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Part I Conference Schedule

Time: July 14-16, 2018

Location: Kunming Jin Jiang Hotel (昆明锦江大酒店)

Date	Time	Lobby		
July. 14	14:00-17:00	Registration		
Date	**Time**	**Room 1**	**Room 2**	**Room 3**
July. 15	08:00-12:00	**Materials Science** **Invited Speech Session 1:** **Chair: TBD** **Group photo & Coffee Break: 10:30-10:50**	**Chemistry** **Invited Speech Session 1:** **Chair: TBD** **Group photo & Coffee Break: 10:30-10:50**	**Chemistry** **Invited Speech Session 2 &Technical Session 1:** **Chair: TBD** **Group photo & Coffee Break: 10:30-10:50**
	12:00	Lunch		TBD
	Time	**Room 1**	**Room 2**	
	14:00-18:00	**Materials Science** **Invited Speech Session 2 :** **Chair: TBD** **Group photo & Coffee Break: 16:00-16:20**	**Chemistry** **Invited Speech Session 3 &Technical Session 2:** **Chair: TBD** **Group photo & Coffee Break: 16:00-16:20**	
	18:00	Dinner		TBD
Date	**Time**	**Room 1**	**Room 2**	
July. 16	08:00-12:00	**Materials Science** **Technical Session 1:** **Chair: TBD** **Group photo & Coffee Break: 10:30-10:50**	**Chemistry** **Invited Speech Session 4 &Technical Session 3:** **Chair: TBD** **Group photo & Coffee Break: 10:30-10:50**	
	12:00	Lunch		TBD

Part II Invited Speech

Materials Science: Invited Speech Session 1

Invited Speech 1: Solution Behaviour in the Vicinity of Contact Surfaces for Elastic and Rigid Plastic Models

Speaker: Dr. Sergei Alexandrov, Beihang University, China
Time: 08:30-09:00, Sunday Morning, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract
This presentation consists of two parts. The first part deals with the behaviour of rigid plastic solutions in the vicinity of frictional interfaces at large strains. Several widely used material models are considered including rigid perfectly plastic material, the double shearing model and a viscoplastic model with a saturation stress. It is demonstrated that the solutions at maximum friction surfaces are singular. In particular, the quadratic invariant of the strain rate tensor approaches infinity in the vicinity of such surfaces. Asymptotic analysis shows that this invariant follows an inverse square root rule. This theoretical finding can be used for developing an approach for predicting the generation of fine grain layers near frictional interfaces in material processing including processing of composite materials. The second part of the presentation deals with the behaviour of elastic plastic solutions of damage mechanics in the vicinity of frictional interfaces at small strains. The constitutive equations comprise Hooke's law, a yield criterion, its associated flow rule, and a damage evolution equation. The damage parameter affects the yield stress and elastic moduli but the associated flow rule is not altered by the damage parameter. A widely used fracture criterion postulates that the damage parameter attains a critical value at the instant of fracture initiation. The behavior of solution in the pull-out test is studied. It is assumed that the regime of sticking occurs at the friction surface. The general solution to the boundary value problem is found. As the loading parameter increases, the shear stress at the friction surface increases. It is shown that there is such a value of the loading parameter that the general solution breaks down but the fracture criterion is not satisfied. This means that no solution to the boundary value problem exists.

Invited Speech 2: Development of functional composite nanomaterials with thin channel for material and chemical analysis

Speaker: Prof. C. Bor Fuh, National Chi Nan University, Chinese Taipei, China
Time: 09:00-09:30, Sunday Morning, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract
Functional composite nanomaterials have been widely used for various applications of industry, biochemistry and biomedicine. The advantages of functional composite nanomaterials have grown up and applied in many new applications. This presentation would show the development of several functional composite nanomaterials with thin channel for material and biochemical analyses with good performances. Several functional composite nanomaterials and model biomarkers would be used to demonstrate the biochemical applications. In comparison with other methods, this method has lower detection limit and wider linear range. The objectives of this study are providing a simple, fast, sensitive, and selective analysis for particles, proteins, and other biomaterials.

Invited Speech 3: Composite materials for anticorrosion coating application

Speaker: Prof. Juiming Yeh, Chung Yuan Christian University, Chinese Taipei, China
Time: 09:30-10:00, Sunday Morning, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract
In this work, polymers composites containing different nanofillers (such as nano metal oxide particles, clay nanoplatelets and graphene nanoplatelets) were presented and applied in anticorrosion coatings. The anticorrosion performance of as-prepared composites coating upon cold rolled steel (CRS) electrode was evaluated by a series of electrochemical corrosion measurements in saline conditions. It should be noted that the composite coatings were found to show better anticorrosion performance as compared to that of neat polymer coatings in terms of the dispersion of nanofillers into polymeric coating to effectively increase the length of the diffusion pathways for oxygen or water molecules.

Invited Speech 4: Materials Consideration of Conducting Polymer Composites for Flexible Triboelectric Nanogenerators

Speaker: Prof. Sin-Doo Lee, Seoul National University, Republic of Korea
Time: 10:00-10:30, Sunday Morning, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract

Flexible triboelectric nanogenerators (TENGs) have attracted great attention from energy-harvesting in small, mobile, and wearable electronics. In most of TENGs, metal has been widely used as a contact layer because it will reduce the charge loss during the induction process, thereby improving the electric output. For practical applications, however, typical metals suffer from the opaqueness and the brittleness. Moreover, they usually require a vacuum-based fabrication process which is not desirable for flexible substrates. In contrast to metal, conducting polymer (CP) is promising for the contact layer in a flexible TENG owing to both high electronegativity and high transparency together with the excellent mechanical properties. In this work, we present the effect of the physical and chemical properties of the CP film on triboelectricity to optimize the output performance of the CP-based TENG. This work serves a viable scheme of designing high-performance flexible TENGs from the relationship between the film property and triboelectricity

Invited Speech 5: Advanced processing of high temperature ceramic composites

Speaker: Prof. Jos é A. Bea, University of Zaragoza, Spain
Time: 10:50-11:20, Sunday Morning, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract

Laser processing of Ceramics and Glass has been proposed as a method to enable a multitude of surface functionalities and unforeseen relevant applications, although laser-induced thermal shock has hindered full use of lasers within these industrial sectors. Most of the former materials suffer cracking and, eventually, catastrophic failure as a consequence of accumulated thermo-mechanical stress. In order to avoid this problem, a patented device has been developed which combines continuous laser scanning with uniform movement of the samples across a roller kiln kept under a convenient temperature profile. This unprecedented methodology enables treatment of any surface at extreme temperatures, while the sample's volume is kept at reasonably low temperatures. For example, BaZrO3 coatings melting near 3000 ℃ have been processed over Al2O3 substrates at temperatures around 2100 ℃, or over porcelain tiles at 1140 ℃, insuring very robust coatings integrated at the atomic scale into the

substrate. This talk will present the Laser Furnace models developed so far and will review the most relevant results obtained to date in glass and ceramics.

Invited Speech 6: Self-healing behavior of dynamic crosslinked polymers

Speaker: Prof. Zhijiang (Justin) Ye, Miami University, USA
Time: 11:20-11:50, Sunday Morning, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract

Dynamically crosslinked polymers and their composites have tremendous potential in the development of the next round of advanced materials for aerospace hardware and sensing applications. These materials contain dynamic or exchangeable crosslinkers of two main types: non-covalently bound crosslinkers, and dynamic covalently bound crosslinkers. These two categories provide significantly different self-healing behaviors. Here, we use a combined computational and experimental approach to study the self-healing behavior and mechanical stability of various crosslinked polymer systems. Atomistic and coarse-grained models are used to study their mechanical response and to understand the mechanism with which both non-covalent and dynamic covalent linkages respond to different types of external stimuli. The results of the simulations are then compared and validated against experimental measurements. Furthermore, we use the computational models to investigate the design of dual dynamic crosslinkers where one linkage exchanges rapidly and provides autonomic dynamic character, while the other is a stimulus responsive dynamic covalent linkage that provides stability with dynamic exchange on-demand.

Invited Speech 7: A quick method for the in vitro synthesis of gold nanoparticles

Speaker: Prof. Rajiv Dutta, College of Engineering & Technology (CET), India
Time: 14:00-14:30, Sunday Afternoon, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract

Metallic nanoparticles such as gold, silver, copper and zinc are being used as catalysts, chemical and biological sensors in several biomedical applications. In medicine, they are likely to be applied as antimicrobial, antifungal and as drug delivery agents. Metallic nanoparticles are the most promising because of their high surface to volume ratio. Several methods like physical and chemicals are available for the synthesis of metallic nanoparticles but they are very hazardous, toxic, costly vacuum system, environment containment and time taking process. Thus the green synthesis bioprocess is much needed and hence has been finding widespread interest.

The biosynthesis of metallic nanoparticles from corresponding metals carries out several routes like plant extracts, enzymes and using micro organisms. The potential of plants to synthesis nanoparticles have featured excitingly very large toward the increased of natural nano-factories. This remarkable development has brought an insight among researchers for advancement of molecules which are precise and efficient by using refined and potentially remarkable strategies. Various plants have been already reported for nanoparticles synthesis such as Cinnamomum camphora, Medicago sativa, Pelargonium graveolens, Avena sativa, Azadirachta indica, Tamarindus indica, Emblica officinalis, Aloe vera, Coriandrum sativum, Carica papaya, Parthenium hysterophorus, Acanthella elongata, Sesuvium portulacastrum, Chrysanthemum indicum L, Melia azedarach L, Saraca indica, Caesalpinia coriaria. To the best of our knowledge, we have reported first time fastest and rapid method for the synthesis of gold nanoparticles (AuNPs) within 20 sec.

Materials Science: Invited Speech Session 2

Invited Speech 6: Conjugating functional molecules on cardiovascular biomaterials to direct the cells fate

Speaker: Dr. Jingan Li, Zhengzhou University, China
Time: 14:30-15:00, Sunday Afternoon, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract

Cardiovascular disease is generally accepted as the leading cause of morbidity and mortality worldwide, and lots of people suffer from atherosclerosis and thrombosis every year. To treat these disorders and prolong the patients' life, the cardiovascular stents have been developed and applied clinically. Nevertheless, thrombosis and hyperplasia at the site of implanting cardiovascular stents are recognized as long-term problems in the practice of interventional cardiology. Although the drug-eluting stents make excellent contribution to treat early thrombosis and inflammation, the loading drugs also delay vascular healing and re-endothelialization, leading to high risk of late thrombosis and hyperplasia. Recent researches show that stent surface modification with functional molecules can significantly improve surface re-endothelialization and reduce the late thrombosis/hyperplasia, and this process is closely related to the crucial parameters of the conjugated molecules, including the molecular classification, size, distributed density and conformation. Therefore, reasonably conjugating functional molecules on the surface is of great importance for improving the biocompatibility of the cardiovascular stents. Here, we introduced several novel strategies on surface modification of cardiovascular biomaterials in our research group and discuss the prospects for extending use of the surface construction of functional molecules in designing the next generation of vascular stents. This work was supported by the Joint Fund for Fostering Talents of National Natural Science Foundation of China and Henan

province (U1504310), China Postdoctoral Science Foundation (2015M582206), and Young Teachers Foundation of Zhengzhou University (No. 32210475).

Invited Speech 7: The biochemical applications of functional magnetic nanoparticles with homemade magnetic microplates

Speaker: Prof. Hweiyan Tsai, Chung Shan Medical University, Chinese Taipei, China
Time: 15:00-15:30, Sunday Afternoon, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract

We would report the applications of bio-labeled magnetic nanoparticles for biomarker detections in the first part of this speech. The efficiency of the immunoreaction was improved by integrating the sandwich immunoassay using functional magnetic and fluorescent nanoparticles with a homemade magnetic microplate. This method has many potential advantages, such as (1) the amount of proteins immobilized on the particles is consistent in the same batch. (2) The functional magnetic particles (MPs) can be made antibody labeling easily. (3) MPs can be dispersed in a solution to yield a pseudohomogeneous reaction with antigens. (4) They can be easily separated and redispersed in the solution by selective using the magnetic force. (5) It is easily adapted with current instruments. The second part of this speech will include the applications of tyrosinase-labeled magnetic nanoparticles on quick screening of true tyrosinase inhibitors from natural products, and efficient determination of L-dopa in complex formulations. Tyrosinase is responsible for the undesired enzymatic browning of fruits that occurs during senescence or following damage incurred at post-harvest handling and processing. These phenomena have led to the search for new potent tyrosinase inhibitors for use in foods and cosmetics. Here, we used a microplate assay integrating tyrosinase-immobilized magnetic nanoparticles (TYR-MNPs) and a homemade magnetic microplate for the high-throughput screening of natural products. This method can screen compounds that actually interact with the active sites of the enzyme, distinguishing them from antioxidants or tyrosinase substrates. This system can also be used for a high throughput and selective determination of L-dopa (levodopa) in complex pharmaceutical formulations.

Invited Speech 8: Overcome the strength-ductility trade-off in steels by a novel short-range ordering strengthening concept

Speaker: Dr. Wenwen Song, RWTH Aachen University, Germany
Time: 15:30-16:00, Sunday Afternoon, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract

The enhancement of mechanical properties is of great importance for the modern steels design. By adopting the conventional strengthening mechanisms, strength can increase substantially, albeit at the expense of formability. In the present work, we propose a new pathway to overcome the strength-ductility trade-off by employing a novel short-range ordering (SRO) strengthening concept. The formation of the SRO in an Al-alloyed high-Mn steel was investigated by means of a combined method of ab initio calculations and various experimental approaches, e.g. in-situ high-energy synchrotron X-ray diffraction (SYXRD) and small angle neutron scattering (SANS). The results for the first time prove the presence of SRO in Fe-Mn-Al-C lightweight steels experimentally. The quantum mechanics based ab initio calculations provide an explanation of the SRO formation mechanism in Fe-Mn-Al-C steels. By an appropriate SRO formation control, the strength and ductility are enhanced either individually or simultaneously, which distinguishes the SRO strengthening concept from other conventional strengthening mechanisms. This SRO strengthening concept seems a promising strategy to overcome the strength-ductility trade-off and be further adopted in the current available continuous annealing production lines in the industry.

Invited Speech 9: Rheological Properties and Applications of Magnetorheological (MR) Materials

Speaker: Dr. Saiful Amri Mazlan, Universiti Teknologi Malaysia, Malaysia
Time: 16:20-16:50, Sunday Afternoon, July 15, 2018
Location: Room 1, Kunming Jin Jiang Hotel

Abstract

During the last few decades, magnetorheological (MR) materials have attracted a significant amount of attention for their enormous potential in engineering applications. MR materials are well known as smart materials family due to its rheological properties can be continuously, rapidly and reversibly changed by manipulating an external magnetic field. The capability to change tunable properties depends on the penetration values of the magnetic field inside the materials. MR materials are constructed of at least two different states of components, typically non-magnetic carrier or matrix, and micron-sized

magnetizable particles. The micron-sized magnetic particles are having high permeability and saturation magnetization within non-magnetic carrier, and react to the magnetic field resulting in alteration of MR effect. However, rheological properties of MR materials are highly affected many parameters such as particle shape, composition, additives, type of medium, and particles weight of fraction. At such, the magneto-induced of MR properties are varies, thus, suitable in specific practical applications. Therefore, in this highlight, the influences of these parameters on the rheological properties of MR materials including MR fluid, MR elastomer, MR grease, and MR gel are reviewed. The application of MR materials in MR devices are also presented

Chemistry: Invited Speech Session 1

Invited Speech 1: Computational Studies of Complex Molecular Systems

Speaker: Dr. Hajime Hirao, City University of Hong Kong, China
Time: 08:30-09:00, Sunday Morning, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract
In recent decades, chemistry has become increasingly diverse, and its interdisciplinary nature has been strengthened. Amid such a tide, computational chemistry has grown tremendously into an indispensable partner of experimentalists. Remarkably, computational chemistry has the ability to provide atomic-level insights into elusive aspects of molecular events. The knowledge derived from computational studies permits precise molecular design on microscopic scales, which in turn can contribute to resolving global-scale issues associated with sustainability. We are also developing new computational methods in the hope that our methods will allow simulations of complex molecular systems to be performed with higher reliability and predictability in the future.

Invited Speech 2: Energy-transfer Nanocomposite for Bioimaging and Sensing

Speaker: Dr. Xuanjun Zhang, University of Macau, China
Time: 09:00-09:30, Sunday Morning, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract
Metal-organic frameworks (MOFs), self-assembled from metal ions and organic ligands, are considered as a novel family of materials with diverse and designable structures. They get great attractions owing to their potential

applications in energy storage, gas adsorption, catalysis, separation and so on. Here, we use nanoscale MOF (NMOF) as a novel platform to prepare energy-transfer nanoprobes. We have developed a simple yet useful surface functionalization to construct ratiometric fluorescent nanoprobes for the monitoring of microenvironment such as detection of Reactive oxygen species (ROSs), local pH values, temperature changes, and disease related molecules, etc. Poly(vinyl alcohol)(PVA) is chosen to effectively organize energy donor (NMOF) and acceptor (molecular probes). The new nanosensors showed fast response and high selectivity with dual colour switching. The MOF based nanoprobes can also combine with thermoresponsive polymer to measure temperature change via energy transfer in live cell. This approach is general and should be easily extended to the design of other NMOF based chemical sensors and biosensors.

Invited Speech 3: Computation of energy interaction, intensity as well as thermodynamic parameters for the Interaction of Ln (III) with Nucleic acid components: Theoretical studies through 4f-4f transition spectra as P

Speaker: Prof. M. Indira Devi, Nagaland University, India
Time: 09:30-10:00, Sunday Morning, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract

Nucleosides and Nucleotides are polydentate ligands, offering potential binding sites for metal ions. Polential centres of interaction with metal ions and bioligands (such as polyamines occurring in living cells) are N (I) and N (7) atoms from the purine base, the N(3) atom from the Pyrimidine base and oxygen atoms from the phosphate groups of nucleotides. The interaction of Ln (III) with nucleotides and nucleotides has been attracted much attention due to the realization that the metabolically active forms of many nucleotides are one in which a metal ion is co-ordinated. Again the second motive has been to use peramgnetic lanthanide in NMR spectroscopic investigations aimed at determining the solution structure of these molecules. Energy interaction parameters: Slater Condon Fk(cm^{-1}), Spin Orbit interaction (cm^{-1}), Nephelauxetic Ratio (β), Bonding (b½) and Co-valency (δ) parameter for the interaction of Pr(III) with Nucleosides and Nucleotides are evaluated to study the mode of binding of the Nucleic Acid Components with Pr(III). Further Intensity Parameters like Oscillation Strength and Judd Ofelt Parameter (T2,T4,T6) have been evaluated to investigate degree of inner or outer sphere co-ordination of Pr(III) with Nucliec Acid ligands. Comperative Absorption Spectra in different solvents substantiate the informations, gathered from the evaluated values of both energy interaction and intensity parameters. Further evaluation of Thermodynamic parameters through Kinetic studies enable to provide the detailed information of the complexation process of neucleosides and nucleotides with Pr(III).

Invited Speech 4: Physico-Chemical Controlled Approach to Study the Behavior of surfactant (SDS) in Aqueous Solutions of Polymers

Speaker: Dr. KUNDAN SHARMA, Department of Higher Education, Govt. of Himachal Pradesh Shimla, India
Time: 10:00-10:30, Sunday Morning, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract

Taken into consideration the importance of polymer-surfactant system, in present we have discussed the intermolecular interactions present in solution containing sodium dodecyl sulfate (SDS) in six different solvent concentrations of polymer and their mixtures in their mass ratio (1g PEG (m1), 0.8:0.2 PEG/PVP (m2), 0.6:0.4 PEG/PVP (m3), 0.4:0.6 PEG/PVP (m4), 0.2:0.8 PEG/PVP (m5) and 1g PVP (m6) in 100 ml of distilled water) having molal concentration correspond to 1.66 mmol kg-1, 1.38 mmol kg-1, 1.10 mmol kg-1, 0.81 mmol kg-1, 0.53 mmol kg-1 and 0.25 mmol kg-1, respectively. It suffices to mention here that the concentration (molality) corresponds to the total polymer content in the solution. All the measurements were carried out at three different temperatures, i.e. 293.15, 303.15 and 313.15 K. The whole experiment was carried out with techniques like surface tension, viscosity and refractive index measurements. Different parameters of relevance like surface excess, minimum area per molecule at air-water interface, relative viscosity, viscous relaxation time and limiting dielectric constant etc. have been evaluated from surface tension, viscosity and refractive index measurements. This persistence of the surface tension beyond the critical micelle concentration (CMC) appears to suggest that the aggregate formation in the presence of the PEG or PVP or their blends is sufficiently large. The close approximated value of relative viscosity to the unity implies that the conformational changes in the polymer are minimal. The refractive index measurements further reveal that overall polarizability of the studied systems increases with an increase in the amount of polymer in the solution.

Invited Speech 5: High-Performance Polyethylene from Ethylene Polymerization Catalyzed by Homogeneous and Heterogeneous Metal Complexes

Speaker: Prof. Cun-Yue Guo, University of Chinese Academy of Sciences, China
Time: 10:50-11:20, Sunday Morning, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract
Metal complexes with various ligands and the introduction of inorganic fillers are two predominant ways in preparing high-performance polyethylene (PE). Firstly, several series of nickel procatalysts used for ethylene (co)polymerization will be presented herein. The bidentate nickel complexes with N-N ligands and O-P ligands afforded highly branched polyethylene and functional ethylene copolymers respectively. Secondly, mesoporous molecular sieves (MMS) were introduced to support the catalyst and provide the place (nanoreactor) for ethylene polymerization. The pore sizes of MMS are suitable for ethylene polymerizations to proceed in an extrusion mode and the as-prepared polyethylene are in situ compounded with MMS particles to form polymer nanocomposites. The introduction of MMS endows the PE with increased molecular weights and molecular weight distribution, elevated strength and modulus, and good processability, etc..

Invited Speech 6: Olefin Metathesis in Copolymer Synthesis

Speaker: Dr. Maria Gringolts, Russian Academy of Sciences, Russia
Time: 11:20-11:50, Sunday Morning, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract
Olefin metathesis has now become a well-known and effective tool in organic and polymer chemistry. The great developments in synthesis of effective and tolerant catalyst, which earned Nobel Prize in 2005 year, and modern synthesis of stereo- and enantioselective catalysts have put forward olefin metathesis to the number of effective tools for the design of macromolecules of diverse architecture. Most of approaches to metathesis (co)polymer synthesis are based on two main types of the reaction: ring-opening metathesis polymerization (ROMP) of cyclic olefins and acyclic diene metathesis (ADMET). The possibility to realize “living” or controlled synthesis supplies the way to block-copolymers and sequence controlled (co)polymerization. Catalysts for ROMP can be tuned to achieve alternating copolymers. Structure of comonomers is another way to copolymer design. We focused on a poor studied macromolecular olefin cross-metathesis between different polymers with double bonds in the

main chain, which is a new way to statistical multiblock-copolymers. During the interaction between two chemically different macromolecules with unsaturated backbones an interchange reaction takes place and a copolymer is formed. For our study, we have chosen commercial polymers, namely polynorbornene (PNB), polyoctenamer (PCOE), polybutadiene (PBD), and polyoctenamer with different substituents. The new statistical multiblock NB-COE and NB-COD copolymers up to the fully random structure were obtained via the cross-metathesis reaction. The «structure-properties» relations for the cross-olefin metathesis copolymers will be demonstrated. The author is grateful to the Russian Foundation for Basic Research (Projects 17-03-00596)

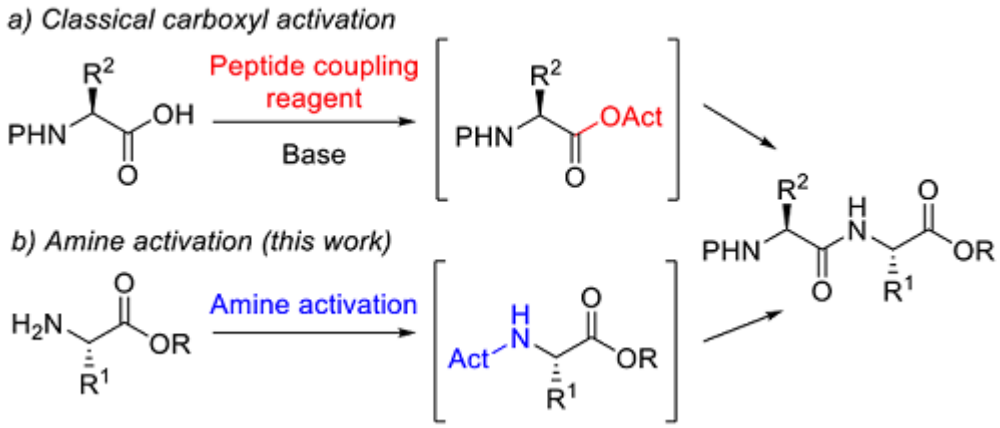
Chemistry: Invited Speech Session 2

Invited Speech 7: INVERSE PEPTIDE SYNTHESIS VIA ACTIVATED α-AMINOESTERS

Speaker: Prof. Jean-Marc Campagne, University of Montpellier, France
Time: 08:30-09:00, Sunday Morning, July 15, 2018
Location: Room 3, Kunming Jin Jiang Hotel

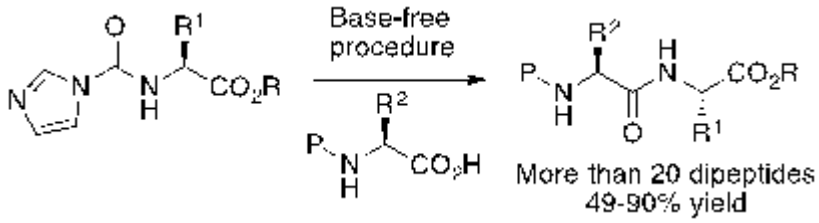
Abstract

Peptides are attracting increasing attention on different fields such as medicinal chemistry, polymers and materials science. While these molecules are naturally built up from the N→C direction, they are chemically synthesized from the opposite direction (C→N). Indeed, the traditional synthesis proceeds through the activation of the carboxylic acid moiety of a first aminoacid, by means of coupling reagents, allowing the nucleophilic attack of the amino partner of a second aminoacid with concomitant formation of the amide bond (Scheme 1, a).1 Although very efficient, these coupling reagent strategies suffer from some drawbacks, notably those associated with epimerization. So, we embarked on a program aiming to synthesize amides for application in peptide synthesis via the activation of the amine function instead of the carboxylic acid (Scheme 1, b). By doing so, we wish to avoid some inherent problems found on classic peptide synthesis (e.g. epimerization) and also to approach from the natural synthesis of peptides (N→C direction).



Scheme 1: Peptide synthesis

The use of N,N'-carbonyldiimidazole (CDI) for the preparation of unprecedented activated -aminoesters, and their transformations into several dipeptides and tripeptides will be discussed (Scheme 2). 2



Scheme 2: Dipeptide Syntheses via Activated α-Aminoesters

Invited Speech 8: Vitamin K2 Prevents Lymphoma in Drosophila

Speaker: Prof. Ling Hong, Huazhong University of Science and Technology, China
Time: 09:00-09:30, Sunday Morning, July 15, 2018
Location: Room 3, Kunming Jin Jiang Hotel

Abstract

Previous studies have established the anticancer effect of vitamin K2 (VK2). However, its effect on lymphoma induced by UBIAD1/heix mutation in Drosophila remains unknown. Therefore, we aimed to develop an in vivo model of lymphoma for the precise characterization of lymphoma phenotypes. We also aimed to improve the understanding of the mechanisms that underlie the preventative effects of VK2 on lymphoma. Our results demonstrated that VK2 prevents lymphoma by acting as an electron carrier and by correcting the function and structure of mitochondria by inhibiting mitochondrial reactive oxygen species mtROS production. In this study, Drosophila lymphoma characterized by lymph gland hyperplasia and hemocyte proliferation were completely rescued upon treatment with vitamin K2. Vitamin K2 played

a role as an anticancer compound and restore most of disorders caused by heix mutation through rescuing of speed rate, locomotion, hatch rate, pip out rate, disappearance of melanotic black spots, restoring normal structure of lymph glands, brain, and mitochondrial function through return of mitochondrial membrane potential, increasing ATP production and decreasing mitochondrial reactive oxygen species (mtROS) release beside inhibition of C-jun N- terminal kinase (JNK) and ERK (MAPK) phosphorylation as well as rescuing normal expression of immune related pathways such as Toll and IMD pathway and rescuing normal structure of mitochondria. Taken together, these findings revealed that VK2 rescued heix mutation phenotype via restoring mitochondrial function and structure. Our unique finding could participate in building a new strategy in fighting cancers and treating certain neurodegenerative diseases such as Parkinson's disease, taking advantage of safety use of vitamins with heavy doses and long term treatment. Our work identifies mitochondria as a key player in cancer therapy strategies.

Invited Speech 9: Undergraduate Research Projects Using Correlation Analysis Studies in Solution Chemistry and QSAR Modeling

Speaker: Dr. Malcolm J. D' Souza, Wesley College, USA
Time: 09:30-10:00, Sunday Morning, July 15, 2018
Location: Room 3, Kunming Jin Jiang Hotel

Abstract

Over the past 15 years through federal and state grant support, we have provided the unique opportunity for undergraduates early on in their careers (some, beginning as freshmen), to begin original research in chemistry within a Wesley College Directed Research program. The main goal is to attract, train, and retain competent students in the STEM-fields by providing experiences rooted in the process of discovery within a laboratory-setting. This program achieved success because research productivity was enhanced by developing collaborative partnerships with neighboring in-state institutions and the local industry. This presentation will outline the detailed analyses of the solvolytic data for chloroformate, chlorothioformate, chlorothionoformate, and chlorodithioformate esters. Using multiple regression LFER (linear free energy relationship) models as a means for relating one numerical response variable to two independent (or predictor) variables, we will outline methods to rationalize the solvent influences of sulfur-for-oxygen substitution in the solvent reactions of chloroformate esters. We will also present methods to validate, analyze, or predict, the ADME/tox (absorption, distribution, metabolism, excretion, and toxicity) pharmacokinetic properties.

Invited Speech 10: Molecular Engineering of D-π-A Organic Dyes for Bio-Inspired Dye Sensitized Solar Cells

Speaker: Prof. Vinich Promarak, Vidyasirimedhi Institute of Science and Technology, Thailand
Time: 10:00-10:30, Sunday Morning, July 15, 2018
Location: Room 3, Kunming Jin Jiang Hotel

Abstract

Dye-sensitized solar cell (DSSC), another type of bio-inspired solar cell development, has emerged as one of the most attractive photovoltaic devices because it offers the possibility of low-cost conversion of photoenergy. Ruthenium complex and porphyrin dyes are currently the most efficient dyes. These dyes, however, are costly and hard to prepare in high yields, which have led to the evolution of metal-free organic dyes. Organic dyes exhibit not only higher extinction coefficient, but simple preparation, structure modification and purification procedure with a low cost. In this talk, an improvement of the performance of the organic dyes as sensitizers for DSSC by fine tuning the dye chemical structures will be presented. A series of organic dipolar compounds with different molecular configurations of D-π-A, D-D-π-A, D(dendron)-π-A, D-π-A-π-A, D-π (D)-A, D-π-A-π(D)-A bearing porphyrin, triarylamine, carbazole and carbazole dendrons as donor moiety were designed, synthesized and investigated. The relationships between structure of these dyes and properties and cell performances will be drawn and discussed. The choice of π-linker, auxiliary acceptor and terminal acceptor are found to be crucial in designing of the dye. Some of these dyes show power conversion efficiencies surpass that of the Ru-based device measured under similar conditions, indicating a high potential candidate for a commercial use.

Invited Speech 11: Orbital Phase Theory and the Diastereoselectivity of Some Organic Reactions

Speaker: Prof. Yuji NARUSE, Gifu University, Japan
Time: 10:50-11:20, Sunday Morning, July 15, 2018
Location: Room 3, Kunming Jin Jiang Hotel

Abstract

The orbital phase refers to the relationship among the orbitals that originates from their wave character. When the interactions among orbitals lead to ring closure, electrons should delocalize among them to produce stabilization when the orbitals satisfy the requirements for phase continuity. We show here that, in some cases, this cyclic orbital interaction, i.e., the orbital phase, essentially determines diastereoselectivity. We focus

on three organic reactions: - Torquoselectivity of the electrocyclic ring-opening reaction of 3-substituted cyclobutenes. - Torquoselectivity of the retro-Nazarov reaction. - Diastereoselectivity in the electrophilic addition to substituted propylenes.

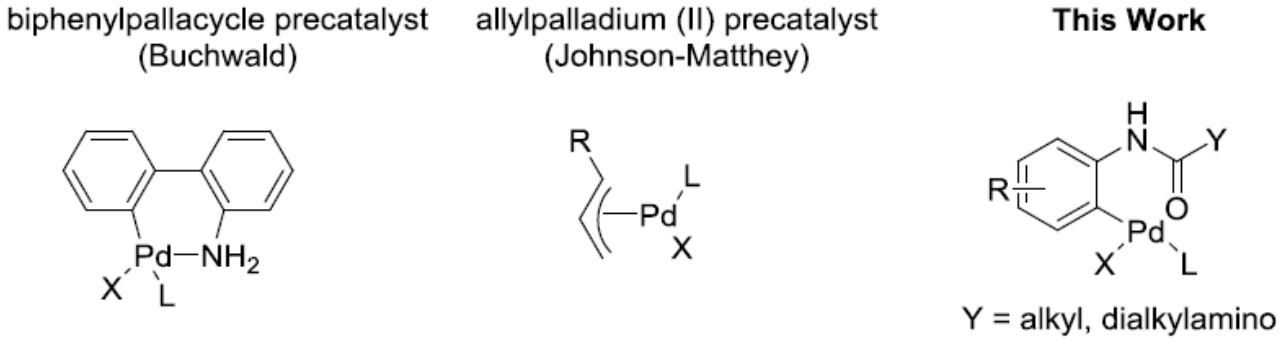
Chemistry: Invited Speech Session 3

Invited Speech 12: Simple and Highly Effective Mono-ligated Arylpalladacycle Complexes for Suzuki Cross Coupling Reactions

Speaker: Dr. Chunming Zhang, Dow Chemical Company, USA
Time: 14:00-14:30, Sunday Afternoon, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract

The Palladium catalyzed reaction of aryl halide (iodide, bromide, chloride), and aryl pseudohalides (e.g. triflate, tosylate, mesylate) with various substrates is a general method employed for the formation of CC, C-N, C-O bonds, which plays an important role in synthesis of fine chemicals, agricultural and pharmaceutical products, and advanced materials. The reactivity of the palladium catalyst is greatly influenced by its structural features and the number of associated ligands to the metal. Mono-ligated palladium complexes, bearing one bulky and electron-rich ligand, have been demonstrated to be highly effective catalysts/precatalysts. Among such examples are Buchwald's biphenylpalladacycle precatalysts and Johnson-Matthey's allylpalladium (II) complexes. Here we report a type of very simple, and highly efficient mono-ligated arylpalladacyle precatalysts (Figure below). In Suzuki reactions these precatalysts exhibit mild reaction conditions, low catalyst loadings, short reaction times, and provide high yields. Their ease to prepare, stability to air and moisture could make them desirable for applications in large-scale industrial processes.



Invited Speech 13: Novel Mesoporous Catalysts for Glycerol Conversion to Value-Added Chemicals Towards More Sustainable Oleochemical Industry

Speaker: Prof. Ahmad Zuhairi Abdullah, Universiti Sains Malaysia, Malaysia
Time: 14:30-15:00, Sunday Afternoon, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract

Glycerol is a simple polyol that is excessively produced as a by-product in oleochemical and biodiesel industries to cause a sharp drop in its price. Future scenarios for worldwide glycerol market will mostly be related to the supply and demand of glycerol and its application in other non-traditional downstream industries. Due to the unique structure of glycerol, properties and renewability feature of it, new opportunities for the transformation of glycerol into high-valued chemicals have emerged in recent years. Glycerol has been demonstrated to be transformed through novel catalytic processes into oxygenated biocomponents as alternatives to conventional petroleum-derived fuel additives. Oxygenate additives could assist in octane rating increment and combustion quality that reduce particulate emission and carbon monoxide production. Various types of oxygenated biocomponents have been developed and rigorous studies of glycerol transformation into fuel additives through catalytic etherification, acetylation and acetalation processes have been conducted. Success in these green conversions depends very much on the use of the right catalytic materials with the desired properties and optimized process conditions to selectively produce the desired substances. Mesoporosity is among the key issues due to the high viscosity liquid reactant. Access to active sites located on the internal surface will be influenced by internal diffusion rate. Catalytic etherification of glycerol to polyglycerols is another option to add value to glycerol. Polyglycerols are biodegradable and biocompatible products that can be used in various industries. Biocompatibility is an attractive feature of aliphatic polyether structures containing hydroxyl end-groups, including polyglycerols or linear polyethylene glycerols (PEGs). Glycerol can also be reacted with fatty acids to form monoglycerides that will find wide application in food and pharmaceutical industries. Production of lactic acid through alkali-catalyzed reactions should also be ventured into as the product may serve as a starting point for a wide range of future biobased chemicals by catalytic routes. Catalytic deoxydehydration of glycerol to acrylic acid also provides vast opportunity for downstream industry due to high demand for the product as the principal raw materials for the manufacture of various polymeric products. The main concerns are always to find the right type of stable catalyst with high activity and selectivity to the desired compounds. Current research focus in these areas circulates around novel catalysts to improve conversions while showing high yield of the desired product. Technical hurdles, opportunities and critical technical aspects in the catalytic process will be reviewed.

Invited Speech 14: Artificial Mn4Ca-clusters and Its Analogues Mimicking the Oxygen-Evolving Center in Photosystem II

Speaker: Prof. Chunxi Zhang, Institute of Chemistry, Chinese Academy of Sciences, China
Time: 15:00-15:30, Sunday Afternoon, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract

Oxygen-evolving center (OEC) of photosystem II (PSII) in plants is a unique biological catalyst that catalyzes the water-splitting reaction to release proton, electron and dioxygen. It is composed of an asymmetric Mn4Ca-cluster ligated by four water molecules, one imidazole and six carboxylate groups of amino acid residues. This natural catalyst serves as a blueprint for the development of artificial catalyst for water splitting to generate hydrogen fuel as renewable energy source. It is a great challenge to synthesize this natural catalyst in the laboratory. In 2015, we reported the first artificial Mn4Ca-cluster closely mimicked the structure and properties of the OEC in PSII (see above Figure, C. Zhang, et al. Science, 2015, 348:690-693). Here the detail synthetic mechanism of the artificial Mn4Ca-cluster and its analogues have been reported, specifically, a robust supramolecular architecture composed by the artificial Mn4Ca-cluster, which provides important clues to develop new generation catalyst for water-splitting reaction in the future.

Invited Speech 15: Photocatalytic Properties and Sensor Applications of Multi-Metallic Oxide Nanocomposites for Sustainable Safe Environment

Speaker: Dr. Md Abdus Subhan, Shah Jalal University of Science and Technology, Bangladesh
Time: 15:30-16:00, Sunday Afternoon, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract

Mixed metal oxides are the combinations of two or more metallic ions with oxygen in appropriate proportions. An appropriate combination of different individual oxides in a nano mixed metal oxide composites, can produce new materials with exceptional structural or electronic properties that can lead to excellent electronic and catalytic activity [1-2]. Mixed metal oxide nanocomposites like B2O3•Zn6Al2O9•ZnO, Fe3O4@Ag@Ni are synthesized by facile co-precipitation and hydrothermal methods and characterized by AFM, XRD, SEM, TEM, EDS, FTIR and photoluminescence (PL) spectroscopic studies. Surface morphologies are investigated by SEM, TEM and AFM studies. The PL behavior of the catalysts are diverse and some of the catalysts are found exhibit excitation wavelength dependent PL. Dye removal efficiency

of the composite materials is investigated by the photocatalytic process in aqueous medium under Visible or UV light irradiation using catalytic H2O2. Mixed metal oxide nanocomposites like AgO.ZnO•Fe3O4, MgO•ZnO•Al2O3 as well as APTMS and curcumin coated composites have also been synthesized. Both coated and noncoated nanocomposites have been characterized by AFM, XRD, SEM, EDS, FTIR and PL spectra. The average crystallite size of the Ag-ZnO-Fe3O4, APTMS coated Ag-ZnO-Fe3O4 and curcumin coated Ag-ZnO-Fe3O4 mixed metal oxides are found to be 21.63, 15.33 and 29.74 nm [2]. The catalysts showed excellent photo-catalytic dye degradation efficiency in slightly alkaline pH in presence or absence of catalytic H2O2 [3-4]. Trimetallic oxide nanocomposites particles are found to show an excellent sensor activity to detect hazardous chemicals for environmental protection as well as anti-microbial functions[5,6]. References 1. M. A. Subhan et al., Journal of Luminescence, 146(2014)123–127. 2. M. A. Subhan, N. Uddin, P. Sarker and N. U. Ahmed, Adv. Sci. Eng. Med. 8, 676–688 (2016). 3. M. A. Subhan, N. Uddin, P.Sarker, A.K. Azad and K. Begum, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 149 (2015) 839–850. 4. M. A. Subhan, N. Uddin, P. Sarker, H. Nakata and R. Makioka, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 151 (2015) 56–63. 5. M. A. Subhan, P. C. Saha, M.M. Rahman, M. A. R. Akand, A.M. Asiri and M. A. Mamun, New J.Chem., 2017, 41, 7220. 6. M. A. Subhan et. al., New J.Chem., 2018, 42, 872.

Invited Speech 16: Triazine-containing Dendrimers as Mesogenes or porous materials

Speaker: Dr. Long-Li Lai, National Chi Nan University, Chinese Taipei, China
Time: 16:20-16:50, Sunday Afternoon, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract
Dendrimers, often possessing the tree-like and branched 3-D frameworks, have attracted a great of attention. Particularly, dendrimers consist of central connecting and peripheral units, and combination of these functional moieties lead them to exhibit versatile molecular conformations. Therefore, dendrimers are designed and prepared for various purposes, Dendrimers have been observed to exhibit columnar liquid crystalline (LC) phases and found useful in photovoltaics and field transistors due to their non-grained boundary and uniform alignment. However, various combinations of cores, linkage units, and peripheral functionalities of dendrimers lead their molecular conformations to be versatile, and therefore, it is not easy to control their molecular shapes as those of traditional rod-like or disc-shaped LC molecules. On the other hand, global warming has become a key concern and CO2 gas is regarded as one of the important causes. So, reducing CO2 gas emission, such as the capturing of CO2 from the industrial gas waste, is currently a challenge and the development of effective technologies for adsorbing CO2 will be necessary in the future.We thus aim to prepare triazine-based dendrimers with special peripheral

functionalites, such as flexible alkyl chains or bulky moieties, to study their mesogenic behaviors on thermal treatment or their gas adsorbing ability in the solid state, respectively.

Chemistry: Invited Speech Session 4

Invited Speech 17: Conversion of Petroleum Coke to Porous Carbon through Design Optimization and its Application to Refinery Waste Water Treatment

Speaker: Dr. Chandrasekar Srinivasakannan, Khalifa University of Science and Technology (The Petroleum Institute), United Arab Emirates
Time: 08:30-09:00, Sunday Morning, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract

Preparation and process optimization of porous carbons using different carbon sources and activating agents are frequently and commonly reported in open literature. However, only scanty references are made on utilization of petroleum coke for conversion to high surface area porous carbon using KOH as the activating agent. Hence the present work attempts a process optimization exercise to prepare high surface area porous carbon from Petroleum coke using chemical activation (KOH) utilizing design of experiments. The effect of activation temperature, petroleum coke to KOH ratio (KPR) and activation duration were assessed on the surface area and yield of the porous carbon. The process optimization was performed covering experimental parameters in the range of 500-800^{0}C, 2-5 and 30-120 min. The optimal process conditions for maximizing the yield and BET surface area was identified to be an activation temperature of 639^{0}C, KPR of 4.5 and activation duration of 43 min, having BET surface area 1765 m2/g and yield of 89.8%. However, an attempt to maximize only the BET surface area, ignoring yield has resulted with a porous carbon with maximum surface area of 2061 m2/g, with the optimal process conditions being an activation temperature of 688^{0}C, KPR of 3.8 and activation duration of 74 min, with the corresponding yield of only 77%. The characterization of porous carbon was performed using nitrogen adsorption isotherm, FT-IR and SEM analysis. Effectiveness of its application in comparison with the commercial porous carbon that are being utilized in the polishing units of the petroleum refinery to remove the phenolic compounds and the COD load is as well presented.

Invited Speech 18: Light 4 Future - Promoting Green Chemistry in Science Education

Speaker: Prof. Michael W. Tausch, Bergische Universität Wuppertal, Germany
Time: 09:00-09:30, Sunday Morning, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract
In order to accelerate the overall realization of of green chemistry, science education is challenged, to include innovative contents based on sustainable energies, substances and procedures. In this sense young generation should be guided towards those topics, that combine their everyday experiences with convincing applications from modern science and technology. Processes involving light, such as photovoltaics and electroluminescence, as well as photocatalytic synthesis of energy storing compounds and photoactive smart materials, are par excellence suitable to fulfill this requirement. The lecture presents an experimental approach to a conceptual framework able to explain all basic phenomena involving light in a reasonable first approximation for students in high school, college and university. However, a series of experiments and teaching materials will be introduced and made available on the website www.chemiedidaktik.uni-wuppertal.de/english/. According to the demand "from CO2 biology to CO2 economy", an experimental simulation of the natural carbon cycle in photosynthesis and respiration will be highlighted. The simulation consists of a system of coupled reaction cycles that illustrates the conversion of light energy into chemical energy and storage in a reduced substrate.n

Invited Speech 19: Exploration of CSC as Green catalyst for Organic Transformation

Speaker: Dr. Bashir Ahmad Dar, Higher education Govt. of J&K India, India
Time: 09:30-10:00, Sunday Morning, July 15, 2018
Location: Room 2, Kunming Jin Jiang Hotel

Abstract
One of the major current challenges before chemists is to develop synthetic methods that are less polluting, i.e., to design clean or 'green' chemical transformations. The problem has become more acute in recent times and has received wider attention because of our better understanding of the causes of environmental degradation. Industries and scientific organizations have put clean technology as an important R & D concern. The area of chemistry, which is particularly directed to achieve such goals, is termed as 'green chemistry' and is defined, according to an US award program, to be one that 'encompasses all

aspects and types of chemical processes – including synthesis, catalysis, analysis, monitoring, separations and reaction conditions – that reduce impacts on human health and the environment relative to the current state of the art. In achieving many of these goals, catalysts help the synthetic chemist in a big way. An important family of catalysts that has received considerable attention of the synthetic chemist in recent times is derived from the soil, the most noteworthy ones being clays and zeolites. Clays are solid acidic catalysts which can function as both Bronsted and Lewis acids in their natural and ion-exchanged form. Using clay catalysts, environmentally benign green chemistry can be done both at industrial level and laboratory scale. Cu -Clay has developed into trendy heterogeneous catalyst in our group owing to its characteristic properties such as enhanced reactivity, selectivity and a straight forward work-up procedure.

Part III Technical Sessions

Materials Science: Technical Session 1

Session Chair:

Room 1, Floor 08:30-12:00, Monday Morning, July 16, 2018

ID	Paper Title	Author	Affiliation
Oral 1-1	Synthesis, Characterization of Conjugated Sulfonated-based electroactive Polyurea and Its Application in Corrosion Protection Coating	Guan-Ying Chen	CYCU department of chemistry
Oral 1-2	Structure design and enhanced dielectric properties of organic-inorganic composite materials	Qilong Zhang	Zhejiang University
Oral 1-3	Enhanced electrochemical performance of polyaniline-based organic-inorganic composites	WANG QIANQIAN	Zhengjiang University
Oral 1-4	A micro-structure based constitutive model for anisotropic stress–strain behaviors of artery tissues	Tongqing Lu	Xi'an Jiaotong University
Oral 1-5	Nano-metals/graphene-based composite materials developed for counter electrodes of dye-sensitized solar cells	Yuan-Hsiang Yu	Fu Jen Catholic University
Oral 1-6	Supercapacitive properties of polyanilineruthenium oxide composite electrode with network structure	Gaini Zhang	Baoji University of Arts and Sciences
Oral 1-7	Effect of DBSA surfactant on the microstructure of polyaniline electrode materials for supercapacitor	Lijun Ren	Baoji University of Arts and Sciences
Oral 1-8	Synthesis of Branched Silicon-containing Arylethyleneacetylene Resin and the Performance of Casting	Yusheng Chen	Key Laboratory of Specially Functional Polymeric Meterials and Related Technology of the Ministry of Education

			ECUST
10:30-10:50	**Coffee Break**		
Oral 1-9	Noble Metals with Nanometer Dimensions Supported on Titanium Oxide	Xim Bokhimi	Universidad Nacional Autonoma de Mexico
Oral 1-10	Feasibility Study to Evaluate Lattice-Space Changing of a Step-Graded SiGe / Si (110) Using STEM Moir é	Junji YAMANAKA	University of Yamanashi
Oral 1-11	Formation of Hybrid Aluminum Alloys with Improved Tensile Properties by Roll-Bonding Process	Cha-Yong LIM	Kore Institute of Materials Science
Oral 1-12	Microstructure and mechanical properties of Al-Zn-Mg-Cu alloy sheets fabricated by twin roll casting and rolling	Hyoungwook Kim	Korea Institute of Materials Science

Chemistry: Invited Speech Session 2 &Technical Session 1

Session Chair:

Room 3, Floor 08:30-12:00, Sunday Morning, July 15, 2018

ID	Paper Title	Author	Affiliation
Invited 08:30-09:00	INVERSE PEPTIDE SYNTHESIS VIA ACTIVATED α-AMINOESTERS	Prof. Jean-Marc Campagne	University of Montpellier
Invited 09:00-09:30	Vitamin K2 Prevents Lymphoma in Drosophila	Prof. Ling Hong	Huazhong University of Science and Technology
Invited 09:30-10:00	Undergraduate Research Projects Using Correlation Analysis Studies in Solution Chemistry and QSAR Modeling	Prof. Malcolm J. D'Souza	Wesley College
Invited 10:00-10:30	Molecular Engineering of D-π-A Organic Dyes for Bio-Inspired Dye Sensitized Solar Cells	Dr. Vinich Promarak	Vidyasirimedhi Institute of Science and Technology
10:30-10:50	**Coffee Break**		
Invited 10:50-11:20	Orbital Phase Theory and the Diastereoselectivity of Some Organic Reactions	Prof. Yuji NARUSE	Gifu University
Oral 2-1	Dehydrogenative Coupling Reaction of Quinoline N-Oxides with Arylsulfonamides under Metal-free Conditions	Xiaoqiang Yu	Dalian University of Technology
Oral 2-2	Density functional theory calculation of CO adsorption on Al(111) surface	Chenhong Xu	Huaiyin Institute of Technology
Oral 2-3	The state of the art of tube support plate clogging phenomenon in PWR steam generators	Guangze Yang	Sun Yat-sen University

Chemistry: Invited Speech Session 3 &Technical Session 2

Session Chair:

Room 2, Floor 14:00-18:00, Sunday Afternoon, July 15, 2018

ID	Paper Title	Author	Affiliation
Invited 14:00-14:30	Simple and Highly Effective Mono-ligated Arylpalladacycle Complexes for Suzuki Cross Coupling Reactions	Dr. Chunming Zhang	Dow Chemical Company
Invited 14:30-15:00	Novel Mesoporous Catalysts for Glycerol Conversion to Value-Added Chemicals Towards More Sustainable Oleochemical Industry	Prof. Ahmad Zuhairi Abdullah	Universiti Sains Malaysia
Invited 15:00-15:30	Artificial Mn4Ca-clusters and Its Analogues Mimicking the Oxygen-Evolving Center in Photosystem II	Prof. Chunxi Zhang	Institute of Chemistry Chinese Academy of Sciences
Invited 15:30-16:00	Photocatalytic Properties and Sensor Applications of Multi-Metallic Oxide Nanocomposites for Sustainable Safe Environment	Dr. Md Abdus Subhan	Shah Jalal University of Science and Technology
16:00-16:20	**Coffee Break**		
Invited 16:20-16:50	Triazine-containing Dendrimers as Mesogenes or porous materials	Dr. Long-Li Lai	National Chi Nan University
Oral 2-4	A smart hydrogel stimulated by glucose for in vitro controlled release of insulin	Kunhua Lin	Guangdong Provincial Key Laboratory for High
Oral 2-5	Interactions between α-amylase and an acidic branched polysaccharide from green tea	Liqun Yang	Sun Yat-sen University
Oral 2-6	Preparation of tea polysaccharide nano-particles with high efficacy of small intestinal targeted absorption property	Xuhong Mao	Sun Yat-sen University
Oral	Metal Free Synthesis of Polycarbonate	Xiaoshuang Feng	Physical Sciences

2-7	Through Copolymerization of CO2 and Epoxide		and Engineering Division

Chemistry: Invited Speech Session 4 &Technical Session 3

Session Chair:

Room 2, Floor 08:30-12:00, Monday Morning, July 16, 2018

ID	Paper Title	Author	Affiliation
Invited 08:30-09:00	Conversion of Petroleum Coke to Porous Carbon through Design Optimization and its Application to Refinery Waste Water Treatment	Dr. Chandrasekar Srinivasakannan	Khalifa University of Science and Technology (The Petroleum Institute)
Invited 09:00-09:30	Light 4 Future - Promoting Green Chemistry in Science Education	Prof. Michael W. Tausch	Bergische Universität Wuppertal
Invited 09:30-10:00	Exploration of CSC as Green catalyst for Organic Transformation	Dr. Bashir Ahmad Dar	Higher education Govt. of J&K India
Oral 2-8	Study on cellulase gene expressed in Pichia pastoris and analyses of its biochemical characters	Qingqiang Yin	Henan Agricultural University
Oral 2-9	Improvement of Biogas Production from Sulfate-rich Wastewater by the Addition of Zero Valent Scrap Iron	Chan Phalakornkule	King Mongkut's University of Technology North Bangkok
10:30-10:50	**Coffee Break**		
Oral 2-10	Dehydrogenation of n-butane to butenes and 1,3-butadiene over PtAg/Al2O3 catalysts in the presence of H2	Hideki Kurokawa	Saitama University
Oral 2-11	Ethylene/1-hexene copolymerization over porous organic polymers-supported metallocene catalysts	Xiong Wang	Lanzhou Petrochemical Research Center, Petrochemical Research Institute

Oral 2-12	Microwave Catalysis under Microwave Irradiation -- Microwave irradiation is a new type of power energy for speeding up chemical reactions	Jicheng Zhou	Xiangtan University
Oral 2-13	Catalyst Design for High Energy Li-air Batteries	Jim Zheng	Florida State University
Oral 2-14	Enhanced Methanol to Olefin Catalysis by coupling MgO and SAPO-34	Zhu Ruyue	China University of Petroleum
Oral 2-15	Preparation of Ni-Mo/Al2O3 catalyst with large penetrable pores and its catalytic performance in hydrodesulfurization reaction	Tingting Fan	China University of Petroleum
Oral 2-16	Hydrocracking of LCO over bifunctional catalysts	Jie Xu	China University of Petroleum
Oral 2-17	The ratio of mass transfer to total mass transfer in pores with different sizes	Wei Sun	China University of Petroleum
Oral 2-18	Fine-controlled Sub-nano Metal Particles in Dendrimer Kimihisa Yamamoto	Kimimihisa Yamamoto	Institute of Innovative Research, Tokyo Institute of Technology
Oral 2-19	Energetic coordination compound [La(tza)(NO3)2(H2O)4]n based on tetrazole-1-aceticacid: syntheses, crystal structures and its catalytic thermal decomposition of HMX	Wei Zhi-Xian	School of Environmental and safty Engineering, North University of China
Oral 2-20	Kinetics and mechanism of catalytic decomposition of H2O2 on CDots/g-C3N4 composite	Miao Yang	Wuhan University of Technology
Oral 2-21	Insights into the Synergistic Effect of Surface and Bulk Defects in Ultra-Small N-Doped Titanium Suboxides on	Huijun Li	University of Shanghai for Science and

	Photocatalytic Hydrogen Evolution		Technology
Oral 2-22	Anisotropic of disordered surface shell of black TiO2: ultrahigh effect photocatalytic performance in direct processing of sewage	Xianying Wang	University of Shanghai for Science and Technology
Oral 2-23	Floating photocatalysts of hollow glass microspheres supported visible-light-driven ZnIn2S4 photocatalyst: Synthesis, characterization and photocatalytic application	Leilei Wang	Xi`an University of Architecture and Technology
Oral 2-24	A study on the catalytic oxdition of lignin and preparation of aromatic aldehyde compounds carried by Phosphotungstic acid	Hongxi Zhang	Changji University
Oral 2-25	New catalytic concepts for asymmetric synthesis –ways towards (R,R,R)- -tocopherol	Werner Bonrath	DSM

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

Requirement for the Presenters:

Stand beside his (her) Poster through the Session, and discuss with the readers about his (her) paper

Part VI Hotel Information

About Hotel

Kunming Jin Jiang Hotel (昆明锦江大酒店) is recognized as one of the most distinguished deluxe hotels in Kunming, an area rich with Yunnan minority culture and warm hospitality. Situated in the heart of the commercial and trade center, the hotel is within walking distance of Jewelry City and both the Kunming International Trade Center and Foreign Trade Center.There are 320 well-appointed guestrooms, seven deluxe restaurants and conference and banquet facilities. With its high-quality service standard, the hotel is ideal for both business and leisure travelers alike.

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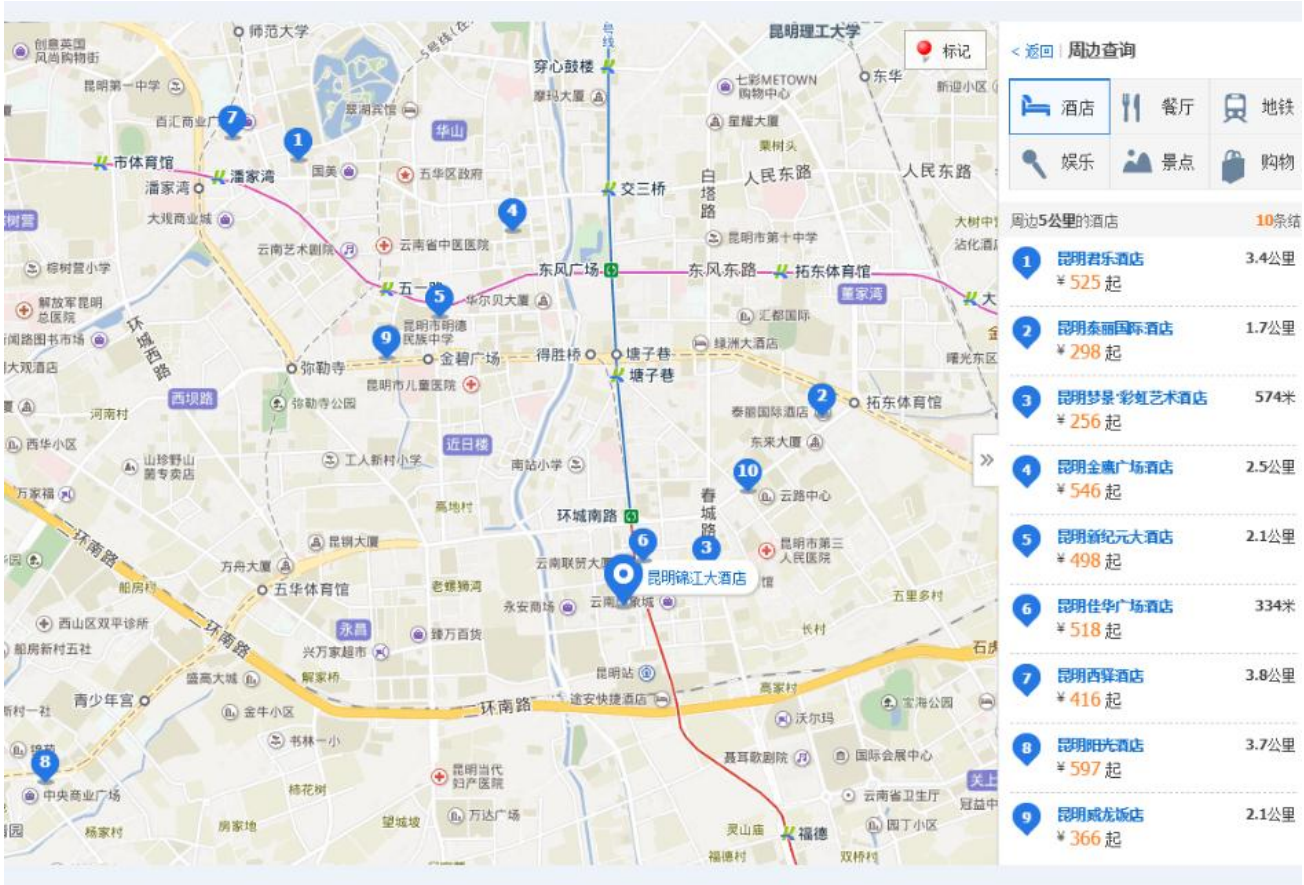

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