spot2.91 kmTwo rivers and four lakes3.58 km

Contact Us

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Part I Conference Schedule

Time: July 19-21, 2019

Location: Grand Link Hotel(桂林桂山华星酒店), Guilin, China

Date	Time	Lobby, Grand Link Hotel		
July 19	14:00-17:00	Registration		
Date	Time	Conference 4 [象山厅] 2 nd Floor	Conference 5 [叠彩厅] 2 nd Floor	Conference 7 [临桂厅] 2 nd Floor
	00 40 10 00	Mathematics: Invited Session I	Chemistry: Invited Session I	Computer and Communications: Invited Session I
	08:40-12:00	Chair: Prof. Wanyang Dai Coffee Break & Group Photo: 10:00-10:15	Chair: Dr. Hamid Arandiyan Coffee Break & Group Photo: 10:30-10:45	Chair: TBD Coffee Break & Group Photo: 10:30-10:50
	12:00-13:30		Lunch Whisper	Garden Lounge [叮咛吧] Lobby
July 20	Time	Conference 4 [象山厅] 2 nd Floor	Conference 5 [叠彩厅] 2 nd Floor	Conference 7 [临桂厅] 2 nd Floor
	14:00-18:00	Mathematics: Invited & Oral Session II Chair: Coffee Break & Group Photo: 15:45-16:00	Chemistry: Invited Session II Chair: Prof. Zhen Yuan Coffee Break & Group Photo: 16:00 16:15	Computer and Communications: Invited & Oral Session II Chair: Prof. Zheng Zheng Coffee Break & Group Photo: 16:00 16:20
	18:00-19:30	13,13,10,00	Dinner Whisper	Garden Lounge [叮咛吧] Lobby
Date	Time	Conference 5 [叠彩厅] 2 nd Floor		
	09.20 12.00		Chemistry: Oral Session	
July 21	08:30-12:00	Cof	Chair: TBD fee Break & Group Photo: 10:00-1	0:15
	12:00-13:30		Lunch Whisper Gard	len Lounge [叮咛吧] Lobby
July 22	07:40-17:00	One-day Tour (Own expense)		

Part II Invited Speeches

Mathematics: Invited Session I

Invited Speech 1: Stochastic Differential Games and Stochastic Partial

Differential Equations with Levy Jumps

Speaker: Prof. Wanyang Dai, Nanjing University, China **Time:** 08:30-09:15, Saturday Morning, July 20, 2019 **Location:** Conference 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract

We formulate a stochastic differential game (SDG) problem with q players, which is driven by Levy Big Data (i.e., a general-dimensional vector Levy process). Both non-zero-sum and zero-sum games are considered. The

well-known AlphaGo and AlphaGo Zero aided Go games are covered. By establishing a vector-form Ito-Ventzell's formula and a 4-tuple vector-field solution to a unified system of stochastic partial differential equations (SPDEs), we get a BestGo policy process to the game, i.e., a Pareto optimal Nash equilibrium policy process or a saddle point policy process to the SDG in a non-zero-sum or a zero-sum sense. The unified SPDE is in a vector-form and forward-backward coupling manner. The partial differential operators in its drift, diffusion, and jump coefficients are in time-variable and position-parameters over a domain (e.g., a hyperbox or a manifold). Since the unified system is a general-dimensional vector-form one with general nonlinearity and general high-order, the popular computation (e.g., integration by parts) based proving method cannot be applied. Thus, by constructing a supporting topological space, we develop an approach to prove the unique existence of an adapted 4-tuple strong solution to the system under general local linear growth and Lipschitz conditions. Finally, examples in quantum physics, queueing game, and Go game are also presented.

Invited Speech 2: Two Probability Models for Traveling Salesman Problem Based

on Frequency Quadrilaterals

Speaker: Dr. Yong Wang, North China Electric Power University, China **Time:** 09:15-10:00, Saturday Morning, July 20, 2019 **Location:** Conference 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract

Traveling salesman problem (TSP) is one of well-known NP-hard problems in combinatorial optimization. Karp has shown that there is no polynomial-time

Program Guide

algorithm for TSP unless P=NP. The recent research demonstrates that TSP on sparse graphs can be resolved in shorter time than TSP on complete graph. Here, we present two probability models based on frequency quadrilaterals, which give the basis to convert a TSP complete graph into the sparse graphs. As one chooses N frequency quadrilaterals to compute the frequency of an edge, the first probability model illustrates that the edges in the optimal Hamiltonian cycle usually have the bigger frequency than a common edge. Moreover, the frequency of an optimal Hamiltonian cycle edge increases according to *n*until it reaches the maximum frequency 5 as *n* is big enough, where *n* is the TSP scale. The average frequency of an edge conforms to the log-normal distribution. It implies that the number of edges with big frequency will be very small. Thus, in theory we can cut many edges with low frequency and a sparse graph with a small number of edges will be generated for TSP. We explored the observations with a few real-world TSP instances.

Invited Speech 3: Structure of Global Energy Investment, Competition and

Cooperation from Shareholding Perspective: Based on a Heterogeneous Complex

Networks Model

Speaker: Dr. Huajiao Li, China University of Geosciences, Beijing, China **Time:** 10:15-11:00, Saturday Morning, July 20, 2019 **Location:** Conference 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract

Along with the development of the energy financial market and the increase of energy financial attribute, the global energy financial structure of investment relations[1] as well as the competition and cooperation relations[2] has

become a new research perspective. As a complex system with multi objects and multi relations, energy financial market has heterogeneous features[3]. How to choose some representative objects and relations to construct the primitive heterogeneous network model, and analyze the investment, competition and cooperation structure based on the designed derivative algorithms has been a new research focus and challenging topic. By the empirical data of energy stock market, this paper constructed the heterogeneous network model based on three sets of objects (energy listed companies, shareholders, nations and regions (nations for short)) and two types of relations (investment relations[4], national affiliation relations), then, the investment relations of nations[1] were get based on the investment relations, and the competition and cooperation relations of nations[2] were get based on the derivative competition and cooperation relations of shareholders by co-holding behavior[5] and their national affiliation relations (See Figure 1).

Invited Speech 4: Stochastic modeling in biological populations through two-sex

branching processes

Speaker: Prof. Manuel Molina, University of Extremadura, Spain **Time:** 11:00-11:45, Saturday Morning, July 20, 2019 **Location:** Conference 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract

In the general setting of stochastic modeling, branching processes are appropriate mathematical models to describe the probabilistic evolution of dynamical systems. They are an active research area of theoretical and

practical interest with applicability to such fields as biology, demography, epidemiology, genetics, population dynamics, and others. Branching processes have especially played a major role in modeling the demographic dynamics of biological population whose size evolves over time due to random births and deaths. In particular, in order to mathematically describe the dynamics of biological populations with sexual reproduction, where females and males coexist and form couples (female-male), several classes of two-sex branching processes have been introduced and investigated. In this talk, we will review the recent contributions to the two-sex branching process theory. We will focus the attention on the class of two-sex branching processes with several mating and reproduction strategies. For such a class, we will present some inferential results about the main reproductive parameters involved in the probability model.

Invited Speech 5: Effect of Dimension and Kurtosis on Performances of Some

Algorithms

Speaker: Prof. Jin Wang, Northern Arizona University, USA **Time:** 11:45-12:30, Saturday Morning, July 20, 2019 **Location:** Conference 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract

In modern statistics, almost all statistical methods are implemented through algorithms. Thus performance of a statistical method is directly affected by the algorithm for the method. Here we study two well-known algorithms for

multivariate data. It is found that the performances of both algorithms decline as dimension increases. The effect of data shape on the algorithms is also studied. Our finding is that the performances of both algorithms decrease as kurtosis increases. Some adjustments for those algorithms will be discussed as well, along with some new descriptive measures for multivariate data.

Mathematics: Invited Session II

Invited Speech 6: Recent advances on variants of Estrada index of random

graphs

Speaker: Prof. Yilun Shang, Northumbria University, UK **Time:** 14:00-14:45, Saturday Afternoon, July 20, 2019 **Location:** Conference 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract

Suppose that G is a graph over n vertices. G has n eigenvalues of adjacency matrix represented by λ_1 , λ_2 ,..., λ_n . The Estrada index of G is defined as the sum of $\exp(\lambda_i)$ for all i=1,...,n. This graph invariant appeared for the first

time in year 2000, dealing with the folding of protein molecules. Since then a variety of other chemical and non-chemical applications of Estrada index and its variants were communicated. In particular, network robustness has found to be a key area that Estrada indices play an important role. In this talk, we will discuss the combinatorial properties of variants of Estrada index of random graphs, including Laplacian Estrada index, Distance Estrada index, and Gaussian Estrada index with a view to their applications in network robustness.

Chemistry: Invited Session I

Invited Speech 1: Supramolecular Assembly with Mechanical Motions

Speaker: Prof. Myongsoo Lee, Jilin University, China **Time:** 08:30-09:00, Saturday Morning, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

In this symposium, I will introduce our recent results how to construct dynamic self-assembled nanostructures exhibiting switchable functions, inspired by life systems. For example, synthetic tubular pores are able to undergo open-closed

switching driven by an external signal, which function as an artificial enzyme. When self-assembled tubules embed DNA inside the hollow cavities, the DNA-coat assembly undergoes collective motion in helicity switching. In the case of toroid assembly, the static toroids are able to undergo spontaneous helical growth when they switch into out-of-equilibrium state. The helical growing drives shaping of spherical vesicles into tubular vesicles, reminiscent of microtubles. Moving from 1-D to 2-D structures, the internal pores are able to form chiral interior which selectively capture only one enantiomer in racemic solution with perfect pore performance. I will discuss recently discovered these results with their biological implications.

Invited Speech 2: General Method for Enantioselective Synthesis of P-Stereogenic

Chiral Phosphine Ligands for Efficient Asymmetric Catalysis

Speaker: Prof. Zhengxu (Steve) Han, Boehringer Ingelheim Pharmaceuticals Inc., USA **Time:** 09:00-09:30, Saturday Morning, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

Chiral phosphine compounds have been widely used as ligands for transition metal catalysed asymmetric transformation in the synthesis of bioactive molecules or drug substance. Proven evidence has showed that ligand with P-stereogenic chiral center is superior in both reactivity and selectivity. However, among many chiral phosphine ligands used, only a few ligands bear P-stereogenic chiral centers due to the difficulty in their synthesis. Although the prominent P-chiral ligand DIPAMP was prepared by Knowles and co-workers in the 1970s, methods for the synthesis of optically active P-chiral phosphines have emerged slowly and there is no general and effective method for the synthesis. This presentation will focus our many year efforts in designing an efficient and general method in the synthesis of P-chiral phosphine ligands with diverse structure and functionality. The application of these P-chiral ligands in the asymmetric synthesis of active

pharmaceutics will also be presented.

Invited Speech 3: Ionization basis for activation of enzymes

Speaker: Prof. Guangnan Ou, Jimei University, China **Time:** 09:30-10:00, Saturday Morning, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

Proteins consist of both polar and nonpolar amino acids. In aqueous solution, globular proteins usually turn their polar groups outward, toward the aqueous solvent remaining hydrated, and their nonpolar groups inward, away from the

water molecules leading to the hydrophobic effect that drives the folding of proteins into compact globular tertiary structures. The structures and behavior of enzymes is strongly dependent on the protonation state of their ionizable groups[1, 2]. The ionization shift may inactivate enzymes due to the alteration of protonation state of either ionizable groups directly involved in catalysis or those residues elsewhere that play a key role in the overall retention of the active enzyme conformation.

Invited Speech 4: Rational design of functional metalloenzymes in myoglobin for

some applications

Speaker: Prof. Ying-Wu Lin, University of South China, China Time: 10:00-10:30, Saturday Morning, July 20, 2019 Location: Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

Design of functional metalloenzymes have addressed much attention recently. Heme proteins are a major class and play diverse functions in biological systems, such as O_2 delivery, electron transfer and catalysis. Myoglobin (Mb) is

an ideal model protein for heme protein design. In the last decade, we have rationally designed some functional heme enzymes in Mb by developing several strategies, such as by using post-translational modifications (PTM), domain swapping, design of metal-binding site, construct intramolecular disulfide bond, and introduction of non-native cofactors (Fig. 1). The designed artificial metalloenzymes include artificial nitrite reductase, hydrolase, dye-decolorizing peroxidases and

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dehaloperoxidases, with the catalytic efficiency close to or even exceeding those of native enzymes. Moreover, we have solved the X-ray crystal structure of some artificial enzymes, which provides valuable insights into the structure and function relationship, as well as potential applications.

Invited Speech 5: Explorations into Unprecedented Catalysts and Reactions

Speaker: Dr. Uwe SCHNEIDER, University of Edinburgh, UK **Time:** 10:45-11:15, Saturday Morning, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

The seminar summarizes the development of new low-oxidation state catalysts in synthesis: a potentially ambiphilic Ga(I) species formed in situ from gallium metal (Scheme 1–i);[1] a basic C(0) species, i.e., a carbodiphosphorane (Scheme

1–ii).[2] In addition, the functionalization of challenging C–H bonds by non-precious metal–base catalysts will be detailed: the sodium amide-triggered allylic C(sp3)–H bond activation of aromatic alkenes (pKa ~ 34; Scheme 1–iii);[3] the copper(I)/lithium carbonate-catalyzed C2-selective Mannich-type reactions with various N-unprotected indoles (pKa ~ 38; Scheme 1–iv).[4] References

[1] Qin, B.; Schneider, U. J. Am. Chem. Soc. 2016, 138, 13119–13122.

[2] Richards, J.; Kossen, H.; Bao, W.; Schneider, U. J. Am. Chem. Soc. (under review).

[3] Bao, W.; Kossen, H.; Schneider, U. J. Am. Chem. Soc. 2017, 139, 4362-4365.

[4] Richards, J.; Schneider, U. J. Am. Chem. Soc. (under review).

Invited speech 6: Nanocomposite catalysts of biofuels transformation into syngas:

design, reaction mechanism and performance in structured and membrane

reactors

Speaker: Prof. Vladislav A. Sadykov, Novosibirsk State University, Russia **Time:** 11:15-11:45, Saturday Morning, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

Transformation of biofuels into syngas via steam/oxysteam reforming is now considered as one of the most important task of catalysis in the energy-related fields. Due to a high reactivity of biofuels a heavy coking is

observed leading to the catalyst deactivation. To deal with this phenomenon, active components comprised of complex oxides with a high lattice oxygen mobility (favors efficient gasification of coke precursors) promoted by Ni/Co-based alloys (responsible for fuels molecules activation) are

suggested. For achieving a high performance in these reactions, monolithic substrates with a good thermal conductivity are promising for providing an efficient heat supply to the catalyst and prevent emergence of cool/hot zones deteriorating performance. For the renewable/hydrogen energy field, producing syngas and hydrogen from biogas/biofuels using catalytic processes conjugated with reagent (oxygen) and/or products (hydrogen) separation in membrane reactors is a promising approach as well.

This work reviews results of extensive research aimed at design and characterization of such nanocomposite structured catalysts and catalytic membranes performance in transformation of biofuels (biogas, ethanol, acetone, etc). Next basic problems are considered:

1. Atomic-scale factors controlling oxygen mobility and reactivity in complex oxides with perovskite (LnMnCrO), fluorite (LnCeZrO) and spinel (MnCrO) structures (both bulk and loaded on high surface area/mesoporous Mg-alumina, CaTiO3, tialite), their acid/base properties and features of strong interaction with supported metal/alloy nanoparticles (Ni, Co, Ni+Pt, Ni+Ru, etc) as revealed by applying modern diffraction and spectroscopic techniques of nanomaterials structure and surface properties characterization (XRD on synchrotron radiation, EXAFS, TEM with EDX, UV-Vis, Raman, XPS, FTIRS of adsorbed CO, etc), oxygen mobility (oxygen isotope heteroexchange in the flow reactors in temperature-programmed mode) and reactivity (TPR, pulse studies).

2. Effect of the active component composition, specificity of the surface sites and nature of oxidant on basic mechanistic features of biofuels transformation into syngas as elucidated by a complex of transient methods (in situ FTIRS, isotope and chemical transients, pulse microcalorimetry).

3. Design of structured catalysts by supporting optimized active components on heat-conducting substrates (Ni-Al(C) foams, Fe-Cr-alloy corrugated foils, gauzes and microchannel platelets with protective corundum layers, microchannel cermets, SiC monolithic substrates with porous walls, etc).

4. Structured catalysts performance in pilot-scale reactors (including those equipped with the internal heat exchangers) operating on real concentrated feeds and its mathematical modeling.

5. Design of asymmetric supported membrane reactors permeable for oxygen (separated from air to be used as reagent in biofuels oxi-steam/dry reforming in catalytic layers supported on the membrane surface from the fuel side) or hydrogen (to separate it from the products of biofuels steam reforming in catalytic layer supported on the fuel side of membrane). Unique Ni-Al foam substrates with graded porosity were used for design of such membrane reactors.

6. Studies of catalytic membranes performance in real concentrated feeds and their mathematical modeling.

For optimized nanocomposite active components a high mobility and reactivity of strongly bound surface oxygen (heat of adsorption 500-600 kJ/mol O2 in the steady-state) provides realization of step-wise redox mechanism of biofuels transformation with the rate determining stage corresponding to the rupture of C-C bond in activated fuel molecule on the metal site (Ni-Ru alloy nanoparticle, etc) facilitated by the interaction with oxygen species at the metal-support interface.

Optimized structured catalysts provide a high yield of hydrogen (H2 content up to 50%) in the IT range both in steam and autothermal reforming of biofuels at short contact times. Main by-product is CH4 due to cracking, while for alumina-supported active components C2H4 is formed on acid sites. Suppressing acidity by increasing Mg loading and O2 addition to the feed decreases C2H4

content, thus suppressing coking; stable performance was confirmed for more than 100 h time-on-stream. For heat-conducting substrates (Ni-Al foam, microchannel platelets etc.) mathematical modeling demonstrated the absence of any heat- and mass-transfer effects. No spallation or cracking of the active components on metallic substrates was revealed. Reactors equipped with the internal heat exchanger were designed allowing stable and efficient operation in the autothermal mode for the mixture of natural gas and liquid biofuels at feeds inlet temperatures <100oC.

For catalytic oxygen-permeable membrane reactors a high oxygen flux (up to 15 cm3 O2/cm2min) was achieved under air/CH4 (+CO2 + biofuel) feeds gradients at ~ 900 oC, providing a high yield of syngas, thus being promising for the practical application. For catalytic hydrogen-permeable membranes complete EtOH conversion in steam reforming ractions was achieved at ~ 700 oC even at the highest flow rate 10 l/h, and a high hydrogen permeation (≥ 1 ml H2 cm 2 min 1) was revealed. Mathematical modeling revealed absence of any mass transfer effects in porous layers of optimized membranes and provided reliable description of catalytic membrane performance required for up-scaling. Membranes remained robust for up to 300 h time-on-stream without any deterioration of performance or coke deposition. Hence, performance characteristics of these membranes are promising for the practical application.

Support by the Russian Science Foundation (Project 16-13-00112) and Russian -French network GDRI "Catalytic valorization of biomass" (RFBR-CNRS 18-58-16007_a Project) is gratefully acknowledged

Invited Speech 7: Ordered Mesoporous Materials and their Applications in

Catalysis

Speaker: Dr. Hamid Arandiyan, The University of Sydney, Australia **Time:** 11:45-12:15, Saturday Morning, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

Recently, research has been focused on specifically designing porous perovskite materials so that large surface areas can be harnessed and surface properties can be improved. Numerous potential applications of porous

perovskites have been investigated, including heterogeneous catalysis that relies on interactions and/or reactions of other components with porous perovskites. The main objective of our research is to examine the progress of recent research studies on porous perovskite nanomaterials, including the preparation methods and their applications in catalysis. The wide variety of the related knowledge on porous mixed oxides can provide guidance for researchers with interests ranging from the design of functionalized materials to the field of heterogeneous catalysis and electrochemical applications.

Invited Speech 8: Sustainable polymers synthesis from renewable resource

Speaker: Prof. Ye Liu, Dalian University of Technology, China **Time:** 12:15-12:45, Saturday Morning, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

Currently, most of used polymers are derived from petrochemicals, which not only leads to the depletion of resources, but also accompanies with environmental and social problems. Various sustainable polymers and chiral

fine chemicals from renewable resource, such as furfural and vegetable oil, have been developed by using carbonylation polymerization et.al. As an abundant, inexpensive and non-toxic renewable C1 resource, CO2 also has received intense attention in recent decades, and the development of efficient processes for CO2 transformation into useful products is a long-standing goal for chemists. The asymmetric copolymerization CO2 with epoxides for synthesis of CO2-based polycarbonates are known for several decades, but the stereochemistry control of this asymmetric process has long remained elusive. Therefore, most of the polymers are amorphous, and their low thermal resistance makes them difficult to use as structural materials. Recently, we have innovatively designed and synthesized a series of privileged chiral bimetallic catalyst system for the asymmetric CO2 polymers with different configurations was discovered, and various highly stereo-regular crystalline, and functional CO2-based polycarbonates were afforded. This research is expected to open up a new way to prepare various novel semicrystalline materials with a wide variety of physical properties, degradability and their potential application in biomedical fields.

Invited Speech 9: Life Cycle of Iron Catalyst: CO2 Hydrogenation to Olefins

Using Operando Methodology

Speaker: Prof. Jing Xu, East China University of Science and Technology, China **Time:** 12:45-13:15, Saturday Morning, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

The establishment of structure-performance relationship of heterogeneous catalysts is highly desirable for catalyst design and understanding of nature of

the dynamic structure evolution of iron catalyst during the full life cycle, but also endows deep insights into the underlying the mechanism, especially the deactivation mechanism, thus paves the way for the rational design of next-generation industrial catalysts.

Key words: operando techniques, iron catalyst, full life cycle, deactivation mechanism, structure evolution

Chemistry: Invited Session II

Invited Speech 10: Preparation and properties of amorphous carbon nanotues

Speaker: Prof. Tingkai Zhao, Northwestern Polytechnical University, China **Time:** 14:00-14:30, Saturday Afternoon, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract TBD

Invited Speech 11: Micro-nano Fiber Thermal Conductivity Measurement

Speaker: Dr. Xinghua Zheng, Institute of Engineering Thermophysics, CAS, China **Time:** 14:30-15:00, Saturday Afternoon, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

With the rapid development of micro-nano technology, micro-nano thermal functional materials have been more and more concerned and applied, such as

Invited Speech 12: Highly Stable conjugated polymer dots as multifunctional

agents for photoacoustic imaging-guided photothermal therapy

Speaker: Prof. Zhen Yuan, University of Macau, China **Time:** 15:00-15:30, Saturday Afternoon, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

The development of multifunctional organic nanomaterials is extremely essential for their in vivo cancertheranostic applications. In this study, we report a new BDT-IID based conjugated polymer dots (Pdots) platform that

can serve as multifunctional nanoprobes for photoacoustic (PA) imaging-guided photothermal therapy (PTT). The novel BDT-IID Pdots are readily fabricated thoughnanoreprecipitation and can absorb strongly in the near-infrared region (NIR, 650-700 nm). Furthermore, BDT-IID Pdots possess the stable nanostructure and extremely low biotoxicity. In particular, its photothermal conversion efficiency can be up to 45%. More importantly, our in vivo results exhibit that the BDT-IID Pdots are able to offer concurrently enhanced PA imaging signals and sufficient photothermal effect. Consequently, the BDT-IID Pdotscan be exploited as a unique theranostic nanoplatform for PA imaging-guided PTT of tumors, holding great promise for their clinical translational development. **Keywords:** conjugated polymer dots, multifunctional agents, photoacoustic imaging, photothermal therapy

Invited Speech 13: Amidinates and Imidazoline-2-iminato Group 4 Complexes in

the Polymerization of Olefins

Speaker: Prof. Moris S. Eisen, Israel Institute of Technology, Israel **Time:** 15:30-16:00, Saturday Afternoon, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

During the last decades an enormous advancement has been made in the design and synthesis of "well-defined' or "single-site" catalysts for the polymerization of olefins. The majority of these catalysts belong to the

metallocene ensemble, although some are known that contains one cyclopentadienyl ring and (for example) a pendant amido ligand. Complexes containing many other functionalities including chelating diamido or chelating benzamidinate ancillary ligands have received attention as potential Ziegler-Natta catalysts.

We have investigated the α -olefin polymerization chemistry catalyzed by several group 4 bis(benzamidinate) complexes. We have shown that we are able to tune the stereoregularity of

various polymers just by changing the monomer concentration during the polymerization to obtain elastomers. In addition, we will show unique imidazoline-2-iminato complexes allowing to reduce the amount of the cocatalyst (MAO=methylalumoxane) to impressive values. The presentation will also show recent results with new systems.

Invited Speech 14: Kinetic analysis methods in polymer degradation studies:

errors in lifetime predictions due to incorrect model assumptions

Speaker: Dr. Pedro E S ánchez Jim énez, Israel Institute of Technology, Israel **Time:** 16:15-16:45, Saturday Afternoon, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

Polymer degradation kinetics are usually studied by means of kinetic analysis methods originally devised for solid-state processes. These approaches include isoconversional methods, which yield the activation energy values as a

function of the reacted fraction and model-fitting methods, that attempt to fit the experimental data to a set of predefined mathematical functions proposed assuming a given reaction mechanism [1]. Determining in a precise manner the kinetic parameters require not only reliable experimental data but also awareness of the strength and limitations of the methods employed. For instance, a widespread error is the use of empirical kinetic models without physical meaning, such as first order or nth order kinetic functions to fit the experimental data. Those methods are often used as only options due to their simplicity and the good results it often provides in terms of fit quality [2]. However, despite the ability of such functions to closely accommodate most experimental data arrays, the goodness of fit alone does not guarantee of correctness of the model. This is important for the inappropriate assumption of the kinetic model strongly compromises any predictions or lifetime estimations. For instance, many recent works prove that autoaccelerative models can better describe the degradation of many polymers such as cellulose, polystyrene and others [3, 4]. This type of functions, in which the reaction rate first increases up to a certain value of conversion before starting the usual decay, are especially appropriate to model the progressive breakage of the polymeric chains and the ulterior volatilization of the produced fragments. While conventional model-fitting methods of kinetic analysis would yield relatively similar kinetic parameters for both nth order and autoaccelerative models, the implications of an incorrect assignation are significant in terms for predictive capability [5]. In this talk, we would provide an overview of the different methods of kinetic analysis available for polymer degradation studies and we will highlight the errors committed in any half-life predictions when the kinetic parameters are determined by fitting the experimental data to an erroneous kinetic model, with emphasis in chain scission driven polymer degradation reactions.

References

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Invited Speech 15: New applications of poly(arylene ether)s in organic

light-emitting diodes

Speaker: Prof. Junqiao Ding, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, China **Time:** 16:45-17:15, Saturday Afternoon, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

Since 1967, poly(arylene ether)s (PAEs) have emerged as one of the most widely-used engineering plasticsdue to their high thermal and oxidative stability,

good mechanical strength, superior electrical insulating ability and high glass transition temperatures. It should be noted that their applications can be newly extended from engineering plastics optoelectronic functional materialsaccording to several issues to as followed:(i)Theintrinsicthermal and morphological stability is beneficial for the achievement of long-term devices. (ii)Unlike conventional π -conjugated polymers prepared through transition metal catalyzed cross-coupling reactions, PAEs can be synthesized by means of base catalyzed nucleophilic aromatic substitution polymerization. Simple work-up of washing by water and precipitating in poor solvents can readily afford the desired polymer with high purity for use in optoelectronic devices, free of any residual catalyst contamination. (iii) PAEs possess well-defined conjugated moieties and localized excited state between two saturated oxygen atoms, so that their optical properties can be easily modulated to realize wide band-gap blue emission. Herein, I will talk about our efforts to develop efficient PAEs based lighting emitting polymers, which include fluorescent polymers, phosphorescent polymers and thermally activated delayed fluorescent (TADF) polymers.

Invited Speech 16: Structure-Property Relationships of Green Polymers

Speaker: Prof. Yuji Sasanuma, Chiba University, Japan **Time:** 17:15-17:45, Saturday Afternoon, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

We have developed a methodology based on ab initio molecular orbital calculations, NMR experiments, and the rotational isomeric state (RIS) scheme for predicting conformational characteristics and configurational properties and elucidating structure-property relationships of polymers. We

have applied the methology to various polymers including heteroatoms such as nitrogen, oxygen, silicon, phosphorus, sulfur, and selenium in the backbone. In rent years, we have treated such green polymers as [biodegradability] poly(glycolic acid), poly(lactic acid), poly(2-hydroxybutyrate), poly((R)-3-hydroxybutyrate), poly((R)-3-hydroxyvalerate), poly(ethylene succinate), and poly(butylene succinate), [carbon dioxide fixation] poly(ethylene carbonate), poly(propylene carbonate), and poly(cyclohexene carbonate). Furthermore, we have investigated polymer crystals with density functional theory calculations under periodic boundary conditions and obtained the following information: optimized structures (lattice constants and atomic coordinates); interchain cohesive energy; vibrational spectrum; thermodynamic functions; phase transition temperature; crystalline modulus. In our presentation, we will report the summary of the recent studies including unpublished results.

Invited Speech 17: Novel Transition Metal Phosphide Water Splitting

Electrocatalysts

Speaker: Dr. Lifeng Liu, the International Iberian Nanotechnology Laboratory, Portugal **Time:** 17:45-18:15, Saturday Afternoon, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

Water splitting has been proposed to be a promising and highly desirable approach to solar energy storage in the form of clean hydrogen fuels. This can

be realized either by water electrolysis powered by photovoltaic cells or by direct photocatalysis/photoelectrocatalys is using semiconducting materials, both requiring low-cost, efficient, and stable catalysts containing earth-abundant elements for large-scale deployment.

In this talk, I will first present our recent effort toward developing self-supported transition metal phosphide (TMP) monolithic electrodes for alkaline water electrolysis [1-3], which can be powered by "green" electricity from solar cells. I will then focus on our recent work on fabricating silicon

(Si)-based photocathodes for solar driven water splitting. Specifically, I will show a few examples including 1) Si nanowire (SiNW) arrays fabricated by metal-assisted chemical etching and decorated with earth-abundant cobalt phosphide (Co-P) nanoparticle catalysts [4]; 2) conformal and continuous deposition of Co_2P catalyst layers on p-Si NW arrays and inverted pyramid textured p-Si wafers [5,6]. In both cases, the CoP layer plays a dual role: on the one hand, it serves as an efficient catalyst promoting the hydrogen evolution reaction; on the other hand, it effectively passivate Si against the photo-corrosion, substantially improving the operation lifetime of the photoelectrodes.

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Invited Speech 18: Organic NIR Photosensitizers for Targeted Cancer

Phototherapy

Speaker: Prof. Xiaochen Dong, Nanjing Tech University, China **Time:** 18:15-18:45, Saturday Afternoon, July 20, 2019 **Location:** Conference 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract

The development of effective cancer treatment methods has become extremely urgent due to the rapid growth of cancer patients. Comparing to conventional therapeutic methods for cancer, photothermal therapy (PTT) and

photodynamic therapy (PDT) are two main noninvasive phototherapies due to the low side-effects, high selectivity and efficiency. PTT and PDT are usually induced by near-infrared (NIR) light then the excited agents inside tumor can generate heat or reactive oxygen species (ROS) to kill tumor cells. However, most of inorganic agents face big challenges of the potential far-reaching toxicity and bio-refractory in clinic. Differently, small molecular organic dyes as photothermal agents usually presents low-toxicity, good biodegradability and fluorescence in biological tissue.

Herein, we have designed and synthesized a series of NIR-absorbing photosensitizers (PSs), based on DPP and Bodipy derivatives. After self-assembly, organic nanoparticles (NPs), with excellent tumor-targeting performance and high ROS generation ability or photothermal conversion, can be obtained. Moreover, the NPs can be passive targeted to tumor sites by the enhanced permeability and retention (EPR) effect and photoacoustic imaging can visualize the tumor site for real-time monitoring during the therapeutic process. What's more, by the assistance of pharmacokinetics, the properties and mechanisms of NIR-absorbing Nano-PSs were studied, which provided a more effective and smart method for accurate imaging of cancer tumor and phototherapy.

Computer and Communications: Invited Session I

Invited Speech 1: Nanosensor-based Gastric Cancer Prewarning and Early

Diagnosis System

Speaker: Prof. Daxiang Cui, Shanghai Jiao Tong University, China **Time:** 08:30-09:10, Saturday Morning, July 20, 2019 **Location:** Conference 7 [临桂厅], 2nd Floor, Grand Link Hotel

Abstract

Gastric cancer (GC) is one kind of common tumor affecting about one million people per year and the mortality ranks the second among all tumors. In China, only 5-10% early gastric cancer patients can be discovered, how to improve

the diagnosis ratio of early gastric cancer has become a challenge problem. Herein, we reported some relative work in our group. Breath biomarker screening and detection method were developed to realize screening out early gastric cancer patients. Multifunctional nanoprobes were designed and prepared to realize multimode molecular imaging and simultaneous therapy of early gastric cancer, several nanoprobes were evaluated for their safety. These results lay foundation for further clinical translation. Keywords: gastric cancer, nanoprobes; breath biomarker; sensor; molecular imaging.

Invited Speech 2: Radar Target Detection method based on polarization feature

difference in strong interference background

Speaker: Prof. Longfei Shi, National University of Defense Technology, China **Time:** 09:10-09:50, Saturday Morning, July 20, 2019 **Location:** Conference 7 [临桂厅], 2nd Floor, Grand Link Hotel

Abstract TBD

Invited Speech 3: Motion Modelling in Range-Doppler Space with Applications to

Detection and Tracking

Speaker: Prof. Gongjian Zhou, Harbin Institute of Technology, China **Time:** 09:50-10:30, Saturday Morning, July 20, 2019 **Location:** Conference 7 [临桂厅], 2nd Floor, Grand Link Hotel

Abstract TBD

Invited Speech 4: Research on Focus-before-detection

Speaker: Dr. Jibin Zheng, Xidian University, China **Time:** 10:50-11:30, Saturday Morning, July 20, 2019 **Location:** Conference 7 [临桂厅], 2nd Floor, Grand Link Hotel

Abstract

The modern radar target and detection environment are becoming increasingly challenging. The main challenges of target characteristics, as well as the environment, can be summarized formodern radar as follows: high speed, low radar cross section, strong maneuver, far range, strong clutter and jamming. It

is attractive to ask whether we can improve radar ability in a troublesome environment by changing its radar signal processing (RSP) without changing system parameters. The researchers do research in three related aspects for modern RSP, the accurate environment sensing from echoes, the effective resource management for optimization and the focus-before-detection. The task of the focus-before-detectionis to use the auxiliary sensing information and the optimized system resources to improve the radar performance. In this report, we will discuss the development and challenges of the focus-before-detection.

Invited Speech 5: Designing Deep Learning Algorithms in a Data Driven Way

Speaker: Prof. Yizhou Yu, Mitsubishi Electric Corporation, Japan **Time:** 11:30-12:10, Saturday Morning, July 20, 2019 **Location:** Conference 7 [临桂厅], 2nd Floor, Grand Link Hotel

Abstract

In this talk, I use three examples to illustrate how datasets affect the design of deep learning algorithms. For image classification problems with a large label space, we designed hierarchical deep convolutional neural networks capable of learning a category hierarchy from data with uneven between-category

distinctions. For fine-grained classification problems with small training sets, we designed a novel fine-tuning scheme called Selective Joint Fine-Tuning, which performs multitask learning by sampling a subset of most relevant data from a large source domain. For object detection or semantic segmentation with image level labels only, we designed a weakly supervised learning algorithm capable of inferring object level and pixel level labels from image level labels for the training images.

Invited Speech 6: Real time Automatic Detection of Flow Influx for Oil and Gas

Drilling

Speaker: Prof. Feifei Zhang, Yangtze University, China **Time:** 12:10-12:50, Saturday Morning, July 20, 2019 **Location:** Conference 7 [临桂厅], 2nd Floor, Grand Link Hotel

Abstract

Automatic and early detection of flow influx during drilling is important for improving well-control safety. Inthis paper, a new method that can automatically analyze real-time drilling data and detect the flow influx eventis

presented. The new method combines the physics-based dimension reduction and time-series data mining approaches. Two kick indicators are defined, representing the drilling parameter group (DPG) and flow parametergroup (FPG), respectively. Additionally, two real-time trend-analysis methods, the divergence of movingaverage (DMA), and the divergence of moving slope average (DMSA) are applied to quantify trend evolutions of the two indicators. The kick event is identified based on the anomalous trends held by the two kick indicators. Afinal kick-risk index (KRI) is calculated in real time to indicate the probability of kick events and to trigger thealarm. The method is tested against four offshore kick events. With KRI threshold setting as 0.8, the averagedetection time is 64% less than the reported detection time. The application of DPG kick indicator allows theearly kick detection without additional downhole sensors or costly flow meters.

Computer and Communications: Invited Session II

Invited Speech 7: Applying the Bayesian Field Theory and Deep Learning for

Modeling the Multi-body Energy in Proteins

Speaker: Prof. Zheng Zheng, Wuhan University of Technology, China **Time:** 14:00-14:40, Saturday Afternoon, July 20, 2019 **Location:** Conference 7 [临桂厅], 2nd Floor, Grand Link Hotel

Abstract

A central task for computational chemistry is to accurately and efficiently simulate the molecular free energy, which provides theoretical proof and quantitative support for many study fields, e.g. structure-based drug design,

protein engineering, etc. To achieve that goal requires reliable molecular potential energy models constituting a good balance between computational accuracy and operational simplicity. Quantum mechanics methods achieve high prediction accuracy while are extremely expensive against complicated biomolecular systems. Force fields have long been the most widely used potential energy models for molecular free energy simulations, for their well-trained parameter set and easy-to-compute functional forms. However, the single-atom or fragment based pairwise potential functions are facing inherent difficulties for simulating quantum level phenomena caused by the many body effects e.g. electric polarizability and charge transfer, bringing the development of force fields to a bottleneck. Inspired by the ideas from the Graph theory and machine learning techniques, we hereby propose a new protocol for the molecular potential energy model generation by using the Bayesian Field Theory (BFT) and Artificial Neural Network (ANN) based machine learning. This project aims to introduce the ANN-based potential model, for protein systems and protein-ligand complex systems, not only using the atom pairwise potentials, but also including the multi-dimensional configurational effects. In this project, we plan to introduce BFT to set up isolated close-ranged many body systems centered at every atom under study within a molecule, so that the environmental structural configurations regarding each atom descriptors can be tracked across all the molecules in the training database. We then plan to use the deep learning method for training a multi-layered ANN as the biomolecular energy model against massive number of high-level OM method calculated molecular single point energies together with high-quality molecular global minimum structures. This project will provide new insight for understanding the benefit of using machine learning methods to simulate and interpret the complicated configurational effects beyond the illustration of molecular mechanics, without the need to employ high-cost quantum level computation. Finally, this project plan to embed this new ANN-based potential model in the commercialized "Movable Type" free energy method initially developed by the applicant, to achieve both high speed and high accuracy in the free energy simulation for biomolecular systems.

Part III Technical Sessions

Mathematics: Invited Session

Session Chair: Prof. Wanyang Dai, Nanjing University, China Conference 4[象山厅] 2nd Floor 08:30-12:00 Saturday Morning, July 20, 2019

Contenence 4	Conference 4[gktii/j], 2nd 11001 00.50-12.00 Saturday Worming, 3dfy 20, 2017			
Paper ID	Title	Author	Affiliation	
Invited 08:30-09:15	Stochastic Differential Games and Stochastic Partial Differential Equations with Levy Jumps	Prof. Wanyang Dai	Nanjing University, China	
Invited 09:15-10:00	Two Probability Models for Traveling Salesman Problem Based on Frequency Quadrilaterals	Dr. Yong Wang	North China Electric Power University, China	
10:00-10:15	Coffee Break			
Invited 10:15-11:00	Structure of Global Energy Investment, Competition and Cooperation from Shareholding Perspective: Based on a Heterogeneous Complex Networks Model	Dr. Huajiao Li	China University of Geosciences, Beijing, China	
Invited 11:00-11:45	Stochastic modeling in biological populations through two-sex branching processes	Prof. Manuel Molina	University of Extremadura, Spain	
Invited 11:45-12:30	Effect of Dimension and Kurtosis on Performances of Some Algorithms	Prof. Jin Wang	Northern Arizona University, USA	

Mathematics: Invited & Oral Session II

Session Chair: TBD

14:00-18:00 Saturday Afternoon, July 20, 2019

Conference 4[象山厅], 2nd Floor 14:00-18		:00 Saturday Afternoon, July 20, 2019	
Paper ID	Title	Author	Affiliation
Invited	Recent advances on variants of Estrada index	Prof. Yilun Shang	Northumbria University,
14:00-14:45	of random graphs		UK
Oral	The Relationship Between Head Morphology and the Brain Damage in Infants Born with Zika Viral Infection	Xiangyang Ju	NHS Greater Glasgow and Clyde

Oral	Study on Core Drugs and Compatibility Principles of Tibetan Medical Formulae against Neurological Diseases	Xianda Hu	Beijing Tibetan Hospital, China Tibetology Reserch Center
Oral	Model for Frequency Dependence of Thermal Permeability in Order to Quantify the Effects of Thermal Exchange on Wave Propagation in Multi Layered Porous Medium I	Allen Teagle	California State University, Long Beach
Oral	On stable lengths of translations of point-pushing pseudo-anosov maps on curve complexes	Chaohui Zhang	Morehouse College
15:45-16:00	Coffee Break		
Oral	Constructing Simple BIBDs from Direct Product of Finite Fields	Hsin-Min Sun	Department of Applied Mathematics, National University of Tainan
Oral	Ensemble Feature Learning for Predicting Risk Factors of Recurrent Cancers	Chi-Chang Chang	Chungshan Medical University
Oral	Manifestation of Kuppers-Lortz instability in rotating Rayleigh-Benard convection using nanoliquids	Kanchana C.	College of Science, Harbin Institute Technology Shenzhen
Oral	A joint model for truncated longitudinal and survival data	Lang Wu	The University of British Columbia
Oral	Empirical Analysis on the Influencing Factors of China's Total Foreign Trade	Songyan ZHANG	Zhejiang University of Science and Technology
Oral	Oscillation for a Class of Fractional Differential Equation	Qian Feng	China University of Geosciences(Wuhan)

Chemistry: Invited Session I

2019			
Paper ID	Title	Author	Affiliation
Invited	Supramolecular Assembly with Mechanical	Prof. Myongsoo	Jilin University, China
08:30-09:00	Motions	Lee	
Invited	General Method for Enantioselective	Prof. Zhengxu	Boehringer Ingelheim
09:00-09:30	Synthesis of P-Stereogenic Chiral Phosphine Ligands for Efficient Asymmetric Catalysis	(Steve) Han	Pharmaceuticals Inc., USA
Invited 09:30-10:00	Ionization basis for activation of enzymes	Prof. Guangnan Ou	Jimei University,China
Invited	Rational design of functional metalloenzymes	Prof. Ying-Wu Lin	University of South China,
10:00-10:30	in myoglobin for some applications		China
10:30-10:45	Coffee Break		
Invited	Explorations into Unprecedented Catalysts	Dr. Uwe	University of Edinburgh,
10:45-11:15	and Reactions	SCHINEIDER	UK
Invited	Nanocomposite Catalysts of Biofuels	Prof. Vladislav A.	Novosibirsk State
11:15-11:45	Iransformation into Syngas: Design, Reaction Mechanism and Performance in	Sadykov	University, Russia
	Structured and Membrane Reactors		
Invited	Ordered Mesoporous Materials and their	Dr. Hamid	The University of Sydney,
11:45-12:15	Applications in Catalysis	Arandiyan	Australia
Invited	Sustainable polymers synthesis from	Prof. Ye Liu	Dalian University of
12:15-12:45	renewable resource		Technology, China
Invited	Life Cycle of Iron Catalyst: CO2	Prof. Jing Xu	East China University of
12:45-13:15	Hydrogenation to Olefins Using Operando Methodology		Science and Technology, China

Session Chair: Dr. Hamid Arandiyan, The University of Sydney, Australia Conference 5 [叠彩厅], 2nd Floor 08:30-12:00 Saturday Morning, July 20,

Chemistry: Invited Session II

Conference 2019	5 [叠彩厅], 2 nd Floor	[示], 2 nd Floor 14:00-18:00 Saturday Afternoon, July	
Paper ID	Title	Author	Affiliation
Invited 14:00-14:30	Preparation and properties of amorphous carbon nanotues	Prof. Tingkai Zhao	Northwestern Polytechnical University, China
Invited 14:30-15:00	Micro-nano Fiber Thermal Conductivity Measurement	Dr. Xinghua Zheng	Institute of Engineering Thermophysics ,CAS, China
Invited 15:00-15:30	Highly Stable conjugated polymer dots as multifunctional agents for photoacoustic imaging-guided photothermal therapy	Prof. Zhen Yuan	University of Macau, China
Invited 15:30-16:00	Amidinates and Imidazoline-2-iminato Group 4 Complexes in the Polymerization of Olefins	Prof. Moris S. Eisen	Israel Institute of Technology, Israel
16:00-16:15	Coffee Break		
Invited 16:15-16:45	Kinetic Analysis Methods in Polymer Degradation Studies: Errors in Lifetime Predictions Due to Incorrect Model Assumptions	Dr. Pedro E S ánchez Jim énez	University of Seville, Spain
Invited 16:45-17:15	New applications of poly(arylene ether)s in organic light-emitting diodes	Prof. Junqiao Ding	Changchun Institute of Applied Chemistry, China
Invited 17:15-17:45	Structure-Property Relationships of Green Polymers	Prof. Yuji Sasanuma	Chiba University, Japan
Invited 17:45-18:15	Transition Metal Phosphide Water Splitting Electrocatalysts	Dr. Lifeng Liu	the International Iberian Nanotechnology Laboratory, Portugal
Invited 18:15-18:45	Organic NIR Photosensitizers for Targeted Cancer Phototherapy	Prof. Xiaochen Dong	Nanjing Tech University, China

Session Chair: Prof. Zhen Yuan, University of Macau, China

Chemistry: Oral Session

Session Chair: TBD

Conference 5 [叠彩厅], 2 nd Floor		08:30-12:00 Sunday Morning, July 21, 2019		
Paper ID	Title	Author	Affiliation	
Oral	Hydrotalcite supported CuMn-oxide catalyst for selective oxidation of thiols to disulfides with air as oxidant	Bo Li	Lanzhou Petrochemical Research Center of Petrochemical Research Institute	
Oral	Heterogeneous biomimetic synthesis of heterocycles using OMS-2 as support and ETM through multistep oxidation	Xu Meng	Lanzhou Institute of Chemical Physics, CAS	
Oral	Versatile propylene-based polyolefins from high yield and high stereoregularity catalysis	Xiong Wang	Lanzhou Petrochemical Research Center	
Oral	Designing a myoglobin-based oxidase using unnatural amino acids	Yang Yu	Beijing Institute of Technology	
Oral	Size Effect of Ni Nanocatalyst on Supercritical Water Gasification of Lignin by Reactive Molecular Dynamics Simulation	Fang Chen	Tianjin University, China	
Oral	Effect of N and P-containing Ligand on Cu-Based Catalysts for Acetylene Hydrochlorination	Wang Yulian	Tianjin University, China	
Oral	Quantum-Chemical Estimating Interaction of sp2-Carbon Nanoclusters with PE and PP Oligomers	Mykola Kartel	O.Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv	
10:00-10:15	Coffee Break			
Oral	Nanocoatings on 2D macroporous silicon structures	Liudmyla Karachevtseva	V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv	
Oral	Glass-Reinforced Plastic Filled by Multiwall Carbon Nanotubes and Their Modified Forms	Yurii Sementsov	O. Chuiko Institute of Surface Chemistry, NAS of Ukraine, Kyiv	
Oral	Modification of Operational Characteristics of Cold Curing Silicon Rubber	Viacheslav Trachevskyi	National Aviation University, Ukraine, Kyiv	

Oral	Interstitial P-Doped Zn0.5Cd0.5S1-x with Twin-Induced Homojunctions for Overall Pure Water Splitting Under Visible Light	Siang-Piao Chai	School of Engineering, Monash University Malaysia
Oral	Nanovectors assembled from natural egg yolk lipids for tumor-targeted delivery of therapeutics	Qilong Wang	The Affiliated Huaian No.1 People's Hospital of Nanjing Medical University
Oral	Synthesis of a new Lopinavir phosphinic analog as HIV-1 inhibitor	Ruba Kellow	Xi'an Jiaotong-Liverpool University (XJTLU)
Oral	Enhanced Imaging on the Glycan Expressed Cancer Cells Using the Poly (glycidyl methacrylate)-Grafted Silica Nanosphere Labeled with Quantum Dots	Ya-qiong Yang	Nanjing Tech University
Oral	Synthesis and thermal properties of high-temperature phthalonitrile polymers based on 1,3,5-triazines	Qingxin Zhang	Hebei University of Technology
Oral	Co-liquefaction of a sub-bituminous coal and biomass under different catalysts	Hengfu Shui	Anhui University of Technology

Computer and Communications: Invited Session I

Session Chair: TBD

Conference 7 [临桂厅], 2nd Floor		08:30-12:00 Saturday Morning, July 20, 2019	
Paper ID	Title	Author	Affiliation
Invited	Nanosensor-based Gastric Cancer Prewarning	Prof. Daxiang Cui	Shanghai Jiao Tong
08:30-09:10	and Early Diagnosis System		University, China
Invited	Radar Target Detection method based on	Prof. Longfei Shi	National University of
09:10-09:50	polarization feature difference in strong		Defense Technology,
	interference background		China
Invited	Motion Modelling in Range-Doppler Space	Prof. Gongjian	Harbin Institute of
09:50-10:30	with Applications to Detection and Tracking	Zhou	Technology, China
10.20 10.50	Caffa Davala		

10:30-10:50 Coffee Break

Invited 10:50-11:30	Research on Focus-before-detection	Dr. Jibin Zheng	National Laboratory of Radar Signal Processing, Xidian University, China
Invited 11:30-12:10	Designing Deep Learning Algorithms in a Data Driven Way	Prof. Yizhou Yu	University of Hong Kong, China
Invited 12:10-12:50	Real time Automatic Detection of Flow Influx for Oil and Gas Drilling	Prof. Feifei Zhang	Yangtze University, China

Computer and Communications: Invited & Oral Session II

Session Chair: Prof. Zheng	Zheng, Wuhan	University of	Technology, China
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Conference 7 [临桂厅], 2nd Floor		14:00-18:00 Saturday Afternoon, July 20, 2019	
Paper ID	Title	Author	Affiliation
Invited 14:00-14:40	Applying the Bayesian Field Theory and Deep Learning for Modeling the Multi-body Energy in Proteins	Prof. Zheng Zheng	Wuhan University of Technology, China
Oral	A Multiple-scale Study of Vegetative Response to Cockpit Karst Topography in Maolan, Guizhou, China, and Ciales, Puerto Rico, USA	Bo Xu	California State University San Bernardino
Oral	A Strategy for Loading Oblique Photogrammetry model and Multi-layer Basemap Data_submit	Weiye Zhang	National University of Defense Technology
Oral	The building extraction based on object oriented classification method in high vegetation coverage area	Baoying YE	Chinese University of Geoscienses Beijing
Oral	Research on a Watermarking Algorithm for Remote Sensing Images Resist Screen Capture Attacks in Urban Planning Information Management	Xiao WANG	School of Architecture and Urban Planning, Nanjing University
Oral	Simulation of Water Pollution Diffusion Based on WebGIS	Tianqi Kuang	Suzhou University of Science and Technology
Oral	Application of InSAR in surface deformation monitoring of electric power line selection	Qiang Liu	BeiHang University

Oral	Semantic segmentation based remote sensing data fusion on crops detection	Jose Pena	Beihang University
Oral	Impact Analysis of the Biases in the A Priori Baseline Information in Multi-Reference-Antenna-Constrained Relative Positioning	Shaoshi Wu	Air Force Engineering University
Oral	Ecological Land-use Variety and Security Pattern Construction: A Case Study From Anqing, China	Jiulin Li	Nanjing University, CHINA
Oral	Comparison of Spatiotemporal Fusion Models for Producing high Spatiotemporal Resolution Normalized Difference Vegetation Index Time Series data sets	Zhizhong Han	Chongqing University of Posts and Telecommunications
Oral	Mobile Infrastructure for Monitoring, Modeling, and Forecasting of Coastal Weather Events. Phase I: Building the Smart Drifter	Jiannan Zhai	FLORIDA ATLANTIC UNIVERSITY
Oral	Research on Gesture Recognition Based on Improved GBMR Segmentation and Multiple Feature Fusion	Zhu Xianfei	R&D Center, Shanghai Aerospace Electronics Co.,Ltd.
Oral	A New Feature Selection Method Based on Correlation Guided Genetic Algorithm	Jian Zhou	Zhejiang University
Oral	Research on railway passenger flow prediction method based on GA improved BP neural network	Jian Zhang	Beijing University of Civil Engineering and Architecture
Oral	Social Network Attraction Based on Social Media Posts	Jiang-Liang Hou	National Tsing Hua University

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 Minutes of Presentation
- Plenary Speech: 30 Minutes of Presentation

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

Guilin Grand Link Hotel (桂林桂山华星酒店) locates on the bank of Li River in the beautiful city of Guilin which enjoys the fame as "having the best scenery in China". Facing the city badge the Elephant Trunk Hill across the river and adjacent to the Seven Star Park and ZiZhou Island Park. It is only 10 minutes' ride to the downtown city, the railway station, the Hi-tech Industrial Zone and International Exhibition & Conference Center, 45 minutes to Guilin Liangjiang International Airport. It is the only luxury garden resort hotel on the Li River bank and near the gardens.

Address: No. 42 Chuanshan Road, Guilin City, Guangxi Zhuang Autonomous Region, China (中国广西壮族自治区桂林市穿山路 42 号)

URL: www.guishanhotel.com

Tel: +86-773-319 9999

Fax: +86-773-319 9998

For non-Chinese author, please show the following info to the driver if you take a taxi: **请送我到:** 中国广西壮族自治区桂林市穿山路42号 桂林桂山华星酒店

Transportation

Downtown 2.56 km

Guilin Liangjiang International Airport 29.47 km Guilin Railway Station 3.47 km Guilin North Railway Station8.70 kmXiangshan Scenic Spot2.91 kmTwo rivers and four lakes3.58 km

Contact Us

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