High Resolution Ion Separations, Reaction, and Storage; Towards a Flexible Gas Phase Ion Chemistry Workbench based upon Structures for Lossless Ion Manipulations

Chair: Sang-Won Lee (Korea University)

Dr. Richard D. Smith
Chief Scientist and Battelle Fellow
Biological Science Division, Pacific Northwest National Laboratory, USA

Gas phase ion chemistry is of broad interest and has importance in areas ranging from fundamental physics, to analytical chemistry, to biomedical research, and most of its applications are done in conjunction with the use of mass spectrometry (MS). New MS applications as well as related instrumental platform advances increasingly involve ion manipulations that are conducted between the ion source and MS analyzer. These manipulations include: ion transport through regions of elevated pressure, ion trapping, reactions (both ion-molecule and ion-ion), and ion mobility (IM)-based separations. While performing these manipulations can extend measurement capabilities or provide new kinds of information, the practicality of such manipulations becomes increasingly constrained by the cost and inefficiency of conventional instrumental designs and ion optic approaches as their complexity or the number of manipulation steps involved increases. For example, advances in MS-based analytical applications are often limited by their speed in conjunction with the use of liquid chromatography separations. In this regard, IM separations provide additional separation power and the basis for more sensitive, complete and effective analyses, as well as additional structure-related information (i.e., collision cross sections) that can be derived from these separations. The benefits of IM separations increase as separation power increases, and the limitations on both its resolving power and sensitivity have constrained applications of IM with MS.

To address these challenges, we are developing new approaches for ion manipulations based upon effectively lossless RF confinement achieved in readily fabricated Structures for Lossless Ion Manipulations (SLIM). An important aspect of these developments has been the use of traveling waves to drive and control ion motion in conjunction with SLIM. This has allowed the development of compact long separation path lengths (serpentine) designs that enable much higher resolution IM separations than previously feasible. The use of traveling waves in SLIM has also enabled a host of new capabilities. This includes the creation of extremely large ion trapping volumes and the ability in both spatially and temporally to compress ion populations, including IM separations, without loss of resolution.

This presentation will describe the basis for SLIM as well as recent developments that address many current challenges within a range of applications and that provide new capabilities, such as the basis for a broadly flexible ion chemistry workbench.
Development of New Synthetic Methods in Organic Synthesis

Chair: Sang-gi Lee (Ewha Womans University)

In this award lecture, a variety of synthetic methods that have developed over the last 30 years from my laboratory are introduced. First, alkyl, alkenyl, alkynyl, allyl, allenyl, and acyl cross-coupling reactions using a variety of in situ generated organoindium reagents are presented. On the basis of Au-catalyzed hydrophosphoryloxylation, the synthetic methods for novel phosphaheterocyclic compounds have been developed through C−H activation using phosphoryl directing groups. Also, my research focuses on developing new synthetic approaches for heterocyclic compounds using diazo compounds, triazoles, pyridotriazoles, and thiadiazoles in the presence of transition metal catalysts. Recently, my laboratory is interested in selectively activating B−H bond in carboranes and understanding reactivity of nonbenzenoid aromatic compounds.
3. Special Symposium by Leading Mid-career Polymer Scientists

Organizer: Myung-Han Yoon (GIST)

Chair: Myung-Han Yoon (GIST)

15:40 POLY1-1 Stimuli-Responsive Polymers with Tunable Sensitivity Driven by Morphological Change for Sensing Applications
Hyung-il Lee
Department of Chemistry, University of Ulsan, Korea

16:10 POLY1-2 Formation of organic semiconducting crystalline wires for the application to polymer-gated organic devices
Seungmoon Pyo
Department of Chemistry, Konkuk University, Korea

16:40 POLY1-3 Imaging Behavior of Highly Fluorinated Materials under Electron-Beam and Extreme UV Radiation
Jin-kyun Lee
Department of Polymer Science & Engineering, Inha University, Korea

17:10 POLY1-4 Semiconducting Polymers Consisting of New Donating and Accepting Building Blocks for Organic Photovoltaic Cells
Do-Hoon Hwang
Department of Chemistry, Pusan National University, Korea
4. Recent Trends in Polymer Synthesis

Organizer: Myungeun Seo (KAIST)

Chair: Myungeun Seo (KAIST)

09:00 POLY2-1 Thiourea-based Aromatic Gels: Anion-Responsive Soft Actuator and Sensor
Changsik Song
Department of Chemistry, Sungkyunkwan University, Korea

09:25 POLY2-2 Polymers and Polymerization for Coating Living Cells
Sung Ho Yang
Department of Chemical Education, Korea National University of Education, Korea

09:50 Coffee Break

10:00 POLY2-3 Influence of Material Properties on Scratch-Healing Performance of Intrinsic Self-healing Polymers
Jin chul Kim
Center for Green Fine Chemicals, Korea Research Institute of Chemical Technology, Korea

10:25 POLY2-4 Epoxy-Based Copolymers: A Simple, But Versatile Toolbox for Functional Material Platforms
Myungwoong Kim
Department of Chemistry, Inha University, Korea
5. Polymer Development for Energy & Environment

Organizer : Han Young Woo (Korea University)

Chair : Han Young Woo (Korea University)

14:30 POLY3-1 Molecular Orientation-Dependent Photovoltaic Performance in Organic Solar Cells
Kilwon Cho
Department of Chemical Engineering, Pohang University of Science and Technology, Korea

15:00 POLY3-2 Highly Efficient, Photostable Ternary Organic Solar Cells Using Narrow Bandgap Nonfullerene Acceptor and Fullerene Additive
Kwanghee Lee
Department of Materials Science and Engineering, Gwangju Institute of Science and Technology, Korea

15:30 POLY3-3 Conducting polymers and their application to highly stable and green processable hybride solar cells with high efficiency
Taiho Park
Department of Chemical Engineering, Pohang University of Science and Technology, Korea

16:00 POLY3-4 Application of Nonvolatile Polymeric Additives in Organic Solar Cells
Changdук Yang
Department of Energy Engineering, Ulsan National Institute of Science and Technology, Korea
## 6. Recent Trends in Metal-Organic Frameworks

Organizer: Nak Cheon Jeong (DGIST)

### Chair: Nak Cheon Jeong (DGIST)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
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<tbody>
<tr>
<td>15:40</td>
<td>INOR1-1</td>
<td>Symmetry-Guided Syntheses of Mixed-Linker Zr-MOFs with Precise Linker Locations</td>
<td>Myoung Soo Lah</td>
<td>Department of Chemistry, Ulsan National Institute of Science and Technology, Korea</td>
</tr>
<tr>
<td>16:10</td>
<td>INOR1-2</td>
<td>Toward Novel and Versatile Building Block for Zr-based Prototype MOFs</td>
<td>Hyungphil Chun</td>
<td>Department of Applied Chemistry, Hanyang University, Korea</td>
</tr>
<tr>
<td>16:30</td>
<td>INOR1-3</td>
<td>Catalysis in nanostructured materials for energy-conversion</td>
<td>Seok Min Yoon</td>
<td>Department of Chemistry, Wonkwang University, Korea</td>
</tr>
<tr>
<td>16:50</td>
<td></td>
<td>Coffee Break</td>
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</table>

### Chair: Chang Yeon Lee (Incheon National University)

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>17:00</td>
<td>INOR1-4</td>
<td>New Approaches of Metal-Organic Frameworks toward Hydrogen Isotope Separation</td>
<td>Hoi Ri Moon</td>
<td>Department of Chemistry, Ulsan National Institute of Science and Technology, Korea</td>
</tr>
<tr>
<td>17:20</td>
<td>INOR1-5</td>
<td>Investigation of Reaction Sites on Metal-Organic Frameworks-Based Catalysts</td>
<td>Min Kim¹, Nakcheol Jeong¹</td>
<td>Department of Chemistry, Chungbuk National University, Korea</td>
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<td>Department of Chemistry, Korea University, Korea</td>
</tr>
<tr>
<td>17:40</td>
<td></td>
<td>Inorganic Chemistry Division General Meeting</td>
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## Symposium

### Inorganic Chemistry Symposium 2
April 19 (Fri), Room 401+402

## Organizer

**Myung Hwan Park**
Present Associate Professor, Department of Chemistry Education, Chungbuk National University, Korea
2012 Manager, Petrochemical and Polymer R&D, LG Chem Research Park, Korea
2010 Ph.D, Department of Chemistry, KAIST, Korea

## Speaker

### Min Hyung Lee
Present Professor, Department of Chemistry, University of Ulsan, Korea
2001 Ph.D, Department of Chemistry, KAIST, Korea
1995 B.S, Department of Chemistry, KAIST, Korea

### Kang Mun Lee
Present Assistant Professor, Kangwon National University, Korea
2014 Professional Researcher, Samsung Advanced Institute of Technology, Korea
2013 Ph.D, Department of Chemistry, KAIST, Korea

### Sukwon Hong
Present Professor, Department of Chemistry, Gwangju Institute of Science and Technology, Korea
2005-11 Assistant Professor, Department of Chemistry, University of Florida, USA
2003 Ph.D Department of Chemistry, Northwestern University, USA

### Sunwoo Lee
Present Professor, Department of Chemistry, Chonnam National University, Korea
2001 Postdoc, Department of Chemistry, Yale University, USA
1999 Ph.D, Department of Chemistry, POSTECH, Korea

### Taek-Mo Chung
Present Director, Advanced Materials Division, KRICT, Korea
1994 Postdoc, Department of Chemistry, MIT, USA
1992 Ph.D, Department of Chemistry, Seoul National University

## 7. Recent Trends in Organometallic Chemistry

Organizer: Myung Hwan Park (Chungbuk National University)

### Chair: Myung Hwan Park (Chungbuk National University)

<table>
<thead>
<tr>
<th>Time</th>
<th>INOR2-1</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00</td>
<td>INOR2-1</td>
<td>Ortho-Carbazole-Appended Triarylboron Compounds: From Color-Tunable TADF Emitters to Time-Resolved Fluorescence Sensors</td>
<td>Min Hyung Lee</td>
<td>Department of Chemistry, University of Ulsan, Korea</td>
</tr>
<tr>
<td>09:20</td>
<td>INOR2-2</td>
<td>Strategic Molecular-Design for High Chemical-Stability of Blue Phosphors in OLEDs</td>
<td>Kang Mun Lee</td>
<td>Department of Chemistry, Kangwon National University, Korea</td>
</tr>
<tr>
<td>09:40</td>
<td>INOR2-3</td>
<td>Imidazo[1,5-a]pyridine-derived N-Heterocyclic Carbene Ligands</td>
<td>Sukwon Hong</td>
<td>Department of Chemistry, Gwangju Institute of Science and Technology, Korea</td>
</tr>
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<tr>
<th>Time</th>
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<th>Transition-Metal-Catalyzed Decarboxylative Coupling Reactions</th>
<th>Sunwoo Lee</th>
<th>Department of Chemistry, Chonnam National University, Korea</th>
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<td>10:10</td>
<td>INOR2-5</td>
<td>Development of Metal Precursors and Application to ALD/CVD</td>
<td>Taek-Mo Chung</td>
<td>Advanced Materials Division, Korea Research Institute of Chemical Technology, Korea</td>
</tr>
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09:00 Coffee Break

### Chair: Kang Mun Lee (Kangwon National University)

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</tr>
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10:00 Coffee Break
8. Recent Trends in Supramolecular Chemistry

Organizer: Junseong Lee (Chonnam National University)

Chair: Junseong Lee (Chonnam National University)

14:30 INOR3-1 Pillar[5]arenes, Invitation to Metallosupramolecular Chemistry: Metal-Induced Chiral Inversion, Adaptive Guest Binding, and Polypseudorotaxane

Shim Sung Lee
Department of Chemistry, Gyeongsang National University, Korea

15:00 INOR3-2 Reversible Structural Flexibility of Pd6L8 Cages via Recognition of Alkyl Sulfate Surfactants

Ok-Sang Jung*, Dongwon Kim†
Department of Chemistry, Pusan National University, Korea

*Pusan National University, Korea
†Pusan National University, Korea

15:30 Coffee Break

15:40 INOR3-3 Self-assembly of BODIPY based Metal Supramolecules: Synthesis and Applications

Chang Yeon Lee
Department of Energy and Chemical Engineering, Incheon National University, Korea

16:00 INOR3-4 Mixed-Matrix Membranes with Hydrophilic Metal-Organic Polyhedra for Efficient CO2 Separation

Hyunuk Kim
Energy Materials Laboratory, Korea Institute of Energy Research, Korea
9. Current Advances in Reaction Dynamics

Organizer: Jeongho Kim (Inha University)

Chair: Yoonsoo Pang (GIST)

<Award Lecture: IPJAE Physical Chemistry Award>

15:40 PHYS1-1 Circular dichroism spectroscopy of chiral molecules and ions in the isolated gas phase

Nam Joon Kim
Department of Chemistry, Chungbuk National University, Korea

16:10 PHYS1-2 Molecular reaction dynamics by time-resolved wave packet spectroscopies and molecular dynamics simulation

Wooseok Heo, Junwoo Kim, Taiha Joo
Department of Chemistry, Pohang University of Science and Technology, Korea

16:35 PHYS1-3 Ionic effects on excited state proton transfer reaction of Coumarin 183 in aqueous ionic solutions

Joonyoung F. Joung, Sangin Kim, Sungnam Park
Department of Chemistry, Korea University, Korea

17:00 Coffee Break

Chair: Hyungjun Kim (KAIST)

17:10 PHYS1-4 Photochemistry based on excited state molecular dynamics

Seung Kyu Min
Department of Chemistry, Ulsan National Institute of Science and Technology, Korea

17:35 PHYS1-5 Ultra-Fast Spectroscopy to Probe the Excited State Dynamics of Reported Highly Efficient Thermally Activated Delayed Fluorescence Chromophore

Hyungjun Kim
Department of Chemistry, Incheon National University, Korea
Symposium

Physical Chemistry Symposium 2
April 19 (Fri), Room 305+306

Organizer

Bong June Sung
Present Professor, Department of Chemistry, Sogang University, Korea
2006 Ph. D., Department of Chemistry, UW-Madison, USA
1999 B.S., Department of Chemistry, Seoul National University, Korea

Chair

Changsun Eun
Present Assistant Professor, Department of Chemistry, Hankuk University of Foreign Studies

Speaker

Jae Woo Park
Present Assistant Professor, Department of Chemistry, Chungbuk National University, Korea
2015 Ph. D., Department of Chemistry, POSTECH, Korea
2010 B. S., Department of Chemistry, POSTECH, Korea

Kyoung Chul Ko
Present Assistant Professor, Department of Chemistry Education, Chonnam National University, Korea
2016 Postdoc, Physical Chemistry Department, Barcelona University, Spain
2013 Ph.D, Department of Chemistry, Sungkyunkwan University, Korea

Hyungjun Kim
Present Assistant professor, Department of Chemistry, Incheon National University
2018 Postdoc, Department of Chemistry, University of Michigan
2014 Ph. D., Department of Chemistry, KAST

Jaehoon Jung
Present Associate Professor, Department of Chemistry, University of Ulsan, Korea
2015 Postdoc, Surface and Interface Science Laboratory, RIKEN, Japan
2011 Ph.D, Department of Advanced Materials Science, The University of Tokyo, Japan

Sang Uck Lee
Present Associate Professor, Department of Chemical and Molecular Engineering
2014 Assistant Professor, Department of Chemistry, University of Ulsan
2012 Researcher, LG Chem. Research Park

10. Current Advances in Theoretical and Computational Chemistry

Organizer : Bong June Sung (Sogang University)

Chair : Changsun Eun (Hankuk University of Foreign Studies)

09:00 PHYS2-1 CASPT2 photochemistry
Jae Woo Park
Department of Chemistry, Chungbuk National University, Korea

09:20 PHYS2-2 DFT studies on size-dependent level alignment between anatase and rutile TiO2 nanoparticles
Kyoung Chul Ko
Department of Chemistry Education, Chonnam National University, Korea

09:40 PHYS2-3 Enacting Two-Electron Transfer from a Double-Triplet State of Intramolecular Singlet Fission
Hyungjun Kim
Department of Chemistry, Incheon National University, Korea

10:00 PHYS2-4 Computational studies on functionalization of 2D materials
Jaehoon Jung
Department of Chemistry, University of Ulsan, Korea

10:20 PHYS2-5 Computational Approach to Electrocatalytic Reactions using New Theoretical Methodology: One Probe and Non-Equilibrium Surface Green’s Function
Sang Uck Lee
Department of Bionano Technology, Hanyang University, Korea
11. Physical Chemistry Approaches in Energy and Environmental Materials

Organizer : Yun Jeong Hwang (KIST)

Chair : Jongwoow Lim (Seoul National University)

<Award Lecture: Shin Kook Joe Award>

14:30  
**PHYS3-1** Understanding the charging dynamics of an ionic liquid electric double layer capacitor  
YounJoong Jung  
*Division of Chemistry, Seoul National University, Korea*

15:00  
**PHYS3-2** Nanometric Water Channels in Water-in-Salts Electrolytes of Li-Ion Battery observed with 2D-IR Spectroscopy.  
Kyungwon Kwak*, Minhaeng Cho  
*Department of Chemistry, Korea University, Korea*

15:20  
**PHYS3-3** Towards controlling of Li$_2$O$_2$ structures for improvement of charging overpotential in lithium-oxygen batteries  
Hye Ryung Byon  
*Department of Chemistry, Korea Advanced Institute of Science and Technology, Korea*

15:40  
**PHYS3-4** Promoting water photooxidation on transparent WO3 thin films using metal oxide overlayers  
Wooyul Kim  
*Department of Chemical and Biological Engineering, Sookmyung Women’s University, Korea*

16:00  
**PHYS3-5** Enhancing long-term photostability of BiVO4 photoanodes for solar water splitting by tuning electrolyte composition  
Dong Ki Lee*, Kyoun-Sin Choi$^1$  
*$^1$Chemistry, University of Wisconsin-Madison, United States*

16:20  
**PHYS3-6** A descriptor based approach to find promising catalysts – Methane oxidation on transition-metal surfaces as an example  
Jong Suk Yoo  
*Chemical Engineering, University of Seoul, Korea*
12. Advanced Instrumental Analysis Chemistry for Protein Dynamics Studies

Organizer : Hugh I. Kim (Korea University)

Chair : Youngbok Lee (Hanyang University)

15:40  ANAL1-1  3D structure study of colloidal nanocrystals using liquid phase TEM
Jungwon Park  
School of Chemical and Biological Engineering, Seoul National University, Korea

16:05  ANAL1-2  X-ray Studies of Water’s Anomalous Properties and Ground-State Protein Dynamics with Free Electron Lasers
Kyung Hwan Kim  
Department of Chemistry, POSTECH, Korea

16:30  ANAL1-3  Correlative Super-Resolution Microscopy
Doory Kim  
Department of Chemistry, Hanyang University, Korea

16:55  ANAL1-4  Protein Design and Enzyme Evolution using X-ray Crystallography
Woon Ju Song  
Department of Chemistry, Seoul National University, Korea

17:20  ANAL1-5  Real-time Hyperpolarized Magnetic Resonance Spectroscopy and Imaging
Youngbok Lee  
Department of Bio-Nano Engineering, Department of Chemical and Molecular Engineering, Korea

17:50  Analytical Chemistry Division General Meeting
13. Analytical Technologies to Improve Human Health

Organizer: Hyun Joo An (Chungnam National University)

Chair: Hyun Joo An (Chungnam National University)

14:30 **ANAL2-1** Reference Proteome-Based Subtyping of Liver Cancer

**J. Eugene Lee**
Center for Bioanalysis, Korea Research Institute of Standards and Science, Korea

14:55 **ANAL2-2** Electron microscopy study of nanomaterials

**Young Heon Kim**
Graduate School of Analytical Science and Technology, Chungnam National University, Korea

15:20 **ANAL2-3** Gastric Cancer Ascites Proteome for Potential Gastric Cancer Biomarkers Using Targeted Quantitative Methods

**Jonghwa Jin**
Division of Convergence Technology, New Drug Development Center, Korea

15:45 **ANAL2-4** Mass spectrometric approaches toward clinical proteomics

**Jin Young Kim**
Biomedical Omics Research Group, Korea Basic Science Institute, Korea

16:10 **ANAL2-5** Using Mass Spectrometry to Probe for Potential Rheumatoid Arthritis Biomarkers

**Youjin Seo**
Analytical Research Center, Korean Institute of Toxicology, Korea
14. Recent Trends in Biopharmaceuticals Research

Organizer: Jiwon Seo (GIST)

Chair: Jiwon Seo (GIST)

15:40 LIFE1-1 Core Competences in the Biopharmaceutical Development
Young-Phil Lee
Samsung Bioepis, Korea

16:10 LIFE1-2 Cellular cytosol-penetrating antibody technology and its applications
Yong-Sung Kim
Department of Applied Chemistry & Biological Engineering, Ajou University, Korea

16:40 LIFE1-3 Development of next-generation therapeutic antibodies through directed evolution
Sang Taek Jung
Department of Applied Chemistry, Kookmin University, Korea

17:10 LIFE1-4 Peptidomimetics Targeting Polo-Box Domain of Polo-like kinase 1
Jeong-kyu Bang
Korea Basic Science Institute, Korea
15. Mass Spectrometry in Chemical Biology

Organizer: Jun-Seok Lee (KIST)

Chair: Jun-Seok Lee (KIST)

09:00 LIFE2-1 Investigation of Dynamic Features of Proteins Using NMR Spectroscopy
Yangmee Kim
Department of Bioscience and Biotechnology, Konkuk University, Korea

09:30 LIFE2-2 Chemical and Computational Proteomics for Functional Target Discovery
Chu WANG
College of Chemistry and Molecular Engineering, Peking University, Beijing, China

10:00 LIFE2-3 In vivo proteome mapping by proximity labeling
Hyun-Woo Rhee
Department of Chemistry, Seoul National University, Korea

10:20 LIFE2-4 Secondary Structural Study of Biomolecules and Their Assemblies Using IM-MS and Gas-Phase IR Spectroscopy
Jongcheol Seo
Department of Chemistry, Pohang University of Science and Technology, Korea

10:40 LIFE2-5 Multiplexed proteome quantification platform using isotopic chemical and metabolic labeling
Jong-Seo Kim
Center for RNA Research, IBS, Seoul National University, Korea
Organic Chemistry Symposium 1
April 18 (Thu), Room 301+302


Organizer : Wonsuk Kim (Ewha Womans University)

Chair : Wonsuk Kim (Ewha Womans University)

15:40 ORGN1-1 Development of New Catalytic Transformations: Efficient and Selective Construction of Various N-Heterocycles
So Won Youn
Center for New Directions in Organic Synthesis, Department of Chemistry, Hanyang University, Korea

16:10 ORGN1-2 Synthetic Strategies for the Conjugated Polyene Chains of Carotenoids
Sangho Koo
Department of Chemistry, Myongji University, Korea

16:35 ORGN1-3 α-Vinyl Enolization of β-Chlorovinyl Ketones: Pathway Discovery and Synthetic Utility
Hun young Kim
College of Pharmacy, Chung-Ang University, Korea

17:00 Break

17:10 ORGN1-4 Cobalt-catalyzed Functionalization of Inert Aryl-X Bonds
Eunsung Lee
Department of Chemistry, Pohang University of Science and Technology, Korea

17:35 ORGN1-5 Copper-Catalyzed Tandem C–B and C–C Bond Formation for Asymmetric Synthesis of Organoboron Compounds
Jaesook Yun
Department of Chemistry, Sungkyunkwan University, Korea
Organic Chemistry Symposium 2
April 19 (Fri), Room 301+302


Organizer : In Su Kim (Sungkyunkwan University)

Chair : In Su Kim (Sungkyunkwan University)

09:00 ORGN2-1 Synthesis of Indole Derivatives Using Diazoindolinimines
Phil Ho Lee
Department of Chemistry, Kangwon National University, Korea

Eun Joo Kang
Department of Applied Chemistry, Kyung Hee University, Korea

09:50 Coffee Break

10:00 ORGN2-3 Pd-catalyzed polymerization using carbon monoxide
Hye-Young Jang
Department of Energy Systems Research, Ajou University, Korea

10:25 ORGN2-4 Asymmetric Catalytic Cascade Reactions for the Synthesis of Chiral Fused-ring Compounds
Sung-Gon Kim
Department of Chemistry, Kyonggi University, Korea

Organizer: Min Su Han (GIST)

Chair: Min Hee Lee (Sookmyung Women's University)

**14:30 ORGN3-1** Electric-Field Responsive Columnar Assemblies of 1,2,3-Triazole-based Liquid Crystals
Byoung-Ki Cho  
Department of Chemistry, Dankook University, Korea

**14:55 ORGN3-2** Exciplex-based Magnetic Field-Sensitive Fluorophores
Hohjai Lee  
Chemistry, Gwangju Institute of Science and Technology, Korea

**15:20 ORGN3-3** Organic Molecules For Cellular Uptake
Eun-Kyoung Bang  
Center for Neuromedicine, Korea Institute of Science and Technology, Korea
19. The Cutting Edge of Drug Discovery Chemistry

Organizer : Sung Jin Cho (DGMIF)

Chair : Sun-Joon Min (Hanyang University (ERICA))

15:40 MEDI-1  AI Drug Discovery & Precision Medicine
Tyson Kim  
Syntekabio, Inc., Korea

16:10 MEDI-2  Development of NOV1701, direct c-Myc-DNA inhibitor, for novel anti-cancer treatment
Hwan Jung Lim  
Information-Based Drug Research Center, Korea Research Institute of Chemical Technology, Korea

16:40 Coffee Break

Chair : Jaeho Yoo (CJ HealthCare, New Drug Research Center)

16:50 MEDI-3  Newly developed reversible MAO-B inhibitor circumvents the shortcomings of irreversible inhibitors in Alzheimer’s disease
Ki Duk Park  
Convergence Research Center for Dementia, Korea Institute of Science and Technology, Korea

17:20 MEDI-4  Discovery of Novel Pyruvate Dehydrogenase Kinase 4 Inhibitors for Potential Oral Treatment of Metabolic Diseases
Jin hee Ahn  
Department of Chemistry, Gwangju Institute of Science and Technology, Korea

Organizer
Sung Jin Cho  
Present Principal Researcher, Discovery Chemistry, New Drug Development Center DGMIF, Korea
2012 Senior Research Scientist, SK Life Science, Korea
2010 Post-Doctoral, Department of Medicinal Chemistry & Pharmacognosy, University of Illinois at Chicago, USA

Chair
Sun-Joon Min  
Present Associate Professor, Department of Chemical and Molecular Engineering, Hanyang University (ERICA), Korea
2015 Principle Investigator, Center for Neuro-Medicine, Korea Institute of Science and Technology, Korea
2005 Ph.D, Department of Chemistry, UCLA, USA

Jaeho Yoo  
Present CJ healthcare New drug research center. Senior researcher
2012 Hannmi pharm. researcher, researcher
2005 Division of chemistry, Yonsei university, Korea [M.S]

Speaker
Tyson Kim  
Present CEO, Syntekabio, Inc., Korea
2017 Ph.D. Seoul National University College of Medicine, Korea
2009 M.D. Inha University College of Medicine, Korea

Hwan Jung Lim  
Present Principal Scientist, Korea Research Institute of Chemical Technology, Korea
2011 Postdoc, National Institute on Drug Abuse, National Institute of Health, US
2009 Ph.D, Dept. of Chemistry, The Ohio State Univ., US

Ki Duk Park  
Present Principal Research Scientist, Convergence Research Center for Dementia, Korea Institute of Science and Technology
Present Professor, Division of Biomedical Science & Technology, KIST School, Korea Institute of Science and Technology

Jin hee Ahn  
Present Professor, Department of Chemistry, Gwangju Institute of Science and Technology, Korea
2000 Postdoc, Department of Chemistry, University of California at Berkeley, USA
1997 Ph.D. Department of Chemistry, Sogang University, Korea
**Symposium**

Material Chemistry Symposium 1
April 18 (Thu), Room 405+406

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**Organizer**

Sang-Il Choi

Present Assistant Professor, Dept. of Chemistry and Green-Nano Materials Research Center, Kyungpook National University, Korea

2011 Ph.D., Dept. of Chemistry, KAIST, Korea

2005 B.S., Dept. of Chemistry, Sungkyunkwan University, Korea

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**Speaker**

Kwangyeol Lee

2003.9- present Professor, Department of Chemistry, Korea University, Korea

1998.1-2003.8 Postdoctoral Research Associate at KAIST

1992-1997 University of Illinois at Urbana-Champaign (UIUC), Ph. D., Chemistry

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Jongmin Choi

Present Assistant Professor, Department of Energy Science & Engineering, Daegu Gyeongbuk Institute of Science & Technology, Korea

2016 Ph.D. Chemical Engineering, POSTECH, Korea

2010 B.S., Chemical Engineering, POSTECH, Korea

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Ki Min Nam

Present Assistant Professor, Department of Chemistry, Pusan National University

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Soo Min Kim

Present Senior Researcher, Institute of Advanced Composite Materials, KIST, Korea

2012 Postdoc, Department of EECS, MIT, USA

2011 Ph.D., Department of SAINT, SNU, Korea

---

Jung Tae Park

Present Assistant Professor, Department of Chemical Engineering, Konkuk University, Korea

2014 Postdoc, Department of Chemical Engineering, Massachusetts Institute of Technology, US

2012 Ph.D. Department of Chemical and Biomolecular Engineering, Yonsei University, Korea

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**20. Synthesis and Application of Multifunctional Nanocatalyst Materials**

Organizer : Sang-Il Choi (Kyungpook National University)

Chair : Sang-Il Choi (Kyungpook National University)

15:40 **MAT1-1** Toward ideal heterogeneous nanocatalysts

**Kwangyeol Lee**
Department of Chemistry, Korea University, Korea

16:05 **MAT1-2** Advanced TiO2 Nanomaterials for Photocatalytic Applications

**Jongmin Choi**
Department of Energy Science & Engineering, Daegu Gyeongbuk Institute of Science & Technology, Korea

16:30 **MAT1-3** Earth-abundant Catalysts for Electrochemical and Photoelectrochemical Water Splitting

**Ki Min Nam**
Department of Chemistry, Pusan National University, Korea

16:55 **MAT1-4** Single-crystal 2D heterostructure on wafer scale

**Soo Min Kim**
Korea Institute of Science and Technology, Korea

17:20 **MAT1-5** Advanced energy conversion and storage devices using nanostructured materials

**Jung Tae Park**
Department of Chemical Engineering, Konkuk University, Korea

Organizer: Jin Kuen Park (Hankuk University of Foreign Studies)

Chair: Jin Kuen Park (Hankuk University of Foreign Studies)

09:00 MAT2-1  Organic-Inorganic Hybrid Materials for Advanced Functionality Development in Large Area Electronics

Myung-Gil Kim
Department of Chemistry, Chung-Ang University, Korea

09:25 MAT2-2  Understanding Solidification of Polythiophene Thin Films during Spin-Coating

Yeong Don Park
Department of Energy and Chemical Engineering, Incheon National University, Korea

09:50 Coffee Break

10:00 MAT2-3  Effect of Processing Additives on Organic Photovoltaics: Recent Progress and Future Prospects

Sooncheol Kwon, Kwanghee Lee¹,*
Research Institute for Solar and Sustainable Energies (RISE), Gwangju Institute of Science and Technology, Korea

¹Department of Materials Science and Engineering, Gwangju Institute of Science and Technology, Korea

10:25 MAT2-4  TTA-based Upconversion: Principle and Biophotonic Applications

Jaehyuk Kim
Department of Chemical and Environmental Engineering, Pusan National University, Korea
22. Material Design and Applications for Artificial Photosynthesis

Organizer: Won-Sik Han (Seoul Women's University)

Chair: Won-Sik Han (Seoul Women's University)

14:30 MAT3-1 Development of Stable Dye-sensitized Photoelectrosynthesis Cell (DSPEC) for Solar Fuel Production
Kyung-Ryang Wee
Department of Applied Chemistry, Daegu University, Korea

14:55 MAT3-2 Preparation of single crystal metal foils through colossal grain growth and some of their uses
Sunghwan Jin
Center for Multidimensional Carbon Materials, Institute for Basic Science, Korea

15:20 Coffee Break

15:30 MAT3-3 Advantageous Crystalline-Amorphous Phase Boundary in Metal-Metalloid for Electrochemical Water Oxidation
Hyuksu Han
Korea Institute of Industrial Technology, Korea

15:55 MAT3-4 Highly Selective and Durable Photochemical CO2 Reduction by Molecular Mn(I) Catalyst Fixed on Particular Dye-Sensitized TiO2 Platform
Ho-Jin Son
Department of Advanced Materials Chemistry, Korea University, Korea
23. New Frontiers in Electrochemistry: Fundamentals and Applications

Organizer: Byung-Kwon Kim (Sookmyung Women's University)

Chair: Byung-Kwon Kim (Sookmyung Women's University)

15:40 ELEC1-1 Diethoxydiethylsilane as a multi-functional organic additive for Ni-rich cathode materials
Taeeun Yim
Department of Chemistry, Incheon National University, Korea

16:10 ELEC1-2 Mechanism of Contact Electrification and Redox Reaction for Au with Polydimethylsiloxane
Seongpil Hwang*, Changsuk Yun1, Juhyoun Kwak2
Department of Advanced Materials Chemistry, Korea University, Korea
1 Chemistry, Korea Advanced Institute of Science and Technology, Korea
2 Department of Chemistry, Korea Advanced Institute of Science and Technology, Korea

16:40 ELEC1-3 Electrophoretic Deposition for the Development of Bio-compatible Hydrogel-CNT Composites
Young Soo Joung
Department of Mechanical Systems Engineering, Sookmyung Women's University, Korea

17:10 ELEC1-4 Fundamental Understanding of Electroosmosis Is a Key for Developing Drug Delivery Pump
Woonsup Shin*, Junyeong Kang1
Department of Chemistry / Department of Fusion Bio, Sogang University, Korea
1 Department of Chemistry, Sogang University, Korea

17:40 Electrochemistry Division General Meeting

Organizer : Inho Nam (Chung-Ang University)

Chair : Inho Nam (Chung-Ang University)

09:00  **ELEC2-1**  Development of Non-Precious Metal Electrocatalysts Based on Mo-Compounds for Electrochemical Hydrogen Production

**Duck Hyun Youn**
Department of Chemical Engineering, Kangwon National University, Korea

09:20  **ELEC2-2**  Nanocrystalline Metal-Organic Frameworks for Electrical Applications

**Kyung min Choi**
Division of Chemical and Biomolecular Engineering, Sookmyung Women’s University, Korea

09:40  Coffee Break

09:50  **ELEC2-3**  Prussian Blue open-framework structure for energy storage and harvesting applications

**Hyun-Wook Lee**
School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology, Korea

10:10  **ELEC2-4**  Self-assembly of bio-piezoelectric materials for energy harvesters

**Juhyuck Lee**
Energy Science & Engineering, Daegu Gyeongbuk Institute of Science & Technology, Korea

10:30  **ELEC2-5**  Operando Raman microscopy for redox mechanism in organic cathode materials

**Joonhee Moon**
Advanced Nano-Surface Research Group, Korea Basic Science Institute, Korea
Symposium

Chemistry Education Symposium 1
April 18 (Thu), Room 204

25. Current Trends in Chemistry Education

Organizer: Aeran Choi (Ewha Womans University)
Chair: Aeran Choi (Ewha Womans University)

15:40 EDU-1  Curriculum of the secondary chemistry teachers' training colleges, is it good?
   Jongseok Park
   Department of Chemistry Education, Kyungpook National University, Korea

16:10 EDU-2  Chemistry Teacher’s Professional Development and Secondary School Chemistry Teacher Appointment Examination
   HyunJu Park
   Faculty of Science Education, Chosun University, Korea

16:40 Break

16:50 EDU-3  long term observation of general chemistry education for undergraduate students
   Jung Yun Do
   Department of Chemical Education, Pusan National University, Korea
26. Research Trends in Emerging Contaminants

Organizer: Yu Sik Hwang (Korea Institute of Toxicology)

Chair: Yu Sik Hwang (Korea Institute of Toxicology)

15:40 ENVR-1 Five W and one H of the regulatory research trend in nanomaterials
Byung-tae Lee
Division of Environmental Engineering, Gwangju Institute of Science and Technology, Korea

16:10 ENVR-2 Risks from biocidal active ingredients in consumer products
Jung-Hwan Kwon
Div of Environ Sci & Ecol Engr, Korea University, Korea

16:40 Coffe Break

16:50 ENVR-3 Characteristic Occurrence and Fates of Emerging Contaminants in Korean Water Environment
Jeong-Eun Oh
Department of Environmental Engineering, Pusan National University, Korea

17:20 ENVR-4 Suspect and non-target screening using LC-HRMS for identification and prioritization of emerging contaminants
Junho Jeon
Department of Environmental Engineering, Changwon National University, Korea
### 27. [NFEC] Leading Researcher, Supporting Research Equipment Policy

**Organizer**: Euh Duck Jeong (NFEC)

**Chair**: Dong Woo Kim (NFEC)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speakers</th>
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</thead>
<tbody>
<tr>
<td>15:00</td>
<td>KCS1-1</td>
<td>An introduction of R&amp;D budget investment efficiency policy and system of national research facilities &amp; equipment</td>
<td>Myeongho Yoon MSIT, Korea</td>
</tr>
<tr>
<td>15:50</td>
<td>KCS1-2</td>
<td>Research infrastructure support policy for the innovative research performance (Of the researcher, by the researcher, for the researcher)</td>
<td>Kyoungmi Lee*, Bitnam Hwang NFEC, Korea Basic Science Institute, Korea</td>
</tr>
<tr>
<td>16:30</td>
<td>KCS1-3</td>
<td>An introduction of research equipment education platform to strengthen research capacity</td>
<td>Insu Seo National Research Facilities and Equipment Center, Korea Basic Science Institute, Korea</td>
</tr>
</tbody>
</table>

Organizer : Sang Tae Kim (DONGWOO FINE-CHEM)

Chair : Myunsoo Kim (DONGWOO FINE-CHEM)

15:40 Opening

16:00 KCS2-1 IoT technology in extreme environment

Haksun Kim
Ulsan National Institute of Science and Technology, Korea

17:00 KCS2-2 The Key Materials and Process Technology for Next Generation Display

Junho Song
Korean University, Korea
KCS Symposium 3
April 19 (Fri), Room 203

29. NRF Presentation on the Basic Research Fund
Organizer: Duk-Young Jung (Sungkyunkwan University)
Chair: Duk-Young Jung (Sungkyunkwan University)

09:00 KCS3-1 Operation Plans of the Basic Research Programme of the Science and Engineering Field in 2019 and beyond; Implication for Chemistry
Hee-Yoon Lee
National Research Foundation of Korea, Korea
# Symposium

## KCS Symposium 5

April 19 (Fri), Room 404

### Speaker

<table>
<thead>
<tr>
<th>Sunyoung Bae</th>
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</thead>
<tbody>
<tr>
<td>Present: Associate Professor, Division of Chemistry and Bio-Environmental Sciences, Seoul Women's University, Korea</td>
</tr>
<tr>
<td>2008: Assistant Professor, North Carolina A&amp;T State University, USA</td>
</tr>
<tr>
<td>2002: Ph.D, University of Massachusetts-Lowell, USA</td>
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<table>
<thead>
<tr>
<th>Young Man Kim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present: Emeritus Researcher, KIST, Korea</td>
</tr>
<tr>
<td>1988: Ph. D, Department of Chemistry, Sungkyunkwan University, Korea</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Ik-Mo Lee</th>
</tr>
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<tbody>
<tr>
<td>Present: Professor, Department of Chemistry, Inha University, Korea</td>
</tr>
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</table>

### 31. [Lab Safety Education] Laboratory Safety Education for the Graduate Students

Organizer: Ik-Mo Lee (Inha University)

**Chair:** Ik-Mo Lee (Inha University)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00</td>
<td>KCS5-1</td>
<td>What To Think Prior To Research and Development in Laboratory</td>
<td>Sunyoung Bae, Division of Chemistry and Bio-Environmental Sciences, Seoul Women's University, Korea</td>
</tr>
<tr>
<td>09:40</td>
<td>KCS5-2</td>
<td>Risk Assessment System and Laboratory Accreditation</td>
<td>Young Man Kim, Advanced Analysis Center, Korea Institute of Science and Technology, Korea</td>
</tr>
<tr>
<td>10:20</td>
<td>KCS5-3</td>
<td>Characteristics of Chemicals and Examples of Accidents</td>
<td>Ik-Mo Lee, Department of Chemistry, Inha University, Korea</td>
</tr>
</tbody>
</table>
32. Oral Presentation for Young Polymer Scientists

Organizer: Jeewoo Lim (Kyung Hee University)

Chair: Jeewoo Lim (Kyung Hee University)

09:00  POLY.O-1  Living Anionic Polymerization of Furfuryl methacrylate

Kyeongsoo Shin, Myung-Han Yoon¹,*, Jae suk Lee ²,*
Materials Science and Engineering, Gwangju Institute of Science and Technology, Korea
¹ Division of Advanced Materials Engineering, Gwangju Institute of Science and Technology, Korea
² Department of Advanced Materials Engineering, Gwangju Institute of Science and Technology, Korea

09:12  POLY.O-2  A Rational Design of Highly Controlled Suzuki-Miyaura Catalyst-Transfer Polycondensation for Synthesis of Regioregular Poly(3-alkylthiophene)s and Their Block Copolymers

Jaeho Lee, Tae-Lim Choi
Division of Chemistry, Seoul National University, Korea

09:24  POLY.O-3  Discovery of Highly Efficient Organic Photoredox catalysts for Visible Light Driven Atom Transfer Radical Polymerization

Varun Singh, Min Sang Kwon¹,*
Materials science and Engineering, Ulsan National Institute of Science and Technology, Korea
¹ Division of Advanced Materials Engineering, Ulsan National Institute of Science and Technology, Korea

09:36  POLY.O-4  Multi-Responsive Dynamic covalent Hydrazone Supramolecular Polymers

Kyung-su Kim, Changsik Song
Department of Chemistry, Sungkyunkwan University, Korea

09:48  POLY.O-5  Phase behavior and ion transport properties of acid-bearing block copolymer containing ionic liquids

Ha Young Jung, Moon Jeong Park¹,*
Chemistry, Pohang University of Science and Technology, Korea
¹ Department of Chemistry, Pohang University of Science and Technology, Korea

10:00  POLY.O-6  Structural Modification of Sulfur-based Polymer for Broad Application

Jaeil Park, Myung-Han Yoon
Division of Advanced Materials Engineering, Gwangju Institute of Science and Technology, Korea

10:12  POLY.O-7  Formation of uniform one-dimensional- and two-dimensional-
nanostructures from fluorescent semiconducting polymers with orthorhombic crystalline orientation

**Sanghee Yang**, Tae-Lim Choi¹,*

Chemistry, Seoul National University, Korea
¹Division of Chemistry, Seoul National University, Korea

**POLY.O-8**  Polymer Aggregation Control of NDI-Based Conjugated Polymer with Improved Electrical Connection through Backbone Fluorination

**Seung Un Ryu**, Yelim Choi, Taehyun Kim, Dohyun Kim¹, Taiho Park²,*

Pohang University of Science and Technology, Korea
¹Chemical engineering, Pohang University of Science and Technology, Korea
²Department of Chemical Engineering, Pohang University of Science and Technology, Korea

**POLY.O-9**  Sulfonated mesoporous membrane with high ion permselectivity for vanadium redox flow batteries

**Choongseop Jeon**, Myungun Seo¹,*

Graduate School of Nanoscience and Technology, Korea Advanced Institute of Science and Technology, Korea
¹Graduate School of Nano Science Technology, Korea Advanced Institute of Science and Technology, Korea

**POLY.O-10**  Helicity control of achiral bisporphyrin-based supramolecular polymer through chiral-auxiliary approach

**Hosooowi Lee**, Woo-Dong Jang

Department of Chemistry, Yonsei University, Korea

**POLY.O-11**  Generation of luminescent silver nanodots in the presence of amino silane and sodium polyacrylate

Sungmoon Choi, **Yanlu Zhao**, Junhua Yu

Department of Chemical Education, Seoul National University, Korea
33. Oral Presentation of Young Inorganic Chemists

Organizer: Minyoung Yoon (Gachon University)

Chair: Minyoung Yoon (Gachon University)

09:00  INOR.O-1  Synthesis of Iridium (III) complexes including bis-NHC ligands: applying to amine to alcohol conversion

Yeon Joo Cheong, Hye-Young Jang1
Department of Energy System Research, Ajou University, Korea
1Department of Chemistry, Ajou University, Korea

09:10  INOR.O-2  Rational Design and Construction of Hierarchical Superstructures Using Shape-persistent Organic Cages: Porphyrin Box-based Metallosupramolecular Assemblies

Younghoon Kim, Jaehyoung Koo, In-Chul Hwang1, Rahul Dev Mukhopadhyay1, Kimoon Kim
Department of Chemistry, Pohang University of Science and Technology, Korea
1Center for Self-assembly and Complexity (CSC), Institute for Basic Science (IBS), Korea

09:20  INOR.O-3  Chemical Strategies to Modify Amyloidogenic Peptides by Iridium(III) Complexes: Coordination and Photo-Induced Oxidation

Juhye Kang, Jung Seung Nam, Tae-Hyuk Kwon1, Mi Hee Lim2,*
Department of Chemistry, Ulsan National Institute of Science and Technology, Korea
1Eco-Friendly Energy Engineering, Ulsan National Institute of Science and Technology, Korea
2Department of Chemistry, Korea Advanced Institute of Science and Technology, Korea

09:30  INOR.O-4  Toward Deep Blue Electrophosphorescence from Cyclometalated Pt(II) Complexes

Yu Kyung Moon, Youngmin You, Kim Jang-Joo1,*
Division of Chemical Advanced Materials, Ewha Womans University, Korea
1Division of Material Engineering, Seoul National University, Korea

09:40  INOR.O-5  A New Class of Bifunctional One–component Catalysts for the Synthesis of Cyclic Carbonates

Yoseph Kim, Seol Ryu1, Youngjo Kim
Department of Chemistry, Chungbuk National University, Korea
1Department of Chemistry, Chosun University, Korea

09:50  INOR.O-6  Crystallization of Organic Molecules by a modified Drop-drying Method Using Binary Solvent Core-shell Droplet

Yoolim Ahn, Yohwan Park, Jinyoung Koo, Hee Cheul Choi
10:00 INOR.O-7 Building Principles of Meta-MOF (Metal-Organic Framework)
Eunji Jin, Dongwook Kim\textsuperscript{1}, Hosoowi Lee\textsuperscript{2}, Woo-Dong Jang\textsuperscript{3}, Myoung Soo Lah, Seung Kyu Min, Wonyoung Choe
Department of Chemistry, Ulsan National Institute of Science and Technology, Korea
\textsuperscript{1}Center for Catalytic Hydrocarbon Functionalization, Institute for Basic Science, Korea
\textsuperscript{2}Department of Chemistry, College of Science, Korea
\textsuperscript{3}Department of Chemistry, Yonsei University, Korea

10:10 INOR.O-8 Structure-Thermopower Relationships Achieved with Large-Area Thermoelectric Molecular Junctions
Sohyun Park, Hyo Jae Yoon
Department of Chemistry, Korea University, Korea

10:20 INOR.O-9 Zintl Phase Thermoelectric Material with the $n$-type dopant: Ca$_{5-x-y}$Yb$_x$RE$_y$Al$_2$Sb$_6$
Seungeun Shin, Tae-Soo You
Department of Chemistry, Chungbuk National University, Korea

10:30 INOR.O-10 Potential applications of imidazolium-based Metal-Organic Frameworks
Jaechul Lee, Chong Yang Chuah\textsuperscript{1}, Kimoon Kim, Minyoung Yoon\textsuperscript{2,}\textsuperscript{*}, Daewoon Lim\textsuperscript{3,}\textsuperscript{*}, Tae-Hyun Bae\textsuperscript{1}, Eunsung Lee
Department of Chemistry, Pohang University of Science and Technology, Korea
\textsuperscript{1}School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore
\textsuperscript{2}Department of Nano Chemistry, Gachon University Global Campus, Korea
\textsuperscript{3}Department of Chemistry, Kyoto University, Japan

10:40 INOR.O-11 3d-transition metal doped Ir-based octahedral nanocages as efficient electrocatalysts for the oxygen evolution reaction
Taehyun Kwon, Minki Jun, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

10:50 INOR.O-12 Structure and Reactivity of a Mononuclear Nonheme Manganese(III)-Iodosylarene Complex
Donghyun Jeong, Jaeheung Cho
Emerging Materials Science, DGIST, Korea

11:00 INOR.O-13 Metal Effect with Regioisomeric Controls of Ligands on Metal-Organic Frameworks
Hyeon Bin Ha, Dopil Kim, Min Kim
Department of Chemistry, Chungbuk National University, Korea
<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
</table>
| 09:00 | PHYS1.O-1 | A simple and accessible microscopic magnetic field mapping techniques using exciplex-based magnetosensing fluorophore: One- and Two-photon excitation | Dongkyum Kim, Hohjai Lee<sup>1,*</sup>  
Department of Chemistry, Gwangju Institute of Science and Technology, Korea  
<sup>1</sup>Chemistry, Gwangju Institute of Science and Technology, Korea |
| 09:10 | PHYS1.O-2 | Ultrafast Solvent-Coupled Charge Transfer in N-annulated Complex with Donor-Acceptor Conjugation | Changwon Kim, Tae Wu Kim<sup>1</sup>, Chen Li<sup>2</sup>, Hyotcherl Ihee  
Department of Chemistry, Korea Advanced Institute of Science and Technology, Korea  
<sup>1</sup>Chemical Sciences and Engineering, Argonne National Laboratory, United States  
<sup>2</sup>Polymer Research, Max Planck Institute, Germany |
| 09:20 | PHYS1.O-3 | Twist-angle dependent optical second-harmonic generation from transition metal dichalcogenides (TMD) heterostructures | Wontaek Kim, Sunmin Ryu  
Department of Chemistry, Pohang University of Science and Technology, Korea |
Department of Chemistry, Seoul National University, Korea |
| 09:40 | PHYS1.O-5 | Understanding gas behavior in local pores of Metal-Organic Frameworks by gas adsorption crystallography | Hae Sung Cho, Osamu Terasaki  
School of Physical Science and Technology, ShanghaiTech University, China |
| 09:50 | PHYS1.O-6 | Optically active vibrational sum-frequency generation spectroscopy of chiral molecule in isotropic liquid | Taegon Lee, Sanghee Nah, Jun-taek Oh<sup>1</sup>, Hanju Rhee  
Seoul Center, Korea Basic Science Institute, Korea  
<sup>1</sup>Korea Basic Science Institute, Korea |
35. Oral Presentation for Young Physical Chemists II

Organizer: Ilsun Yoon (Chungnam National University)

Chair: Ilsun Yoon (Chungnam National University)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
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</thead>
<tbody>
<tr>
<td>10:00</td>
<td>PHYS2.O-1</td>
<td>Fe-oxide nanoparticles/SiO2 as a regenerative organic dye adsorbent</td>
<td>Hyun Ook Seo*, Young Dok Kim¹*</td>
<td>Department of Chemical and Energy Engineering, Sangmyung University, Korea</td>
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<td>¹Department of Chemistry, Sungkyunkwan University, Korea</td>
</tr>
<tr>
<td>10:10</td>
<td>PHYS2.O-2</td>
<td>Accelerating hybrid density functional calculation in real-space numerical grid methods</td>
<td>Jaewook Kim, Woo youn Kim</td>
<td>Department of Chemistry, Korea Advanced Institute of Science and Technology, Korea</td>
</tr>
<tr>
<td>10:20</td>
<td>PHYS2.O-3</td>
<td>Density Sensitivity Analysis of DFT: Measurement and Practical Solution</td>
<td>Suhwan Song, Eunji Sim</td>
<td>Department of Chemistry, Yonsei University, Korea</td>
</tr>
<tr>
<td>10:30</td>
<td>PHYS2.O-4</td>
<td>Eliminating spin-contamination of spin-flip time dependent density functional theory within linear response formalism by the use of zeroth-order mixed-reference (MR) reduced density matrix</td>
<td>Seunghoon Lee, Sangyoub Lee, Cheol Ho Choi¹*</td>
<td>Division of Chemistry, Seoul National University, Korea</td>
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<td>¹Department of Chemistry, Kyungpook National University, Korea</td>
</tr>
<tr>
<td>10:40</td>
<td>PHYS2.O-5</td>
<td>Non-equilibrium Conformation of a Polymer Chain during Packaging and its Effect on the Packaging Rate</td>
<td>Seulki Kwon, Bong June Sung</td>
<td>Department of Chemistry, Sogang University, Korea</td>
</tr>
<tr>
<td>10:50</td>
<td>PHYS2.O-6</td>
<td>Theoretical Studies on the Li-ion Conductivity of Solid-State Electrolytes: Li_{6-x}PS_{5-x}Cl_{1+x}</td>
<td>Byeongsun Jun, Sang Uck Lee</td>
<td>Department of Bionano Engineering, Hanyang University, Korea</td>
</tr>
</tbody>
</table>
36. Oral Presentation of Young Analytical Chemists I

Organizer: Jae-Min Lim (Changwon National University)

Chair: Jae-Min Lim (Changwon National University)

09:00 ANAL1.O-1 Investigating the deteriorated drug efficiency of cisplatin induced by DMSO using ICP-MS
Gyeongseo Min, Paul Valery Migisha Ntwali, Jong Yoon Han, Chae Eun Heo, Sooyeon Chae, Min Ji Kim, MyungKook Son, Chae Ri Park, Chaehyeon Yoon, Dongjoon Im, Hugh I. Kim
Department of Chemistry, Korea University, Korea

09:04 ANAL1.O-2 Prediction of chromatographic elution order of analytes from quantitative structure retention time relationship via quadratic programming
Alham Alipuly, Petar Žuvela, J. Jay Liu
Chemical engineering, Pukyong National University, Korea
Chemistry, National University of Singapore, Singapore

09:08 ANAL1.O-3 Absolute Quantitation of Non-Human Glycan (Neu5Gc) in Human Biopsy Tissue by LC/MRM-MS
Nari Seo, Myung Jin Oh, Hyun Joo An
Graduate School of Analytical Science and Technology, Chungnam National University, Korea

09:12 ANAL1.O-4 Proteomics Approach for Plasma Exosomes in Lung Cancer Patients
Jihoon Shin, Jinwook Lee, Min-gyu Youn, Miseon Jeong, Junghoon Kang, Wonryeon Cho
Department of Chemistry, Wonkwang University, Korea
Department of Bio-nanochemistry, Wonkwang University, Korea

09:16 ANAL1.O-5 A new approach for size determination of nanoparticles by single particle inductively coupled plasma-mass spectrometry (sp-ICP-MS)
Yeon Hee Park, Heung Bin Lim
Department of Chemistry, Dankook University, Korea

09:20 ANAL1.O-6 A resistance study of serum-starvated neuroblatoma cell at specific drug concentration
Sooyeon Chae, Jong Yoon Han, Chae Eun Heo, Min Gyeongseo, MyungKook Son, Min Ji Kim, Hugh I. Kim, Chae Ri Park, Dongjoon Im, Chaehyeon Yoon, Hugh I. Kim
Department of Chemistry, Korea University, Korea

09:24 ANAL1.O-7 Single Bubble Microextraction Coupled with Capillary Electrophoresis
Xamyo Noulorsaytour, Doo Soo Chung
Chemistry, Seoul National University, Laos
09:28 ANAL1.O-8 Charge effect of ATP on changing self-assembly mechanism of amyloidogenic proteins
Chae Eun Heo, Jong Yoon Han, Sooyeon Chae, Chae Ri Park, MyungKook Son, Min Ji Kim, Dongjoon Im, Paul Valery Migisha Ntwali, Gyeongseo Min, Chaehyeon Yoon, Hugh I. Kim
Department of Chemistry, Korea University, Korea

09:32 ANAL1.O-9 Profiling of lipoproteins from post-menopausal patients with osteoporosis by asymmetrical flow field-flow fractionation and nUHPLC-ESI-MS/MS
Kang Geun Lee, Joon Seon Yang, Myeong Hee Moon
Department of Chemistry, Yonsei University, Korea
1 The Resource Center for Stable Isotope-Resolved Metabolomics, University of Kentucky, United States

09:36 ANAL1.O-10 Chemiluminescent probes-based paper strips for detection of influenza
Jinsol Han, Sharipov Mirkomil, Yong-ill Lee
Chemistry, Changwon National University, Korea
1 Department of Chemistry, Changwon National University, Korea

09:40 ANAL1.O-11 Oligomerization of tau protein mediated by electrostatic interaction with ATP
Jong yoon Han, Chae Eun Heo, MyungKook Son, Dongjoon Im, Gyeongseo Min, Sooyeon Chae, Chae Ri Park, Min Ji Kim, Paul Valery Migisha Ntwali, Hugh I. Kim
Department of Chemistry, Korea University, Korea

09:44 ANAL1.O-12 Automated cold volume calibration of temperature variation in cryogenic hydrogen isotope sorption isotherm
Jaewoo Park, Minji Jung, Hyunchul Oh
Department of Energy Engineering, Gyeongnam National University of Science and Technology, Korea
1 Department of Energy Engineering, Gyeongnam National University of Science and Techn, Korea

09:48 ANAL1.O-13 Investigation of changes in serum lipid levels upon the partial hepatectomy of swine in relation to the post-hepatectomy liver failure using nanoflow UHPLC-ESI-MS/MS
HaeA Kim, JongCheol Lee, Myeong Hee Moon
Department of Chemistry, Yonsei University, Korea

09:52 ANAL1.O-14 Optimization of nanoflow ultrahigh performance liquid chromatography (nUHPLC) conditions for high-throughput and rapid lipid analysis by ESI-MS/MS
Gwang Bin Lee, Myeong Hee Moon
Department of Chemistry, Yonsei University, Korea

09:56 ANAL1.O-15 Effect of aging on lipidomic changes in mouse serum, kidney, and heart
Jung Yong Eum, JongCheol Lee, Myeong Hee Moon
Yonsei University, Korea
1 Department of Chemistry, Yonsei University, Korea

10:00 ANAL1.O-16 A study on the determination of inorganic arsenic by solid phase
Picogram detection of nitro-explosive compound using multiple emitting Polythiophenes-Coated CdTe QDs

Mohamed Ragab Elsayed Ali, Salah Mahmoud Tawfik Ahmed, Yong-ill Lee
Changwon National University, Egypt
1Department of Chemistry, Changwon National University, Korea

Graphene oxide as a peroxidase mimetic catalyst for detection of Cr(VI) ions

Nguyen Ngoc Nghia, Huy B.t, Yong-ill Lee
Changwon National University, Korea
1Department of Chemistry, Changwon National University, Korea

Nonionic alginate-coated upconversion nanoparticles functionalized with folic acid for selective NIR-imaging and pH-responsive drug delivery

Sharipov Mirkomil, Salah Mahmoud Tawfik Ahmed, Huy B.t, Yong-ill Lee
Department of Chemistry, Changwon National University, Korea

Gold nanostar-based SERS substrate for pesticide analysis

Hung Thai viet, Huy B.t, Yong-ill Lee
Changwon National University, Korea
1Department of Chemistry, Changwon National University, Korea

Novel zwitterionic fluorescent polythiophene sensor for E.coli. detection

Jimin Shim, Salah Mahmoud Tawfik Ahmed, Yong-ill Lee
Department of Chemistry, Changwon National University, Korea

Detection of C18-ceramide through a novel µPAD coupled with mass spectrometry

Shavkatjon Azizov, Sharipov Mirkomil, Salah Mahmoud Tawfik Ahmed, Huy B.t, Yong-ill Lee
Department of Chemistry, Changwon National University, Korea

Development of Novel Upconversion Nanoparticles Functionalized with Amphiphilic Polymers for detection of Alprenolol

Seung Ha Lee, Salah Mahmoud Tawfik Ahmed, Yong-ill Lee
Department of Chemistry, Changwon National University, Korea

Development of melamine specific bioreceptor using phage-display and their verification

ChanYeong Park, Seung Hoon Back, Tae Jung Park
Department of Chemistry, Chung-Ang University, Korea

Mechanism of trinitrophenol explosive detection with novel multiple emitting quantum dots coated with amphiphilic conjugated polythiophenes

Sarvar Kakhkhorov, Salah Mahmoud Tawfik Ahmed, Yong-ill Lee
Changwon National University, Uzbekistan
1Department of Chemistry, Changwon National University, Korea
Highly sensitive fluorescent sensor based on novel coordinated amphiphilic polythiophene nanohybrids for triacetone triperoxide explosive detection

Salah Mahmoud Tawfik Ahmed, Yong-ill Lee
Department of Chemistry, Changwon National University, Korea

Multi-element analysis of deciduous teeth by inductively coupled plasma mass spectrometry (ICP MS)
Youngjoo Kal, Sangwon Cha
Hankuk University of Foreign Studies, Korea
1Department of Chemistry, Hankuk University of Foreign Studies, Korea

Optimization of sample preparation methods for the multi-class chemical analysis of the deciduous teeth
Jun young Park, Sangwon Cha
Chemistry, Hankuk University of Foreign Studies, Korea
1Department of Chemistry, Hankuk University of Foreign Studies, Korea

High-throughput measurement of lipid turnover rates using 15T FT-ICR mass spectrometry
Byoungsook Goh, Tae-Young Kim
Department of Chemistry, Gwangju Institute of Science and Technology, Korea
1School of Earth Sciences and Environmental Engineering, Gwangju Institute of Science and Technology, Korea

Measurement of conversion yield of 7-dehydrocholesterol to previtamin D using liquid chromatography-mass spectrometry
Jin Young Park, Tae-Young Kim
School of Earth Sciences and Environmental Engineering, Gwangju Institute of Science and Technology, Korea
37. Oral Presentation of Young Analytical Chemists II

Organizer : Jongwoo Lim (Seoul National University)

Chair : Jongwoo Lim (Seoul National University)

09:00  ANAL2.O-1  Electrochemical Immunosensor using Nanotriplex of Graphene Quantum Dots, Fe3O4, and Ag Nanoparticles for Tuberculosis
        Lemma Teshome Tufa, Jaebeom Lee1,*
        Nano Fusion Technology, Ph.D student at Pusan National University, Ethiopia
        1 Chemistry, Chungnam National University, Korea

09:04  ANAL2.O-2  Optical analysis of degree of deacetylation in chitosan
        Ki-Jae Jeong, Caifeng Wang, Jeonghyo Kim, Jaebeom Lee1,*
        Department of Cogno-Mechatronics Engineering, Pusan National University, Korea
        1 Chemistry, Chungnam National University, Korea

09:08  ANAL2.O-3  Tuning plasmonic properties of 0-3D metastructure with self-assembled magnetoplasmmonic nanoparticles
        Dong-kyu Lee, Ki-Jae Jeong, Van Tan Tran 1, Jaebeom Lee2,*
        Department of Cogno-Mechatronics Engineering, Pusan National University, Korea
        1 Nano-Convergence Technology, Pusan National University, Korea
        2 Chemistry, Chungnam National University, Korea

09:12  ANAL2.O-4  An Synthetic Approach to Si/doped-Graphene Quantum Dots Nano-Architecture as anode for Li secondary batteries
        Hasan Jamal, Jin-Yeong Choi, Chang-Seop Lee
        Department of Chemistry, Keimyung University, Korea

09:16  ANAL2.O-5  Characteristics and Electrochemical Performance of Graphene/Carbon nanofiber/Silicon Composites as Anode Material for Binder-Free Lithium Secondary Batteries
        Ruye Cong, Jin-Yeong Choi, Chang-Seop Lee
        Department of Chemistry, Keimyung University, Korea

09:20  ANAL2.O-6  Synthesis, dispersion and tribological performance of alkyl functionalized graphene oxide and graphene-WS2 Composites as an oil lubricant additive
        Jong Seek Han, Jin-Yeong Choi, Chang-Seop Lee
        Department of Chemistry, Keimyung University, Korea

09:24  ANAL2.O-7  Combined Anion and Nonionic Surfactants-based Micellar Electrokinetic Chromatography with Laser-induced Fluorescence Detection for Quantification of Native Capsaicinoids
        Yucheng Sun, Seong Ho Kang1,*
        Department of Chemistry, Kyung Hee University, Korea
Yingying Cao, Jongyeon Yoon1, Seong Ho Kang1
Chemistry, Kyung Hee University, Korea
1Department of Applied Chemistry, Kyung Hee University, Korea

09:32 ANAL2.O-9 Feasibility of electrochemically modulated SERS measurement for improved differentiation of gallbladder diseases
Tung Vu, Eunjin Jang1, Hoeil Chung
Department of Chemistry, Hanyang University, Korea
1Chemistry, Hanyang University, Korea

09:36 ANAL2.O-10 Spatially offset based Raman scattering-based line-mapping as means to determine sample particle size
Sang hoon Cho, Hoeil Chung1,1
Chemistry, Hanyang University, Korea
1Department of Chemistry, Hanyang University, Korea

09:40 ANAL2.O-11 Infrared spectroscopic characterization of bile juices acquired from patients with gallbladder diseases
Eunjin Jang, Hoeil Chung1,1
Chemistry, Hanyang University, Korea
1Department of Chemistry, Hanyang University, Korea

09:44 ANAL2.O-12 Electrochemical study of fluorine doped lithium vanadium borate as a cathode material for lithium ion battery
Youngil Lee1, Inyoung Lee1
Department of Chemistry, University of Ulsan, Korea
1Chemistry, University of Ulsan, Korea

09:48 ANAL2.O-13 Various Muti-Facet Gold Bipyramid Fabrication
Dong Hwan Nam, Seunghyun Lee1,2
nanochemistry, Gachon University, Korea
1Department of Nanochemistry, Gachon University, Korea

09:52 ANAL2.O-14 Enhanced electrochemical performance of LiFeBO3 cathode material via anion doped for lithium ion battery
Khoirul Umam, Youngil Lee
Department of Chemistry, University of Ulsan, Indonesia

09:56 ANAL2.O-15 Preparation of lithium iron pyrophosphate as cathode material for lithium ion battery
Chaewon Moon, Youngil Lee
Department of Chemistry, University of Ulsan, Korea

10:00 ANAL2.O-16 HPLC-UV Determination of Resveratrol, Oxyresveratrol and Piceatannol from Wine
Jongsung Noh, JinSol Lee, Won Hoe Koo, Hyun-Woo Cho1, Seung Woon Myung
Department of Chemistry, Kyonggi University, Korea
1Department of Natural Science Chemistry, Kyonggi University, Korea

10:04 ANAL2.O-17 Facile method to fabricate viscoelastic nanocomposites based on supramolecular gels and boron nitride nanotubes via one-pot melt-blending
**ANAL2.O-18** Metabolic profiling of plasma and urine from a randomized trial on the effects of dietary patterns.

**Seunghyun Lee**
Department of Nanochemistry, Gachon University, Korea

**ANAL2.O-19** Metabolomic analysis of human blood associated with ambient particulate matter in air pollution

**Geum-Sook Hwang**
Integrated Metabolomics Research Group, Western Seoul Center, Korea Basic Science Institute, Korea

**ANAL2.O-20** Highly sensitive molecular diagnostics using SERS-PCR for Bacillus anthracis detection

**Younju Joung**
Department of Chemistry, Chung-Ang University, Korea

**ANAL2.O-21** Fabrication of PEGylated Au@Ag core-shell nanoparticles for SERS imaging of multiple biomarkers expressed on cancer cells

**Namhyun Choi**
Department of Bionano Technology, Hanyang University, Korea

**ANAL2.O-22** SERS-based microdroplet system for high-throughput gradient analysis

**Jinhyeok Jeon**
Department of Bionano Technology, Hanyang University, Korea

**ANAL2.O-23** NMR structural studies of mutations in transmembrane proteins related with human diseases

**Soyeon Jo**
Chemistry, Hankuk University of Foreign Studies, Korea

**ANAL2.O-24** Advanced studies of antibiotic peptides using solid-state NMR

**Jinyoung Son**
Department of Chemistry, Hankuk University of Foreign Studies, Korea

**ANAL2.O-25** N-Doped Carbon Dots for Dual Mode Detection with Large Dynamic Range in analysis of Ag+ Ion

**Kim Shinik**
Department of Chemistry, Soongsil University, Korea

**ANAL2.O-26** Polarization- and Wavelength-Dependent Defocused Scattering Imaging of Single Gold Nanostars with Multiple Long Branches

**Geunwan Kim**
Department of Chemistry, University of Ulsan, Korea

**ANAL2.O-27** Accurate measurement of total arsenic by considering arsenic species
Sang-Ho Nam*, DongChan Lee, Ngo Van Tho
Department of Chemistry, Mokpo National University, Korea

10:48 ANAL2.O-28 Influence of the Capping Material on Chemical Interface Damping Induced by Pyridine with Nitrogen in Single Gold Nanorods
Kyeong Rim Ryu, Ji Won Ha1,*
Chemistry, University of Ulsan, Korea
1Department of Chemistry, University of Ulsan, Korea

10:52 ANAL2.O-29 Shape Effect on the Refractive Index Sensitivity of Localized Surface Plasmon Resonance Inflection Points in Single Gold Nanocubes with Vertices
Ji Won Ha*, Hui Bin Jeon
Department of Chemistry, University of Ulsan, Korea

10:56 ANAL2.O-30 Metal Dopants Effect on the electronic structures of M2Au36(SR)24(M=Pt, Pd)
Minseok Kim, Dongil Lee
Department of Chemistry, Yonsei University, Korea
38. Oral Presentation of Young Life Chemist

Chair: Hyun Soo Lee (Sogang University)

09:00  LIFE.O-1  Nitric Oxide-Scavenging Nanogel for Treating Rheumatoid Arthritis

Jiwon Yeo, Junseok Lee¹, Won jong Kim²,*
Chemistry, Pohang University of Science and Technology, Korea
¹Pohang University of Science and Technology, Korea
²Department of Chemistry, Pohang University of Science and Technology, Korea

09:15  LIFE.O-2  Development and Application of Fluorescent Nucleoside Analogues

Shingo Hirashima, Ji Hoon Han, Soyoung Park, Hiroshi Sugiyama
Chemistry, Kyoto University, Japan

09:30  LIFE.O-3  Structural basis for low catalytic activities in the two minor β-carbonic anhydrases from the filamentous fungi Aspergillus fumigatus

Songwon Kim, Mi Sun Jin¹,*
School of Life Sciences, Gwangju Institute of Science and Technology, Korea
¹Division of Life Science, Gwangju Institute of Science and Technology, Korea

09:45  LIFE.O-4  Activity of glycoengineered β-N-Acetylhexosaminidases with multiple mannose-6-phosphates in lysosomes

Hyun Jyyoung, Injae Shin
Department of Chemistry, Yonsei University, Korea

10:00  LIFE.O-5  Genetic incorporation of L-DOPA biosynthesized by a tyrosine phenol-lyase

Sangkil Kim, Hyunsoo Lee
Department of Chemistry, Sogang University, Korea

10:15  LIFE.O-6  Forward Chemical Genetics Identified A Small-Molecule That Selectively Kill Leukemia Cells

Soobin Lee, Hyun-Suk Lim
Department of Chemistry, Pohang University of Science and Technology, Korea

10:30  LIFE.O-7  Research for structural characteristic change of α/β peptide oligomers containing cis-APIC

Sunglim Choi, Soo Hyuk Choi
Department of Chemistry, Yonsei University, Korea

10:45  LIFE.O-8  Seeing DNA Sequences: Fluorescent Polypyrrole for A/T Sequence Visualization on Single DNA Molecules

Seonghyun Lee, Kyubong Jo
Department of Chemistry, Sogang University, Korea
Organic Chemistry Oral Presentation
April 18 (Thu), Room 301+302

39. Oral Presentations for Young Scholars in Organic Division
Organizer : Jun Hee Lee (Dongguk University)

Chair : Jun Hee Lee (Dongguk University)

09:00 ORGN.O-1 Visible Light-induced Photoredox-catalyzed Regioselective allylation of Activated Alkenes
Arjun Gontala*, Sang Kook Woo1,*
Department Of Chemistry, University Of Ulsan, Korea
1Department of Chemistry, University of Ulsan, Korea

09:15 ORGN.O-2 Total Syntheses of (+)-Uleine and (-)-Tubifolidine via Kinetically Controlled Fischer Indole Synthesis
Dong-Hyun Kim, Cheon-Gyu Cho
Department of Chemistry, Hanyang University, Korea

09:30 ORGN.O-3 Memory of Chirality approach to the asymmetric total synthesis of Salinosporamide B
Soojun Park, Sanghee Kim1,*
College of Pharmacy, Seoul National University, Korea
1College of Pharmacy / Department of Pharmacy, Seoul National University, Korea

09:45 ORGN.O-4 Development of novel carbapenem-based fluorogenic probe for specific detection of carbapenemase-expressing bacteria
Juhyeon Kim, Hyunah Choo1, Hak Joong Kim, Sun-Joon Min2,*
Department of Chemistry, Korea University, Korea
1center for Neuro-medicine, Korea Institute of Science and Technology, Korea
2Dept of Chemical & Molecular Eng/Applied Chemistry, Hanyang University, Korea

10:00 ORGN.O-5 A New Approach to Polarity Probe for Quantitative Intracellular Imaging
Sang Jun Park, Hwan Myung Kim
Department of Energy Systems Research, Ajou University, Korea

10:15 ORGN.O-6 Development of Far-red/NIR Emitting, Two-Photon Absorbing Amino-Si-Pyronin Dyes
Kyeong Hwan Kim, Kyo Han Ahn
Department of Chemistry, Pohang University of Science and Technology, Korea

10:30 ORGN.O-7 Synthesis of functional brush polymers by post-polymerization modification: transesterification approach
Lee Nam joo, Jeung Gon Kim1,*
Department of Chemistry, Chonbuk National University, Korea
1Department of Chemistry, Chonbuk National University, Korea

10:45 ORGN.O-8 Selectivity among Carbon-Carbon Multiple Bonds in Palladium-Catalysed Hydroamination
Jihong Lee, Jeong-Hun Sohn
Department of Chemistry, Chungnam National University, Korea
**40. Oral Presentation of Young Discovery Chemists**

**Organizer : Ki Duk Park (KIST)**

**Chair : Sang Min Lim (KIST)**

- **09:00** MEDI.O-1  
  Discovery of Potent, Selective, and Orally Bioavailable Estrogen-Related Receptor-γ Inverse Agonists  
  **Jina Kim**, Jungwook Chin, Sung Jin Cho  
  *New Drug Development Center, Daegu Gyeongbuk Medical Innovation Foundation, Korea*

- **09:15** MEDI.O-2  
  Highly efficient protein corona shield system of clocking nanoparticles for targeted drug delivery  
  **Jun Yong Oh**, Ja-Hyoung Ryu1,∗  
  *Department of Chemistry / Department of Chemical E, Ulsan National Institute of Science and Technology, Korea*  
  1*Department of Chemistry, Ulsan National Institute of Science and Technology, Korea*

- **09:30** MEDI.O-3  
  Design, Synthesis and Optimization of Novel Class of Nrf2 Activator as a Neuroprotective Agent for Treatment of Parkinson’s disease  
  **Ji Won Choi**, Siwon Kim, Jong-Hyun Park, Hyeon Jeong Kim, Hyeon Ji Kim, Boko Jang, Sun Jun Park, Jong Seok Yoo, Areum Song, Ki Duk Park  
  *Convergence Research Center for Dementia, Korea Institute of Science and Technology, Korea*

- **09:45** MEDI.O-4  
  Novel tau aggregation inhibitors for treatment of Alzheimer’s Disease  
  **WooSeung Son**, Sang Min Lim1, Kyu-Sung Jeong, Ae Nim Pae1  
  *Department of Chemistry, Yonsei University, Korea*  
  1*Convergence Research Center For Diagnosis, Treatment and Care System of Dementia, Korea Institute of Science and Technology, Korea*

- **10:00** MEDI.O-5  
  Synthesis and bioevaluation of a Novel TSPO-selective PET ligand ([18F]BS224) in Animal Models of Neuroinflammation and Stroke  
  **Sang Hee Lee**, Jungmin Kim1, Byung Chul Lee2,∗  
  *Department of Transdisciplinary Studies, Graduate School of Convergence Science and Technology, Seoul National University, Suwon / Department of Nuclear Medicine, Seoul National University College of Medicine, Seoul National University Bundang Hospital, Korea*  
  1*Department of Nuclear Medicine, Seoul National University College of Medicine, Seoul National University Bundang Hospital, Korea*  
  2*Department of Nuclear Medicine, Seoul National University College of Medicine, Seoul National University Bundang Hospital, Seongnam / Center for Nanomolecular Imaging and Innovative Drug Development, Advanced Institutes of Convergence*
10:15 **MEDI.O-6**  Identification of a novel cereblon modulator and its application for PROTAC-based BET degraders
Yeong Uk Jeon, AhRa Go¹, Jae du Ha², Pilho Kim¹, Jong Yeon Hwang¹, Sung Yun Cho²
pharmacy, Sungkyunkwan University, Korea
¹ Center for Medicinal Chemistry, Korea Research Institute of Chemical Technology, Korea
² WCI, Korea Research Institute of Chemical Technology, Korea

10:30 **MEDI.O-7**  Identification of novel SHIP2 Inhibitors for the Treatment of Alzheimer’s Disease
Jiwoong Lim, Ae Nim Pae¹*, Sang Min Lim¹, Jae Yeol Lee², Jae Wook Lee³
Convergence Research Center for Diagnosis, Treatment, Korea Institute of Science and Technology, Korea
¹ Korea Institute of Science and Technology, Korea
² Department of Chemistry, Kyung Hee University, Korea
³ Convergence Research Center for Dementia DTC, Korea Institute of Science and Technology, Korea

10:45 **MEDI.O-8**  Synthesis and recent updates on thiazole containing selective agonists of peroxisome proliferator-activated receptor δ
Tara Man Kadayat, Su-Jeong Lee, Sung Jin Cho, Jungwook Chin
New Drug Development Center, Daegu-Gyeongbuk Medical Innovation Foundation, Korea
41. Oral Presentation of Young Material Chemists

Organizer: Doo-Hyun Ko (Kyung Hee University)

Chair: Kwang Seob Jeong (Korea University)

09:00 MAT.O-1 Plasmonic nanogap engineering with DNA for biomedical application
Jeong-Wook Oh, Jwa-Min Nam
Department of Chemistry, Seoul National University, Korea

09:12 MAT.O-2 Iridium(III) Complexes for Deep-Red to Near-Infrared Phosphorescent Solution-Processable Organic Light-Emitting Diodes
Hae Un Kim, Seyeong Lim, Dohyun Kim, Dasol Chung, Jihyun Min, Taiho Park
Department of Chemical Engineering, Pohang University of Science and Technology, Korea

09:24 MAT.O-3 Novel Strategies on Preparing Ultrabright Luminescent Gold Nanoclusters via Surface Modification
Kyunglim Pyo, SangMyeong Han, Hongmei Xu, Dongil Lee
Department of Chemistry, Yonsei University, Korea

09:36 MAT.O-4 Microwave absorption enhancement via BaTiO3 particles with oxygen vacancies.
Jerome Hyun, Baek Kyungnae
Chemistry Department of Nano-Science, Ewha Womans University, Korea

09:48 MAT.O-5 Direct Sensing from Self-Doped Colloidal Quantum Dots Thin-Film Transistor
Dongsun Choi, Kwang Seob Jeong
Department of Chemistry, Korea University, Korea

10:00 MAT.O-6 Ligand Effects of β-PdH Nanocatalysts towards the Liquid Fuel Oxidation Reaction
Jeonghyeon Kim, Sang-II Choi
Kyungpook National University, Korea

10:12 MAT.O-7 Phographene Nanosheet for High-Performance Lithium-Ion Battery Anode Applications
Siby Thomas, Sang Uck Lee
Department of Bio-Nano Engineering, Hanyang University, Ansan, Korea
MAT.O-8  Conducting Polymer Decorated Hierarchical Earth-Abundant Material as Efficient Bifunctional Electrocatalyst for Overall Water Splitting
**Samiran Garain**, Min Hyung Lee

Chemistry, Kyung Hee University, India

1 Department of Applied Chemistry, Kyung Hee University, Korea

**Soo jin Cho**, Gyu Don Kong, Sohyun Park, Hyo Jae Yoon

Department of Chemistry, Korea University, Korea

MAT.O-10 Remotely Operable and Highly Functional Plasmonically-Integrated Nanoreactors (PINERs) for NIR-Light-Induced Bioorthogonal Catalysis in Living Cells
**Amit Kumar**, In Su Lee

Chemistry, Pohang University of Science and Technology, Korea

1 Department of Chemistry, Pohang University of Science and Technology, Korea
Electrochemistry Oral Presentation
April 18 (Thu), Room 407+408

42. Oral Presentation of Young Scholars in Electrochemistry

Organizer: Inho Nam (Chung-Ang University)

Chair: Jinho Chang (Hanyang University)

09:00 ELEC.O-1 Utilization of photosynthetic organisms as photo-biocatalysts for solar energy conversion to electricity

Jinhwan Lee, Sunghyun Kim1*
Department of Biotechnology, Konkuk University, Korea
1Biotechnology, Konkuk University, Korea

09:10 ELEC.O-2 Composition-Dependent Electrocatalytic Activity of Cobalt Sulfides for Triiodide Reduction in Dye-Sensitized Solar Cells

Minsoo Kim, Jin Ho Bang
Department of Bionano Technology, Hanyang University, Korea

09:20 ELEC.O-3 Rechargeable aluminium organic batteries

Dong-Joo Yoo, Jang Wook Choi
School of Chemical and Biological Engineering, Seoul National University, Korea

09:30 ELEC.O-4 The electronic structure of IrNiOx electrocatalysts for oxygen evolution reaction in different pH electrolytic condition

Jaekyung Yi, Hyung-Suk Oh1*, Yun Jeong Hwang1
Division of Energy & Environment Technology, University of Science & Technology, Korea
1Clean Energy Research Center, Korea Institute of Science and Technology, Korea

09:40 ELEC.O-5 Electrochemical Detection and Electrolysis of Single Nanosized Water Droplet Collisions in Organic Solution

Jungeun Lee, Byung-Kwon Kim
Department of Chemistry, Sookmyung Women's University, Korea

09:50 ELEC.O-6 Unraveling the Controversy over the Catalytic Reaction Mechanism using a New Theoretical Methodology: One Probe and Non-Equilibrium Surface Green's Function

Chiho Lee, Sang Uck Lee
Department of Bio-Nano Engineering, Hanyang University, Korea

10:00 ELEC.O-7 A stand-alone electrocatalytic system combined arsenic oxidation and CO₂ reduction

Wonjung Choi, Hyunwoong Park
School of Energy Engineering, Kyungpook National University, Korea

10:10 ELEC.O-8 A Quantitative Method to Measure Corrosion Current on Zinc Metal
Electrodes

**Kiyoung Kwon**, Hyun Deog Yoo
*Department of Chemistry and Chemical Institute for Functional Materials, Pusan National University, Busan 46241, Korea*

10:20 **ELEC.O-9** Electrochemistry of Rationally Designed Metal Nanoclusters in Atomic Precision.

**Kyuju Kwak**, Dongil Lee
*Department of Chemistry, Yonsei University, Korea*

*Invited Lecture*

10:30 **ELEC.O-10** Degradation Mechanisms in Lithium-Ion Batteries with Layered Transition Metal Oxide Based Cathode Active Materials

A.T.S. Freiberg, **H.A. Gasteiger**, R. Jung, M. Metzger, S. Solchenbach, B. Strehle, T. Teufl, J. Wandt
*Technical Electrochemistry, Dept. of Chemistry and Catalysis Research Center, Germany*
43. New Trends in Chemistry Education

Organizer: Aeran Choi (Ewha Womans University)

Chair: Aeran Choi (Ewha Womans University)

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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenter(s)</th>
<th>Institution(s)</th>
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<tbody>
<tr>
<td>09:00</td>
<td>EDU.O-1</td>
<td>Analysis of experiments related to electrolysis of aqueous solution in chemistry textbooks of secondary schools</td>
<td>Seounghey Paik*, Kihyang Kim†</td>
<td>Department of Chemical Education, Korea National University of Education, Korea</td>
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<td>†Chemistry, Sejong Academy of Science and Art, Korea</td>
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<td>09:40</td>
<td>Break</td>
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<td>09:50</td>
<td>EDU.O-3</td>
<td>A Hands-on Experiment to Verify Consistency from Bulk Density to Atomic and Ionic Radii with Lumps of Metals and Ionic Compounds</td>
<td>Seong Kyun Kim*, Seounghey Paik†</td>
<td>School of Undergraduate Studies, Daegu Gyeongbuk Institute of Science &amp; Technology, Korea</td>
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<td>†Department of Chemical Education, Korea National University of Education, Korea</td>
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<td>10:10</td>
<td>EDU.O-4</td>
<td>Chemistry Experiment Class in High School</td>
<td>Jinho Oh</td>
<td>Chemistry &amp; Biology, Korea Science Academy of KAIST, Korea</td>
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Environmental Energy Oral Presentation
April 18 (Thu), Room 203

44. Student Oral Presentation

Organizer: Jaeyoung Lee (GIST)

Chair: Kiyoung Lee (Kyungpook National University)

09:00   ENVR.O-1  The Effects of Metal-doping and Surface Modification on Hydrogen Production Activity of Metal Nanoclusters
         Woojun Choi, Kyuju Kwak, Dongil Lee
         Department of Chemistry, Yonsei University, Korea

09:15   ENVR.O-2  Removal of aqueous Hg(II) using indium-modified bimetallic iron particles
         Qasim Ghulam Hussain, Seunghee Han¹,*
         Department of Environmental Engineering, Gwangju Institute of Science and Technology, Korea
         ¹School of Environmental Sciences and Engineering, Gwangju Institute of Science and Technology, Korea

09:30   ENVR.O-3  Sb speciation and distribution in soils near a Sb refining factory and a shooting range
         Soo-Chan Park, Man Jae Kwon¹,*
         Department of Earth and Environmental Sciences, Korea University, Korea
         ¹Korea University, Korea

09:45   ENVR.O-4  Mineral precipitates and microbial community compositions in groundwater from inside waste disposal site
         Bak Noon Ham, Man Jae Kwon¹,*
         Energy Environment Policy & Technology, KU-KIST Green School, Korea University, Korea
         ¹Earth and Environmental Sciences, Korea University, Korea

10:00   ENVR.O-5  Red mud induced photocatalysis in the presence of peroxides
         Joohyun Kim, Sungjun Bae
         Department of Environmental Engineering, Konkuk University, Korea

10:15   ENVR.O-6  Effect of natural organic matter on TiO₂ photocatalysis under visible light illumination via ligand-to-metal charge transfer (LMCT)
         Hyeonyeong Park, Wooyul Kim¹,* EunJu Kim
         Water Cycle Research Center, Korea Institute of Science and Technology, Korea
         ¹Department of Chemical and Biological Engineering, Sookmyung Women's University, Korea

10:30   ENVR.O-7  Phase dependent OH radical Generation Mechanism: Anatase vs. Rutile TiO₂
         Ji Young Hwang, Wooyul Kim¹,*
Mercury Isotope Investigation of Sources and Transport of Mercury in a Creek Impacted by Multiple Anthropogenic Activities

Saebom Jung, Sae Yun Kwon

Division of Environmental Science and Engineering, Pohang University of Science and Technology, Korea
POLY.P-1 Comparison of water absorption between PSMA ionomer and PSITA ionomer
Joon-Seop Kim*, Seokyoung Park¹, Yoon Gwan Jeong¹
Department of Polymer Science and Engineering, Chosun University, Korea
¹Department of Polymer Chemistry Engineering, Chosun University, Korea

POLY.P-2 Intrinsic and Extrinsic Encoding of Supramolecular Chirality
Jun Su Kang, Myungeun Seo
Department of Chemistry, Korea Advanced Institute of Science and Technology, Korea

POLY.P-3 Extremely Active MAO Free Chromium Catalyst For Ethylene Tetramerization
Hee soo Park¹, Bun Yeoul Lee¹⁺, Taejin Kim
Molecular science and Technology, Ajou University, Korea
¹Department of Molecular Science and Technology, Ajou University, Korea

POLY.P-4 Treatment of Peroxide Mediated C(sp3)-C(sp3) Coupling reaction: Synthesis of ABA-Type Olefin Triblock Copolymers
Hyunju Lee, Junwon Baek¹, Bun Yeoul Lee²⁺
Department of molecular science and technology, Ajou University, Korea
¹Ajou University, Korea
²Department of Molecular Science and Technology, Ajou University, Korea

POLY.P-5 Self-assembly of Chiral Amphiphilic Random Copolymer in Aqueous Media
Minjoong Shin, Myungeun Seo
Graduate School of Nano Science Technology, Korea Advanced Institute of Science and Technology, Korea

POLY.P-6 Double-Emulsion Nanoparticle Based on L-tyrosine Polyurethane with high bioavailability for Efficient Gene Delivery
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POLY.P-7 Biodegradable Double-Emulsion Polyfumarateurethane Nanoparticles Based on Aliphatic Ester groups for Sustained Release of Bupivacaine
Soo Yong Park, Ildoo Chung
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POLY.P-8 Visualization of Human Hairs; FT-IR and Confocal Microscopic Studies.
Daeyeon Cho, Soo Ryeon Ryu¹, Kwanwoo Shin
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POLY.P-9 Mechanical properties of bio-printed vascular system
Yeongheon Jung, Kwanwoo Shin
Department of Chemistry, Sogang University, Korea

POLY.P-10 Increasing Performance of Organic Field Effect Transistor by adjusting shearing force within eutectic system
SangWon Eom, Jiyun Jung, Youngjong Kang
Department of Chemistry, Hanyang University, Korea

POLY.P-11 Thermosensitive hydrogel as a 3D cell culture niche
Hanbyul Jang, Heeju Kim, Min Hee Park, Byeongmoon Jeong
Department of Chemistry and Nano Science, Ewha Womans University, Korea

POLY.P-12 pH dependence and EDTA treatment impact on catechol modified chitosan hydrogels
Quang Nguyen Ngoc, Daewon Sohn¹⁺
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¹Department of Chemistry, Hanyang University, Korea

POLY.P-13 Characteristics of PNIPAM hydrogels synthesized by y-ray irradiation
Oh Inwook, Daewon Sohn¹⁺
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POLY.P-14 Difference between anisotropic and isotropic particles in flow cytometry
Hoyeon Lee, Daewon Sohn¹⁺
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¹Department of Chemistry, Hanyang University, Korea

POLY.P-15 Noncovalently Conformational Locking in Indacenodithiophene-based A-D-A type Molecule and Its Application to High-performing Non-fullerene Polymer Solar Cells
Su Hong Park, Hyung Jong Kim, Cheol Hun Jeong, Nayeon Kwon, Ji Hye Lee, Min Ju Cho, Dong Hoon Choi
Department of Chemistry, Korea University, Korea

POLY.P-16 Random Conjugated Terpolymers for High-Efficient Non-Fullerene Polymer Solar Cells
Min Ju Cho, Su Hong Park, Nayeon Kwon¹, Youngun
Kim, Dong Hoon Choi
Department of Chemistry, Korea University, Korea

Diketopyrrolopyrrole-Based Conjugated Polymers bearing Branched Alkyl Ester-Labeled Side Chains and their Thin Film Transistors

Hyung Jong Kim, Su Hong Park, Cheol Hun Jeong, Nayeon Kwon, Ji Hye Lee, Min Ju Cho, Dong Hoon Choi
Department of Chemistry, Korea University, Korea

High-performing fullerene free polymer solar cell fabricated by a simple process using new conjugated terpolymers

Jihyun Kim, Youngun Kim, Jiwon Yoon, Chae Yeong Kim, Min Ju Cho, Dong Hoon Choi
Department of Chemistry, Korea University, Korea

Study on photophysical properties of new conjugated polymers bearing macromolecular donor and acceptor monomers.

Nayeon Kwon, Su Hong Park, Hyung Jong Kim, Cheol Hun Jeong, Ji Hye Lee, Min Ju Cho, Sungnam Park, Dong Hoon Choi
Department of Chemistry, Korea University, Korea

Solution Processed Multi-Layered Organic Light-Emitting Diodes by Using New Crosslinkable Hole Transport Polymer

Ji Hye Lee, Cheol Hun Jeong, Hyung Jong Kim, Su Hong Park, Nayeon Kwon, Min Ju Cho, Dong Hoon Choi
Department of Chemistry, Korea University, Korea

Single Component Active Layer Polymer Solar Cells with New Conjugated Copolymer Bearing Donor and Acceptor Blocks

Su Hong Park, Hyung Jong Kim, Cheol Hun Jeong, Nayeon Kwon, Ji Hye Lee, Min Ju Cho, Sungnam Park, Dong Hoon Choi
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White-Light-Emitting Polymer via Iridium-Catalyzed Direct C-H Amidation Polymerization: A Strategy Utilizing Excited-State Intramolecular Proton Transfer

Soon-Hyeok Hwang, Taeye-Lim Choi
Division of Chemistry, Seoul National University, Korea

Thermally Crosslinkable Hole Transport Polymer for Realizing High-Performing Thermally Activated Delayed Fluorescence OLEDs via Solution Processing

Cheol Hun Jeong, Jiwon Yoon, Hyung Jong Kim, Su Hong Park, Chae Yeong Kim, Nayeon Kwon, Ji Hye Lee, Min Ju Cho, Dong Hoon Choi

Polaron Dynamics of a Non-Fullerene Acceptor in Ternary Blend Organic Solar Cells

Dongki Lee, Kilwon Cho
Department of Chemical Engineering, Pohang University of Science and Technology, Korea

Synthesis and Properties of Piperidinium and Pyrrolidinium PEG copolymers

Hyun Ho Chae, Minjae Lee
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Synthesis and Properties of Pyrrolidinium Polyurethanes from Ionic-Liquid Monomers

JongChan Shin, Minjae Lee
Kunsan National University, Korea

Hyper-Cross-Linked Polymer with Enhanced Porosity by in situ Removal of Functional Groups

Jeonghyeon Lee, Myungyun Seo
Advanced Institute of Science and Technology, Korea

Co-oligomerizations of 2,5-Dibromo-1,1-diisopropyl(or dihexyl)-3,4-diphenyl-siloles with 4,4'- (Hexafluoroisopropylidene)diphenol or 4,4'-Biphenol and their Characterizations

Jong Wook Lim, Young Tae Park
Keimyung University, Korea

Transformation of Poly(4-vinylphenol)-b-Poly(vinyl alcohol) diblock copolymeric micelle in Mixed Solvent Systems

Taehyoung Kim, Sang Youl Kim
Department of Chemistry, Korea Advanced Institute of Science and Technology, Korea

Biocompatible Nitrogen Containing Aliphatic Polymer: Electron Transfer based Singlet Oxygen Generator for Photodynamic Therapy

Jung seung Nam, Chaiheon Lee, Byeong-Su Kim, Tae-Hyuk Kwon
Department of Chemistry, Ulsan National Institute of Science and Technology, Korea

Regioregular Wide Bandgap Copolymers Based on Thienoisquinolinoline and Thienoquinolinine for Efficient Non-Fullerene Organic Solar Cells
Preparation of Shape-controlled Porous Melamine-formaldehyde Polymers
Inah Kang, Young Rok Yoon, Sang Youl Kim
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Compartmentalized Bimetal Nanostructures for Photonics-based Bio-sensing
Eun Young Hwang, Dong Woo Lim
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Department of Bionano Engineering, Hanyang University, Korea

Organic-Inorganic Nanocomposites based on Self-assembled, Fusion Protein Nanostructures for Theragnosis
Min Jeong Kang, Aamna Basheer, Dong Woo Lim
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Department of Bionano Engineering, Hanyang University, Korea

Acorn-Shaped Bimetal Nanoparticle Clusters for Surface Enhanced Raman Scattering-based Biosensing
Jae Hee Lee, Eun Young Hwang, Dong Woo Lim
Department of Bionanotechnology, Hanyang University, Korea
Department of Bionano Engineering, Hanyang University, Korea

Photo-chemically Cross-linked Hydrogels of Elastin-Resilin Block Copolypeptides for Biomedical Applications
Aamna Basheer, Min Jeong Kang, Jae Hee Lee, Dong Woo Lim
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Department of Bionano Engineering, Hanyang University, Korea

Evaluation of Physical Properties of High Performance Ophthalmic Lens Containing Hyaluronic Acid and Graphene Oxide Nanocolloids
Jae-wuk Seok, Subin Park, A-Young Sung
Department of Optometry, Daegu Catholic University, Korea

Conformation-controlled Supramolecular Polymerization of Host-guest Complexes
Seoyeon Choi, Rahul Dev Mukhopadhyay, Wooseup Hwang, Kangkyun Baek, Kimoon Kim
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High Density Polyethylene Production by Chromium Complex Based on a Sterically Demanding Ligand
Ho Kyun Ryu, Dae Young Bae, Eunsung Lee, Kyung-sun Son
Department of Chemistry, Chungnam National University, Korea
Department of Chemistry, Pohang University of Science and Technology, Korea

Structure-property-performance Relationships of Organic Photocatalysts for Atom Transfer Radical Polymerization
Chung Soo Kim, Jisu Back, Eunsung Lee, Kyung-sun Son
Department of Chemistry, Chungnam National University, Korea
Department of Chemistry, Pohang University of Science and Technology, Korea

Mesoporous Polymer on Metal-Organic Framework
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Department of Chemistry, Chungbuk National University, Korea

Antimicrobial Peptide Mimetic Functional Polyethers
Minseong Kim, Byeong-Su Kim
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Department of Chemistry, Yonsei University, Korea

Synthesis, and properties of trimers with aromatic heterocyclic compound
Minsub Kim, Intae Kim
Department of Chemistry, Kwangwoon University, Korea

Development of low MW styrene maleic anhydride copolymers as asphaltene dispersants
Joon-Seop Kim, Ki-Cheol Song
Department of Polymer Science and Engineering, Chosun University, Korea
Department of Renewable Energy Convergence, Chosun University, Korea

Non-fullerene Acceptors Materials for Polymer Solar Cells
Seunggyun Hong, Eunhee Lim
Department of Chemistry, Kyonggi University, Korea

Fabrication and Evaluation of Porous Nano-capsule for Humidity Control
Eun Ji Park
Advanced material research division, Korea Institute of Footwear & Leather Technology, Korea
Synthesis and Characterization of Ultraviolet curable adhesive using urethane acrylate

**Eun Ji Park**
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Concentration dependent excitation decays of polymer films blended with non-fullerene acceptors

**Jeong Yoon Choi**, Sang Woong Kang, Chan Im
Department of Chemistry, Konkuk University, Korea
Facile synthesis of carbons with high micropore content as a promising adsorptive material  
**Adeela Rehman**, Soo-Jin Park  
*Department of Chemistry, Inha University, Korea*

Heteroatom-doped hierarchical porous structure as an efficient gas adsorbent  
**Adeela Rehman**, Soo-Jin Park  
*Department of Chemistry, Inha University, Korea*

Significant gas uptake by nitrogen-doped microporous carbons  
**Adeela Rehman**, Soo-Jin Park  
*Department of Chemistry, Inha University, Korea*

MnO2 and banana peel derived porous carbon composites for supercapacitors application  
**Guijun Yang**, Soo-Jin Park  
*Department of Chemistry, Inha University, China*

Synthesis of Li4Ti5O12 anode materials with high specific capacity for lithium-ion batteries  
**Guijun Yang**, Soo-Jin Park  
*Department of Chemistry, Inha University, China*

Synthesis of carbon-based NiCo2O4 as electrodes for an asymmetric supercapacitors  
**Guijun Yang**, Soo-Jin Park  
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Amino functionalized graphene epoxy composites with enhanced mechanical behavior and thermal properties  
**Shahina Riaz**, Soo-Jin Park1,*  
Chemistry, Inha University, Pakistan  
1Department of Chemistry, Inha University, Korea

Facile synthesis of graphene oxide-epoxy composites by thermal latent catalysts  
**Shahina Riaz**, Soo-Jin Park1,*  
Chemistry, Inha University, Pakistan  
1Department of Chemistry, Inha University, Korea

Synthesis of polyethylenimine-impregnated titanate nanotubes for CO2 capture: Influence of porosity and nitrogen content on amine-modified adsorbents  
**Young-Jung Heo**, Soo-Jin Park  
*Department of Chemistry, Inha University, Korea*

Preparation and characterization of highly porous carbon aerogels for hydrogen storage and supercapacitor applications  
**Young-Jung Heo**, Soo-Jin Park  
*Department of Chemistry, Inha University, Korea*

H2O2/steam activation as an eco-friendly and efficient top-down approach to enhancing porosity on carbonaceous materials: oxygen functionalities on the carbon adsorbent for CO2 capture performance  
**Young-Jung Heo**, Soo-Jin Park  
*Department of Chemistry, Inha University, Korea*

CO2 capture with triblock copolymer activated porous carbon contained boron nitride whiskers fabricated via structure directing approach  
**Urooj Kamran**, Soo-Jin Park  
*Department of Chemistry, Inha University, Pakistan*

A comparative analysis of pure and various functionalized titanate nanotubes for lithium uptakes and recovery  
**Urooj Kamran**, Soo-Jin Park1,*  
Inha University, Pakistan  
1Department of Chemistry, Inha University, Korea

Role of P123-Copolymer in boron nitride activation for selective CO2 adsorption  
**Urooj Kamran**, Soo-Jin Park  
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Fabrication of N-doped ZnO/g-C3N4 composites prepared by electrospinning for photocatalytic degradation of rhodamine B  
**SeongJun Mun**, Soo-Jin Park1,*  
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1Department of Chemistry, Inha University, Korea

Effect of Pt-loaded g-C3N4/ZnO nanofibers for enhanced visible light photocatalytic activity via electrospinning  
**SeongJun Mun**, Soo-Jin Park1,*  
Inha University, Korea  
1Department of Chemistry, Inha University, Korea

Synthesis of activated carbons derived from coconut shells for hydrogen storage  
**Ji-Hye Park**, Soo-Jin Park1,*  
Chemistry, Inha University, Korea  
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The influence of silica elimination on microporous carbons for H2 uptakes  
**Ji-Hye Park**, Soo-Jin Park  
*Department of Chemistry, Inha University, Korea*
Influence of Titanium Dioxide on Photocatalytic of Polyvinylpyrrolidone based nanofibers Synthesized via Electrospinning

Yifan Zhang, Soo-Jin Park
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In-situ growth of Graphene Oxide/BiOCl decorated on polyacrylonitrile based nanofibers and their application in photocatalytic degradation of RhB

Yifan Zhang, Soo-Jin Park
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In-situ synthesis of BiOClx/BiOBry/BiOlz decorated on polyacrylonitrile based nanofibers for visible-light photocatalytic investigation

Yifan Zhang, Soo-Jin Park
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Oligonucleotide-Reduced Graphene Oxide Materials: Understanding Based on Electrochemical Oxidation of Guanines

Jinheung Kim
Chemistry Department of Nano-Science, Ewha Womans University, Korea

Home built double resonance probes for diverse non-spinning samples

Ji-Ho Jeong, Yongae Kim

A Detailed Raman and IR Investigation on the Satellite Vibronic Band in Blue-Emissive Pt-Complexes with High Colour Purity

Bo-Sun Yun, Su-Jin Kwak, Su-Won Na, Dae won Cho, Sang Ook Kang, Ho-Jin Son
Department of Advanced Materials Chemistry, Korea University, Korea

A Study on Polymerization Process of Polyethylene Wax with Low Molecular Weight Distribution Using Metallocene Catalysts

Minhyung Kim, Intae Kim
Department of Chemistry, Kwangwoon University, Korea

Effect of Bulkiness and Structural Isomerism of Homoleptic N-Heterocyclic Carbene Iridium(III) Complexes

Bo-Sun Yun, Jeong-Wan Yu, Jin-Hyoung Kim, Min Su Choe, Dae won Cho, Sang Ook Kang, Ho-Jin Son
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Advances, Updates, and Analytics for the Computation-Ready, Experimental Metal-Organic Framework Database: CoRE MOF 2019

Seulchan Lee, Yongchul Chung
Pusan National University, Korea

Division of Chemical and Biomolecular Engineering, Pusan National University, Korea
Inorganic Chemistry Poster Presentation
April 18 (Thu) , Exhibition Hall 2

INOR.P-1
Synthesis of catalysts derived from Co & Ni containing Zeolitic-imidazolate Framework-67 (ZIF-67) and their catalytic performances for the air electrodes in Zn-air batteries
Gyungse Park', Sheraz Ahmed1, Minyoung Yoon2
Department of Chemistry, Kunsan National University, Korea
1Chemistry, Kunsan National University, Korea
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INOR.P-2
Antimicrobial activity of robust porous Cu-MOFs containing glutarates and bipyridyl ligands
Hyun-Chul Kim, Seong Huh, Sung-Jin Kim1, Youngmee Kim2,*, Do Nam Lee3
Department of Chemistry, Hankuk University of Foreign Studies, Korea
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2Institute of Nano-Bio Technology, Department of Chemistry and Nano Science, Korea
3Ingenium College of Liberal arts, Kwangwoon University, Korea

INOR.P-3
Key factors determining the gas adsorption performance of zeolite granules
Ahreum Hwang
Global Technology Center, Samsung Electronics Co., Ltd, Korea

INOR.P-4
Synthesis and Structure of Cobalt(II), Copper(II) and Cadmium(II) Complexes Containing Tridentate $N,N,X$-Iminomethylpyridines
Jaegyeong Lee, Hyosun Lee
Department of Chemistry, Kyungpook National University, Korea

INOR.P-5
Synthesis and Structural Characterization of $[(IPMA)MX_2]$ (M = Co, Cu, Zn, Cd; X = Cl, Br)
Supported by the ligand [IPMA]
Solhye Choe, Hyosun Lee
Department of Chemistry, Kyungpook National University, Korea

INOR.P-6
Development of Mixed Matrix Membranes with Porous Organic Polymers
Dong Won Kang, Minjung Kang, Jong Hyeak Choe, Jeoung Ryul Park1, Hyojin Kim2, Daewon Kim3, Chang Seop Hong
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1Chemistry, Korea University, Korea
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INOR.P-7
Postsynthetic Modified Porous Organic Polymers for Ammonia Capture
Yong Hoon Lee, Dong Won Kang, Chang Seop Hong
Department of Chemistry, Korea University, Korea

INOR.P-8
Quenching Responses toward Nitroaromatic Molecules in a Mn(II)-Based Metal-Organic Framework
Hyojin Kim, Chang Seop Hong1,*, Dong Won Kang1, Minjung Kang1, Jong Hyeak Choe1, Jeoung Ryul Park2, Daewon Kim3
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INOR.P-9
CO$_2$ adsorbents with improved water stability based on diamine-functionalized metal-organic frameworks
Minjung Kang, Dong Won Kang, Jong Hyeak Choe, Jeoung Ryul Park1, Hyojin Kim2, Daewon Kim3, Chang Seop Hong
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INOR.P-10
Size effect of diamine-functionalized metal-organic frameworks on carbon dioxide capture
Daewon Kim, Dong Won Kang1, Minjung Kang1, Jong Hyeak Choe1, Jeoung Ryul Park2, Hyojin Kim3, Chang Seop Hong1
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INOR.P-11
Time-Resolved Turn-on Fluorescence Sensing of Hydrogen Peroxide by Ortho-Carbazole-Appended Triarylboron Compounds
Young Hoon Lee, Heechai Lee, Juhee Kim, Min Hyung Lee
Department of Chemistry, University of Ulsan, Korea

INOR.P-12
Carbazolyl Donor-Triazine Acceptor Containing Triarylboron Compounds as Novel Fluorescent Sensors for Fluoride Anion
Heechai Lee, Hanif Mubarok, Min Hyung Lee
Department of Chemistry, University of Ulsan, Korea

INOR.P-13
The Chemical Crystallography Beamline with
Diverse Analysis at Pohang Accelerator Laboratory

**Dae-Woong Kim**, Dohyun Moon
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Synthesis and Structural Characterization of [(PPEA)MX$_2$] (M = Co, Cu, X = Cl; M = Cd, X = Br) with the ligand (E)-2-(piperidin-1-yl)-N-(pyridin-2-ylmethylene)ethanamine

**Seongmin Kwon**, Hyosun Lee
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Preparation and gas sorption properties of a 3D In-MOF with diamond-like framework

**Suk bin Yoon**, Youngmee Kim$^1$, Sung-Jin Kim$^2$, Seong Huh
*Department of Chemistry, Hankuk University of Foreign Studies, Korea*

Electrochemical capacitances and gas sorption properties of N-doped microporous carbon nanospheres and their KOH-activated derivatives

**Hyun-Chul Kim**, Minsun Park, Seong Huh
*Department of Chemistry, Hankuk University of Foreign Studies, Korea*

Investigation of the geometric and electronic structures of the low-spin Co(IV) complex: An EPR Study

**Yujeong Kim**, Wonwoo Nam$^1$, Sun Hee Kim
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Development of Operando EPR for Biomimetic Catalyst

**Sugyeong Hong**, Sun Hee Kim$^1$,*
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Advanced Electron Paramagnetic Resonance Studies of the Manganese Nanocatalysts for Water Oxidation

**Jin Kim**, Sun Hee Kim
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Preparation and Characterization of Tin(IV) porphyrin-based Gel

**ChangJu Lee**, Hee-Joon Kim
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Re(I) bridged self-assembled Sn(IV)porphyrin based metallacycles

**Nirmal Kumar Shee**, Hee-Joon Kim$^1$,*
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Reactivity Studies of Iridium(I) Complexes of Guanidinato(1–) and Amidinato(1–) Ligands

**Jin Hoon Kim**, Jan-Uwe Rohde
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Synthesis, Characterization and O$_2$ Reactivity of Ni Complexes of Redox-Active Bis(arylimino)pyridine Ligands

**JungHa Lee**, Jan-Uwe Rohde
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High purity nanoparticle synthesis of core / shell structure utilizing thermal plasma technology and atomic layer deposition

**Jhong Ryul Yoo**, Sungho Park$^1$,*
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Synthesis and properties of Ni(II), Pd(II), and Pt(II) complexes with five-membered heterocyclic rings

**Jungha Lee**, Jan-Uwe Rohde
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High purity nanoparticle synthesis of core / shell structure utilizing thermal plasma technology and atomic layer deposition

**Jhong Ryul Yoo**, HongBeom Shin, Sungho Park
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Synthesis and properties of Ni(II), Pd(II), and Pt(II) complexes with five-membered heterocyclic rings

**Heekwon Park**, MinGyu Ham, Soon W. Lee$^1$
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Zintl Phase with the Mixed Cations for the Thermoelectric Material Application: the Series of Ca$_{2-x}$Yb$_x$CdSb$_2$

**Ki Won Kim**, Tae-Soo You
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Eco-sustainable Fe$_3$O$_4$ Nanoparticles Embedded Metal-Organic Framework Composite for Facile Removal of Aqueous Lead

**DooJin Lee**, Gyungse Park$^1$, Minyoung Yoon
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PtM@RuO$_2$ nanorod (M=Ni, Co) with excellent OER activity and stability

**Haneul Jin**, Minki Jun, Heesu Yang, Kwangyeol Lee
Mixed metal sulfide-supported IrNi nanoparticles as extremely robust electrocatalysts for the oxygen evolution reaction

Minki Jun, Haneul Jin, Sunghyun Lim, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

Highly activated hollow rhodium phosphide/sulfide: an efficient and robust electrocatalyst toward hydrogen evolution reaction

Yongju Hong, Haneul Jin, Taekyung Kim, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

The doping effect of transition metal in Cu$_{2-x}$S@IrRu nanoparticles for oxygen evolution reaction in acidic media

Ye Ji Park, Jinwhan Joo, Haneul Jin, Kwangyeol Lee
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Chiral Zinc(II) Cyclodimers: Enantio-recognition via Pulse Voltammetry

Sarada Ganguri, Ahreum Kim, Ok-Sang Jung
Department of Chemistry, Pusan National University, Korea

Confinement Effect of Palladium(II) cages on Oxidation via Pd2L4 Prolate Spheroid

SeongHyeon Park, Jeyoung Lee, Ok-Sang Jung
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Time-dependents self-assembly: Transformation of Kinetic into Thermodynamic Crystals

Dongwon Kim, Soojin Lee, Ok-Sang Jung
Pusan National University, Korea

Stable Supra Channels with Column Cyclodimeric Ensemble: Exchange and Matrix of Various Liquid Guests in SCSC Fashion

SooMin Hyun, EunSoo Yi, Ok-Sang Jung
Department of Chemistry, Pusan National University, Korea

AuAg hollow nanocubes prepared by galvanic replacement as optimized electrocatalysts for direct electrochemical CO$_2$ reduction

Joon Woo Park, Hyunjoon Song
Department of Chemistry, Korea Advanced Institute of Science and Technology, Korea

Catechol Oxidation Catalysis of Bimetallic Copper (II) Cages

Lingling Yang, Jyoti Ramesh Jadhav, Ok-Sang Jung
Department of Chemistry, Pusan National University, Korea

In-situ single-particle plasmonic imaging of electrochemical facet-selective overgrowth of Cu onto Ag nanocubes

Hyuncheol Oh, Hyunjoon Song
Department of Chemistry, Korea Advanced Institute of Science and Technology, Korea

Diiodomethane within 1D-Ensemble Suprachannels turn into Triiodide–Iodine Channel via Photoreaction

Hyejin Oh, Sang Woo Lim, Ok-Sang Jung
Department of Chemistry, Pusan National University, Korea

Synthesis of facet-controlled hollow metal-organic frameworks via cation exchange method

Sunghyun Lim, Taehyun Kwon, Minki Jun, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

Synthesis, structure and adsorption properties of Zn$^{2+}$ and Co$^{2+}$ based metal-organic frameworks with multifunctional ligands

Jongin Choi, Hyungphil Chun
Department of Applied Chemistry, Hanyang University, Korea

Watermill-Type Dicopper(II) Complex with Macrocycle via Adaptive Exo-Coordination, Ligand Oxidation and Solvent Decomposition

Seulgi Kim, Han-byeol Choi, In-Hyeok Park, Shim Sung Lee
Department of Chemistry, Gyeongsang National University, Korea

Adaptive Guest Binding and Coordination Networking of Pillar[5]-bis-crowns

Mingyeong Shin, Shim Sung Lee
Department of Chemistry, Gyeongsang National University, Korea

Hierarchically branched trimetallic nanocage as a highly active and durable electrocatalyst toward the methanol oxidation reaction

Seokpyo Jeon, Songa Choi, Ye Ji Park, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

Synthesis of Ni$_3$S$_2$ Octahedral Nanocage as an Efficient Electrocatalyst for Hydrogen Evolution Reaction

Jinhyoung Jo, Jun Kim, Taekyung Kim, Kwangyeol Lee
Department of Chemistry, Korea University, Korea
One-pot synthesis of composition-tunable core-shell ternary nanowires and their composition dependent activity toward the oxygen evolution reaction

Heesu Yang, Taehyun Kwon, Jinwhan Joo, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

Heterophase Ir/Pt nanoframes as efficient electrocatalysts toward oxygen evolution reaction

Songa Choi, Seokpyo Jeon, Ye Ji Park, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

Iridium Cobalt Alloy Nanoparticles on Co₃Sy Nanocage as a Robust Bifunctional Electrocatalyst in Water Splitting Catalysis

Jun Kim, Jinwhan Joo, Jinhyoung Jo, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

Transition metal oxide/chalcogenide arrays on nickel foam for efficient and stable electrocatalysts

Jinwhan Joo, Jun Kim, Taekyung Kim, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

Synthesis of 3d transition metal-doped PtZn intermetallic nanoparticles by using ZIF-8 nanocubes as a template

Taehyun Kwon, Doyeop Kim, Sunghyun Lim, Kwangyeol Lee
Department of Chemistry, Korea University, Korea

Design and Synthesis of Ruthenium Aqua Complexes Featuring Oxidation Potential Inversion 1

Byung Wook Lee, Young Hoon Jang, Youn Kyung Kang
Department of Chemistry, Sangmyung University, Korea

Design and Synthesis of Ruthenium Aqua Complexes Featuring Oxidation Potential Inversion 2

Young Hoon Jang, Byung Wook Lee, Youn Kyung Kang
Department of Chemistry, Sangmyung University, Korea

Nanoparticle anisotropy control via surface energy modulation

Taekyung Kim, Yongju Hong, Jun Kim, Kwangyeol Lee

Well-Arranged and Confined Incorporation of PdCo Nanoparticles within a Hollow and Porous Metal-Organic Framework and Its Superior Catalytic Activity

Sojin Oh, Jian Yeo, Sujeong Lee, Moonhyun Oh
Department of Chemistry, Yonsei University, Korea

Co- and N-codoped Porous Carbon Catalyst Made from Core–Shell Type Hybrid MOF (ZIF-L@ZIF-67) and Its Efficient Oxygen Reduction Reaction (ORR) Activity

Sujeong Lee, Sojin Oh, Moonhyun Oh
Department of Chemistry, Yonsei University, Korea

Unbalanced MOF-on-MOF Growth for Production of Lopsided Core-Shell of MIL-88B@MIL-88A with Mismatched Cell Parameters

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Metal doped Ru oxide-based nanocrystals toward efficient water splitting reaction

Songa Choi, Intaek Yeo, Yongju Hong, Kwangyeol Lee
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New platform to Measure Thermopower of Molecules: Eutectic Gallium-Indium Electrode based Large-area Thermoelectric Junctions

Sohyun Park, Hyo Jae Yoon
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Mechanochemically Exposed Cu–Ag–Hg Multi-Metallic Thin Films for Improved CO₂ Reduction Electrocatalysis

Jooyeon Kim, Hyun Seo Ahn
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Chemical Strategies to Modify Amyloidogenic Peptides by Iridium(III) Complexes: Coordination and Photo-Induced Oxidation

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Sr-glass to capture CO₂ coming from the treatment of carbowastes

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Redox-active π-stacking molecule coating on gold
nанороды

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Aluminum Complexes Containing Phenoxyimine Ligands and Their Application into CO₂ Conversion
Seuyeon Cho, Youngjo Kim
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Ruthenium(III) Nitrosyl Complexes Containing bis-Carboxamide Tetradentate Ligand: Syntheses, Structures and Photoreactivities
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New Bisquinoxine Cu(I) complex for Catechol Oxidase Activity
Eun su Chae, Jang hoon Cho, Hong In Lee
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Practical Use of Microwave for Activation of Metal-Organic Frameworks under Ambient Condition
Eun Ji Lee, Nak Cheon Jeong
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Synthesis and Characterizations of 1,1-Diethyl (or Dihexyl or Diisopropyl)-2,5-bis[(trimethylsilyl)ethynyl]-3,4-diphenyl-siloles
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Synthesis of Functionalized Metal-Organic Frameworks and Mixed Matrix Membrane Composites
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Fine-Tuning on Pillared Metal-Organic Frameworks for Carbon Dioxide Fixation Catalysts
Dasom Kim, Min Kim
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Large-area Junctions of N-Heterocyclic Carbene-based Self-Assembled Monolayers, and Their Tunneling and Thermopower Properties
Seohyun Kang, Sohyun Park, Hyo Jae Yoon
Department of Chemistry, Korea University, Korea
Heterometal coordinated concanavalin A and its trimeric complexation
Seung Jae Lee, Ha Ra Jang, Yung Min Lee
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Oxidation of methane through component interactions from type II methanotrophs
Seung Jae Lee, Heeseon Yoo, Chungwoon Yoon, Jaewoong Park
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Synthesis of New Copper Precursors for Atomic Layer Deposition of Cu Oxide Thin Films
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Boost-up Electrochemical Performance of MOFs via Confined Synthesis within Nanoporous Carbon Matrices for Supercapacitor and Oxygen Reduction Reaction Applications
Hee Soo Kim, Min Seok Kang, Jeho Suh, Won Cheol Yoo
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Synthesis of Model Complex of [NiFe]-Carbon Monoxide Dehydrogenase Active Site using Aromatic Spacer
Seungjin Song, Junhyeok Seo
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A multifunctional selective “turn-on” fluorescent chemosensor for detection of Group IIIA ions Al³⁺, Ga³⁺ and In³⁺
Pyeong An Kim, Yuna Seo, Cheal Kim
Fine Chemistry, Seoul National University of Science & Technology, Korea

A dual target chemosensor for the fluorometric detection of In³⁺ and colorimetric detection of Fe³⁺
Duo Zhang, Chang Joo Rha, Cheal Kim
Fine Chemistry, Seoul National University of Science & Technology, China

Adduct effects on structure and luminescence in a series of new dithiocarbamatogold(I) complexes
HeeHun Moon, Sung Kwang Lee, Young-A Lee
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Synthesis and structural analysis of Sr complex of tridentate ligands : [ Sr(L)³(btsa)² ] ( L = (bdmpH), (bdmampH) and (dadambH) ) ( btsa = bis(trimethylsilyl)amine )
Chanwoo Park, Taek-Mo Chung, Bo Keun Park, Chang Seop Hong
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Aligned Microporous Organic Network Tubes for the AIE-Based Sensing of Explosives
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Macroporous Engineering of Conjugated Microporous Organic Network Films Bearing Tetraphenylethlenes for the Enhanced Sensing of Nitrotoluenes
Chang Wan Kang, Seung Uk Son
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Hollow microporous organocatalysts bearing pyrrolidines
Kyoungil Cho, Seung Uk Son
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Polymer-assisted synthesis of hierarchical mesoporous metal organic framework-A host for catalytic nanoparticles and large biomolecules
Soumen Dutta, In Su Lee
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A highly selective fluorescent chemosensor for detecting indium(III) with a low detection limit and its application
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Electrochemical activity of Pd@PdS core shell in ethanol oxidation reaction
Hyung Bo Shim, Heon Chul Kim, Jong Wook Hong
Chemistry, University of Ulsan, Korea

Synthesis of Pd Nanocubes@PANI/C as Catalysts for Proton Exchange Membrane Fuel Cell
Heon Chul Kim, Hyung Bo Shim, Jong Wook Hong
Chemistry, University of Ulsan, Korea

Solution-phase growth of Cu2O nanocubes on dispersible MoS2 nanosheets for photocatalytic property


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Pd-based nanocubes as electrochemical catalyst for CO2 reduction reaction

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¹Chemistry, University of Ulsan, Korea

N-Heterocyclic Carbene Derived 3-Azabutadiene as π-Basic Component in Frustrated Lewis Pair Chemistry

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Ligand Modification of Ni-Pincer Complexes for Electrochemical H2 Evolution

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Enhanced Photodynamic Therapy Properties in nano-sized Mixed Ligands Metal-Organic Frameworks

**Jiwon Kim**, Kyoung Chul Park, Chang Yeon Lee  
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Highly Photostable Novel BODIPY based Metal Complexes for Mitochondrial Localization

**Gajendra Gupta**, Chang Yeon Lee  
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Assembling M-porphyrin@ZIF with Carbon Nanofiber for Oxygen Evolution and Hydrogen Evolution reaction Electrocatalyst

**Sujee Cho**, Miyeon Kim, Chang Yeon Lee  
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Real-Time Colorimetric Detection of Water in Organic Solvents by Dipolar Dye Incorporated into AlPO4-5 Nanochannel

**Hyeonji Yoo**, Hyun Sung Kim¹  
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Olef in Epoxidation by Nickel Amidate Complex: Proton Switch in the Ligand Sphere to Control Catalytic Events in the Metal Sphere

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Reproducible synthesis of a zeolitic imidazolate framework exhibiting MER topology

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Exploration of enzyme-mimicking MOFs for decarboxylation of orotic acid derivatives

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Highly Selective and Durable Photochemical CO2 Reduction by Mn(I)-based hybrid system (OrgD-[TiO2]-MnP)

**Sunghan Choi**, Ju Hyoung Jo, Min Su Choe, Chul Hoon Kim, Sang Ook Kang, Ho-Jin Son  
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Solid-state photochromism from molecular assembly of bis-o-carboranyl siloles

**Jin-Hyoun g Kim**, Su-Jun Kwak, Changhyun Back, Chul Hoon Kim, Sang Ook Kang, Ho-Jin Son  
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An Investigation on Photocatalytic CO2-to-CO Conversion Activities of Heteroleptic [Ir(CN)2(N^N)]+-type Complexes-Sensitized TiO2 Ternary Hybrids (IrPS/TiO2/Re(l))

**Sunghan Choi**, Ju Hyoung Jo, Daehan Lee, Chul Hoon Kim, Sang Ook Kang, Ho-Jin Son  
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Double p-type doping Effects for the Complex Zintl Compounds: Ca10.88(4)Li0.12Sb9.32(1)Ge0.42(1)  
Ca10.94(3)Na0.06Sb9.43(1)Ge0.45(1)

**JunSu Lee**, Tae-Soo You  
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Analysis of the Visual and Circadian Properties of a Multi-Package Phosphor-Converted LED for Indoor Lightings

**Yun Jae Eo**, Heejoon Kang, Soomin Ahn, Keyong Lee, Young rag Do  
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Application on Tri-packaged White Down-Converted LEDs using Green Zn-Ag-In-S/Zn-In-S/ZnS for High Color Qualities

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Reproducible synthesis of a zeolitic imidazolate framework exhibiting MER topology

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¹Chemistry, Soongsil University, Korea

Exploration of enzyme-mimicking MOFs for decarboxylation of orotic acid derivatives

**Kyungkyou Noh**, Jiwon Kim¹, Jongbum Oh¹, Jaheon Kim¹  
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¹Department of Chemistry, Soongsil University, Korea

Highly Selective and Durable Photochemical CO2 Reduction by Mn(I)-based hybrid system (OrgD-[TiO2]-MnP)

**Sunghan Choi**, Ju Hyoung Jo, Min Su Choe, Chul Hoon Kim, Sang Ook Kang, Ho-Jin Son  
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Solid-state photochromism from molecular assembly of bis-o-carboranyl siloles

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An Investigation on Photocatalytic CO2-to-CO Conversion Activities of Heteroleptic [Ir(CN)2(N^N)]+-type Complexes-Sensitized TiO2 Ternary Hybrids (IrPS/TiO2/Re(l))

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Double p-type doping Effects for the Complex Zintl Compounds: Ca10.88(4)Li0.12Sb9.32(1)Ge0.42(1)  
Ca10.94(3)Na0.06Sb9.43(1)Ge0.45(1)

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Analysis of the Visual and Circadian Properties of a Multi-Package Phosphor-Converted LED for Indoor Lightings

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Application on Tri-packaged White Down-Converted LEDs using Green Zn-Ag-In-S/Zn-In-S/ZnS for High Color Qualities

**Minji Ko**, Hyeongjin Lee¹, Young rag Do²  
Department of Chemistry, Kookmin University, Korea
Construction of Rigid Hetero-Multimetallic Co$_2$Pt$_8$ Supramolecular Cages Having D$_4$ Symmetry

Ji Yeon Ryu, Junseong Lee
Department of Chemistry, Chonnam National University, Korea

Enhancement of Photoluminescent Quantum Yield of InP/ZnSeS/ZnS/Zr Quantum Dots by using Multi-Functional Ligand

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Multinuclear nickel(II) complexes with chiral Schiff base ligands

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Cobalt(III) Complexes Containing [ONNO] Type Tetradeentate Pyridoxal Ligand for Cycloaddition Reaction of CO$_2$ and Epoxide

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Fabrication of a ripple-less narrow bandwidth stop filter with an aperiodic deposition by simulating and depositing a nano-multilayer

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Color-by-Blue Three-Package White LED with Narrow-Band BaMgAl$_{10}$O$_{17}$:Eu,Mn Green Phosphor and K$_2$SiF$_6$:Mn Red Phosphor for a Wide Color Gamut of LED Backlighting Achieves the NTSC Standard of 109.

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Design of a flexible MOF having catalytic sites and its structural effects on CO$_2$ cycloaddition reaction

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Reduce mustard gas simulant by using ZIF-8(Zeolitic Imidazole Framework)

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Electromagnetic interference shielding of Nonwetting Flexible Free-Standing MXene-Carbon Fabric composite

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Electromagnetic Shielding of water repellent Lightweight and Flexible Graphene-Coated Fabric compost and MXene-Graphene-PVDF Composite foam

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Hydrogen Bond-Enabled Heterolytic and Homolytic Peroxide Activation within Nonheme Copper(II)-Alkylperoxo Complexes

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Curvature-dependent Growth behaviors of Zincone MLD Film on Nanostructured Surfaces

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Elucidating the Mechanism of Atomic Layer Deposition in Solution Using Germanium and Antimony Precursors with Tellurium Reagent

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Synthesis, Crystal Structures, and Characterization of Three New Metal Organic Coordination Polymers, [(TC)₆Zn₃(bipy)], [(TC)₆Co₃(bipy)] and [(TC)₄Cu₂(bipy)]

Jungjoo Kim, Kang Min Ok
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New Antimony-Based Chiral Organic–Inorganic Hybrid Materials with Yellow Photoluminescence

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Synthesis, structure, and characterization of new lanthanoid tellurium oxide nitrate compounds, M(TeX(NO₃) (M=Y, La, and Eu)

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A new noncentrosymmetric molybdenum oxyfluoride

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Sb(III)-Coordination Complexes Exhibiting Yellowish Green Emissions with Outstanding Lifetimes

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Two New Transition Metal fluorides with Dimeric and Monomeric Asymmetric Basic Building Units

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Structure and Phase Transition of Polyoxoperoxomolybdates

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Hydrothermal Synthesis and Characterization of a Cesium Niobium Oxyfluoride

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Rb₇MY₂B₁₅O₃₀ (M = Sr and Ba): Two New Rare-earth Borates as Potential Ultraviolet Nonlinear Optical Materials

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N-heterocyclic Carbene (NHC)-functionalized Ferrocene Cation: Synthesis, Spectroscopic and Computational Studies

Hayoung Song, Eunsung Lee
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Controlling Amorphization in Metal-Organic Frameworks

JooHan Nam, Eunjin Jin, Wonyoung Choe
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Control of micro- and meso-porosity in metal-organic frameworks

Seok Jeong, Myoung Soo Lah
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Enhancement of selective heavy metal adsorption ability due to amino acid in MOF-808

Junmo Seong, Myoung Soo Lah, Seungwan Han
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Observation of intermediate state in organic-inorganic hybrid perovskite thin film fabricated by two-step sequential vacuum evaporation method

**Young Mi Lee**
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Implementation of the method of separable solution for Hartree-like equations by Teller and Sahlin's variation method to obtain directly the threshold wavefunctions for Rydberg series $n\lambda$ of many electron diatomic molecules

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Fabrication of porous gold nanoshells *via* nanosecond-laser irradiation

**Tae-Hyeon Park, Du-Jeon Jang**
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Facile fabrication of silver nanoparticle arrays by optical-induced melting and dewetting of silver paste

**Joon Ki Kim**, Tae-Hyeon Park, Dong-Won Jeong, Zee Hwan Kim, Du-Jeon Jang
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Stepwise growth of CdS quantum dots in ethylene glycol

**Dong-Won Jeong, Du-Jeon Jang**
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Hydrothermal fabrication of porous ZnS photocatalysts with a controlled amount of S vacancies

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Oxidative Degradation of Refractory Contaminants Mediated by Surface SO4$^{2-}$ Immobilized on Metal Oxides

Yun Jeong Choe, Sang Hoon Kim, **Jongsik Kim**
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Enhancement of visible to UV up-conversion response of hollow phosphor Y2SiO5:Pr3+ by using surface plasmon resonance.

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CO2 Activation and Reduction with Nafion/g-C3N4/CuInS2 Photocathode in Photoelectrochemical System

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Preparation of Nd2Fe14B/FeCo Magnetic Nanocomposite by Using Sol-Gel Method

**Ngo Minh Hieu, Young soo Kang**
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Photocatalytic properties of ZnO/ZnTe heterostructured film on a FTO substrate for Photoelectrochemical CO2 reduction

**Mi Jung, Young soo Kang**
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Effect of Tetragonal to Cubic Phase Transition on the Upconversion Luminescence Properties of A/B site Erbium-doped Perovskite BaTiO3

**Hyeongyu Bae, Kang Taek Lee**
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Trans-activator of transcription peptide coated ultrasmall Gd$_2$O$_3$ nanoparticles

**Shuwen Liu, Gang Ho Lee**
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Study of various sizes of Polyacrylic acid (PAA) coating ultrasmall Gd$_2$O$_3$ nanoparticles for MRI

**Xu Miao, Gang Ho Lee**
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A New Computational Method for Protein-Ligand Binding Thermodynamics

**Song-Ho Chong, Sihyun Ham**
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Water Soluble Polyacrylic acid Coated Tb$_2$O$_3$ Nanoparticles as Dual Imaging Agent: T$_2$ MRI-Fluorescence Imaging Agent

**Shanti Marasini, Gang Ho Lee**
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X-ray Attenuation Properties of Ultrasmall Yb$_2$O$_3$ Nanoparticles as a High-Performance CT Contrast Agent

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The Counterpoise Correction method used for the basis set superposition effect is failed; where and why?

**Nasir Shahzad, Chan Kyung Kim**

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Potential Selective H$_2$S Adsorption onto the Graphene and Doped-Graphene Intervening layers and Reaction with Water to Evolution of Hydrogen and SO$_2$ as a Function of Reducing Air Pollution

**Adhikary Keshab Kumar, Chan Kyung Kim**

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Conductivity change of ring structure molecules after encapsulation inside single-walled carbon nanotube

**Junyoung Lee, Jonghee Yang, Whikun Yi**

*Department of Chemistry, Hanyang University, Korea*

Spectroscopic Demonstration of length-dependent ultrafast depolarization dynamics of a Frenkel exciton in a sterically π-stacked Perylene Bisimide aggregate

**Seongsoo Kang, Dongho Kim**

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Graph Convolutional Neural Network for Understanding Molecular Topology

**Hyeoncheol Cho, Insung Choi**

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A molecular dynamics study of electrolytic systems for EDLC applications

**Abdullah Bin faheem, Kyung-koo Lee**

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Carbon-coated gadolinium oxide nanoparticles for dual-modal imaging

**Huan Yue, Gang Ho Lee**

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Poly(acrylic acid-co-maleic acid)-coated Gadolinium Oxides Nanoparticles as T$_1$ MRI contrast agents.

**Yeong Ji Jang, Gang Ho Lee**

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Intrinsic and Photo-Induced Photoluminescence of Atomically Thin Chromium Thiophosphate (CrP$_5$)$_4$

**Suhyeon Kim, Sunmin Ryu**

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Detection of Pesticide-like Compounds Using Surface-enhanced Raman Scattering

**Eungyeong Park, Sila Jin, Yeonju Park, Young Mee Jung**

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Study of characterization and photocatalytic activity of Fe$_3$O$_4$@TiO$_2$-Au magnetic heterostructure

**Sila Jin, Chen Lei, Young Mee Jung**

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College of Chemistry, Jilin Normal University, China

From the Understanding to the Design of Photochromic Sulfur-Doped Sodalites by a Combined Computational and Experimental Approach.

**Antton Curutchet, Mika Lastusaari**, Eunkyoung Kim

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Effects of Dielectric Environment on Optical Spectra of Monolayer Tetracene Crystals

**Seonghyun Koo, Sunmin Ryu**

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Excited-state proton transfer of 2-naphthol sulfonate derivatives in various water-in-oil microemulsions investigated by fluorescence spectroscopy

**Su-Hyun Kang, Han Gook Cho, Byeong-Seo Cheong**

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Mechanistic Studies of the 5-Dimethylamino-Naphthalene-1-Sulfonyl Chloride

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Direct observation of ultrafast symmetry breaking charge separation (SBCS) in perylene bisimide
Yongseok Hong, Dongho Kim  
Department of Chemistry, Yonsei University, Korea

Characterization of Ultra Small Indium Phosphide Nanoclusters  
Juwon Oh, Dongho Kim  
Department of Chemistry, Yonsei University, Korea

Controllable Optical and Magnetic Properties of Self-doped Mercury Chalcogenide Colloidal Quantum Dots  
Danbi Lee, Yun Chang Choi, Kwang Seob Jeong  
Department of Chemistry, Korea University, Korea

Efficient π-π Stacking of Annulated Rosarin Derivative  
Gak Hyun Kim, Dongho Kim  
Chemistry, Yonsei University, Korea

Photodissociation of 1-Bromo-3-chlorobenzene  
BongGyu Jeong, HyunWook Choi, Jae Kyu Song, Seung Min Park  
Department of Chemistry, Kyung Hee University, Korea

Intramolecular Two-Electron Transfer Stabilized by Excited-State Aromatization  
Jinseok Kim, Dongho Kim  
Department of Chemistry, Yonsei University, Korea

Solvation and Symmetry-Breaking Charge transfer in Porphyrin Triad by Using Broadband Fluorescence Up-conversion Spectroscopy  
Taeyeon Kim, Dongho Kim  
Department of Chemistry Graduate School, Yonsei University, Korea

Solvent-Modulated Charge-Transfer Resonance in the Excimer State of a Bay-Substituted Perylene Bismide Dimer  
Woojae Kim, Dongho Kim  
Department of Chemistry, Yonsei University, Korea

Investigation of Conformational Heterogeneity in Large Macroyclic Thiophenes by Single-Molecule Fluorescence Spectroscopy  
Sang Hyeon Lee, Dongho Kim  
Department of Chemistry, Yonsei University, Korea

Poly(Acrylic Acid)-RGD Coated Gadolinium Oxides Nanoparticles: Bifunctional Agent for MRI and Gadolinium Neutron Capture Therapy  
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The role of torsional disorders in exciton self-trapping and delocalization dynamics of [n]cycloparaphenylenes  
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Polarization-Dependent Photoluminescence of Highly (100)-Oriented Perovskite Film  
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Elucidation of Photoluminescence Blinking Mechanism and Multiexciton Dynamics in Hybrid Organic-Inorganic Perovskite Quantum Dots  
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Aqueous Bimolecular Proton Transfer in Acid-base Reaction using Femtosecond Infrared Spectroscopy  
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Branching ratio about ternary cluster cations  
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Enhancement of Exciton Transport in Porphyrin Aggregate Nanostructures by Controlling the Hierarchical Self-Assembly  
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A conformational study of 4-bromo-1-butene using chirped-pulse Fourier-transform microwave spectroscopy  
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Photodissociation Dynamics of CF2I2 in Solution Probed by Time-Resolved Infrared Spectroscopy  
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Rebinding Dynamics of CO with Cytooglobin in Aqueous Solution Investigated by Time-resolved Vibrational Spectroscopy  
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Dynamics of NO release from Photoexcited Roussin’s Red Ester Probed by Time-resolved Infrared Spectroscopy  
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Femtosecond pump-probe experiments at hard X-ray scattering & spectroscopy (XSS) beamline, PAL-XFEL

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Analysis on anisotropic effects of diffusion-influenced reactions

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Development of versatile spectrometer for ultralow-frequency (50 cm\(^{-1}\)) Raman and Photo Luminescence measurement of MAPBI\(_3\) Perovskite.

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Structural Dependence on Intermolecular π→π Interaction of Poly(3-hexylthiophene) Probed by Polarized Raman Spectroscopy and Theoretical Calculation

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Increased reaction rate by near-degenerate multiple reaction pathways in oxidative addition of chlorobenzene to POP rhodium complex

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Excited state hydroxide ion dissociation reaction of an Arrhenius photobase

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Headgroup Effect on the Formation of Self-Assembled Monolayers on Au(111) by Adsorption of 2-Phenylethyl Thiocyanate and 2-Phenylethyl Selenocyanate

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Surface Morphology and Reductive Desorption Behavior of Self-Assembled Monolayers on Au(111) Derived from Aromatic Dithiol and Diselenol

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Formation and Growth of Pentafluoroselenolate Self-assembled Monolayers on Au(111) at High Temperature

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Photoionization of cyclopentanone conformers and photodissociation of the corresponding cation using high resolution vacuum ultraviolet mass analyzed threshold ionization (VUV-MATI) spectroscopy

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Enhancement the photovoltaic performance of perovskite solar cells with improvement on down converting properties of Eu-PDMS complex detachable film

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Conformational preference and cationic structure of 2-methylpyrazine by VUV-MATI spectroscopy and natural bond orbital analysis

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Conformational structure of cationic tetrahydropyran by VUV-MATI spectroscopy

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Photoionization study of non-volatile molecules in the gas-phase by IR desorption/VUV single photoionization spectroscopy

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High resolution vacuum ultraviolet mass-analyzed threshold ionization (VUV-MATI) spectroscopy of 2-chloropyridine: Determination of adiabatic ionization energy and cationic structure

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One-photon Vacuum ultraviolet mass-analyzed threshold ionization spectroscopy (VUV-MATI) of methyl vinyl ketone: Determination of Composition of s-trans and s-cis conformers

**Jaehwan Choi**, Sung Man Park, Hong Lae Kim, Chan Ho Kwon
Surface-catalytic azo coupling reactions of 4-amino-4'-nitrobiphenyl on metal surface: SERS and DFT study

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Cooperative Plasmon-Driven Reactions: One Reaction Helps the Other in Nanogaps

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Facile Method for Preparation of Bare Gold Nanoparticles

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Validity of selection of local mode coordinates to calculate water OH stretching frequencies quantum mechanically.

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First-principles calculations of electronic structure in nitride systems with self-consistent hybrid functional scheme

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Time-resolved spectroscopy with two frequency-stabilized mode-locked lasers

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Network structure and dynamics of hydration water at zwitterionic lipid membrane surfaces

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Crystal Transformations of Cu(I) Coordination Polymers Using Pulsed Laser Irradiation (PLI)

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Computational study on the structural and thermodynamic characteristics of the Amyloid-beta peptides in Explicit Water

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Complex dynamics of agglomeration and dispersion of magnetite nanoparticles under magnetic field studied by measuring magnetic weight

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Quantum Chemical Study of Spectroscopy and Photochemistry of SF$_5$CF$_3$

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Improving force fields for molecular dynamics simulations using colligative properties in physical chemistry

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Computational Study on the Relationship of Hole Reorganization Energy and Electrostatic Potential Maps of Triphenylamine Based Hole Transport Materials

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Understanding NIR-to-red upconversion process of NaErF$_4$ and NaYF$_4$:Yb$^{3+}$:Er$^{3+}$

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Gold Nanoparticles Ablated and Irradiated by Pulse Laser in Organic Solvents for SERS Substrate

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NIR Porphyrin-Based Dyes for Applications in Dye-Sensitized Solar Cells

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Real-time 2D imaging of carrier recombination dynamics of perovskite materials

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Generation of ultrafast continuum mid-infrared laser pulse

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Observation time-dependent mean first passage time for subdiffusive processes

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Axial Ligand Dependent MO Interactions along the Reaction Coordinates of Hydrogen Atom Transfer in the C-H Activation by P450 Cpd I.

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Spectroscopic properties of BODIPY aggregates

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Direct observation of phonon dynamics of metal thin film

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The Li ion battery’s electrolyte solvation dynamics in operando condition

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Morphological Changes of Tandem Organic Photovoltaics

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Spectroscopic studies of jet-cooled 2-cyanoindole and its water clusters: R2PI and computational calculation.

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Construction of pH-Sensitive Upconverting Luminous Nanoparticles

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Vibrational circular dichroism spectroscopy of jet-cooled ephedrine and its hydrated clusters

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Correcting Approximate Density Functionals by Parts

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Accurate Description of Torsional Energy Profile using Density-Corrected Density Functional Theory

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Heterogeneous OER catalytic reaction study using in situ Sum-frequency generation spectroscopy

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Observation of changes in the morphology and bulk phases of TiO2 nanoparticles under pulsed laser irradiation in water

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Identifying phosphorylation site of Janus kinase 3 using cryogenic ion spectroscopy of DYYVVR

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Singlet exciton fission in two stacked geometries of perylenediimide
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Cooperative protein structural changes of homodimeric hemoglobin arising from weakened network of subunit interface studied by time-resolved X-ray solution scattering
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The reaction mechanism study for the synthesis of benzoxazole with Flow cell and Two-dimensional correlation method
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Dual frequency comb spectroscopy for optical activity measurement
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Effects of the spatial arrangement of nanoparticles on the glass transition temperature of polymer fibers
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Adsorption and Desorption Properties of CNT-sponge Preconcentrator
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Molecular Dynamics Study for the Effect of Additive Ions on Phase Transformation of Amorphous Precursor Phases of CaCO₃
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Two-Dimensional Raman Encoding System for Combinatorial Peptide Libraries with High-Throughput Assay
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A portable GC for real-time monitoring of VOCs in air samples
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High-throughput Multiplex Analysis Method Based on Fluorescence-SERS Quantum Dot Embedded Silver Bumpy Nanoprobe
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Adsorption behavior of cis-2-buten-1,4-diol on Ge(100)
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Silver Nanoshell: One-step, Surfactant-free Controlled Synthesis for Regulating Surface Morphology and Their Enhanced Scattering Properties
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Molecular dynamics studies on rotator-solid phases of imidazolium-based organic ionic plastic crystals
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Observation of field-molecule interaction in REMPI spectrum of polyatomic molecule
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Effect of size and shape of TiO₂ nanoparticles on charge carrier dynamics
Yeonsig Nam, Jonghyeon Lim, Francis Kirby Burnea, Yoon-Sik Lee, Dae Hong Jeong
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Non-classical enzyme kinetics with on-off regulation
Gyunam Park, Sangeeun Song, Ji-Hyun Kim, Jaeyoung Sung
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Study on the effect of the hydrophobic interaction between lipid molecules on the lipid flip-flop motion in lipid vesicles
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Theoretical Study on Chemical Reaction Mechanisms of 1,3-C₄F₆
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Spectroscopic evidence of charge carrier transfer in aggregated DPAT-An nanocomposite

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Investigation of the triplet-triplet energy transfer mechanism between two cyclometalated iridium(III) complexes

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Influences of Bulky Substituent on the Phosphorescence Properties of Homoleptic Iridium(III) Complexes

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The existence of protonated oxygen with iodide ion and its role in the formation of triiodide ion

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The Intraband Transition of Less Toxic Self-Doped Metal Chalcogenide Nanocrystal

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Assessment of the MR-SF-TDDFT for conical intersections

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Origin of high reactivity and enhanced endo/exo selectivity in water-accelerated Diels-Alder reactions

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Formation of Fe(III)-Oxyl Species in the C-H


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CTAB-modified AuNPs for sensitive SERS measurement

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Study of Hydrogen species in C20 and C70 Fullerenes

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Understanding the Electrochemical Reaction in the Polybromide Battery System

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Strange Cargo Delivery Dynamics in Living Cells

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Histidine (δδδ) and (εεε) tautomer effect on early oligomerization stage of the amyloid-beta peptide (1-40)

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Particle Size-Dependent Metal-Enhanced Fluorescence of Dyes on Homogeneous Silver Colloidal Surfaces

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Time-resolved Structural Dynamics of para-Halogen-disubstituted trans-Stilbene

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Twisted intramolecular charge transfer state of push-pull emitters investigated by time-resolved Raman spectroscopy

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In-Silico Screening of Iron(IV)-Oxo Complexes as C-H Bond Activation Catalysts Using Machine Learning Algorithms

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Intramolecular proton transfer reactions strongly coupled to the solvation dynamics of DMSO

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Quantitative study of mammalian gene expression based on transcriptional interactome model

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Atomic Structure and Electronic Properties of A₃ (A=H, He, and He)

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Photophysical property calculation of cycloparaphenylene(CPP) and carbon nanobelt(CNB) using long-range corrected DFT

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Reproduction of Experimental UV/Vis Absorption spectrum of Pyrene Excimer using Long-range Corrected DFT Calculation

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Photodissociation dynamics of methyl mercaptan (CH₃SH) in gas phase

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Characterization of Copper Nanoparticles Produced by Pulsed Laser Ablation in Liquids

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Synthesis of Ag@Lignin Hybrid nanocomposite using pulse laser irradiation

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Comparative Study on the Binding Characteristics between α-helix Mimetic Small Molecule/MCL-1 Complexes

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Intramolecular Charge Transfer Dynamics of Dyes inside AOT Reverse Micelles

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Frequency spectrum of Biological noise: A probe of non-classical reaction dynamics in living cells

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Do Osmolytes Impact the Structure and Dynamics of Myoglobin?

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Structural Colorations of Magnetoplasmonic Metamaterials for Colorimetric Sensing

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Exploring the Role of Magnetoplasmonic Assembly in Electrochemical Oxygen Reduction Reactions

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High-resolution rotational Raman spectroscopy of benzene

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CRASY: The High-Resolution Rotational Raman Spectra of trans-1,3-butadiene and Its Isotopologues in the Vibrational Ground State

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Super-resolution Stimulated Raman Scattering Microscopy

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Comparison between the Diffusion-Influenced Reaction from the Lattices Constants

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Hg(II)-Selective Probing of Flavin Mononucleotide Helix on Single-walled Carbon Nanotubes via Multimodal NIR Detection

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Classifying of Binding Affinities and Cooperative Behavior according to Ionic Charge of Various Surfactants on Single-walled Carbon Nanotubes

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Flavin-Functionalized Self-Assembled Monolayer Design for Individualized Single-Walled Carbon Nanotube Networks

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The effects of methylated cytosine on the formation of kink on highly bent DNA

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Observation of non-canonical bending tendency of DNA oligo using single molecule spectroscopy

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Shape Effect on the Refractive Index Sensitivity of Localized Surface Plasmon Resonance Inflection Points in Single Gold Nanocubes with Vertices
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A study on the determination of inorganic arsenic by solid phase extraction and fs LA-ICP-MS
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Influence of the Capping Material on Chemical Interface Damping Induced by Pyridine with Nitrogen in Single Gold Nanorods
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Development and validation of a sensitive Gas Chromatography-Combustion/isotope Ratio Mass Spectrometric method for anti-doping purposes
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Accurate measurement of total arsenic by considering arsenic species
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Polarization- and Wavelength-Dependent Defocused Scattering Imaging of Single Gold Nanostars with Multiple Long Branches
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Enantioseparation on 3,5-dinitrobenzoyl amino alcohol derived CSPs by high performance liquid chromatography and supercritical fluid chromatography.
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Sensitive and Selective Detection of Symmetric Dimethylarginine by Competitive Enzyme-Linked Immunosorbent Assay
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N-Doped Carbon Dots for Dual Mode Detection with Large Dynamic Range in analysis of Ag+ Ion
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Effect of aging on lipidomic changes in mouse serum, kidney, and heart
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Comprehensive analysis of polyglycerophospholipids by isotope-labeled methylation method
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Separation of plasma exosomes and lipoproteins using frit-inlet asymmetrical flow field-flow fractionation with multi-angle light scattering
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Optimization of nanoflow ultrahigh performance liquid chromatography (nUHPLC) conditions for high-throughput and rapid lipid analysis by ESI-MS/MS
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Investigation of changes in serum lipid levels upon the partial hepatectomy of swine in relation to the post-hepatectomy liver failure using nanoflow UHPLC-ESI-MS/MS
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Profiling of lipoproteins from post-menopausal patients with osteoporosis by asymmetrical flow field-flow fractionation and nUHPLC-ESI-MS/MS
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Charge effect of ATP on changing self-assembly mechanism of amyloidogenic proteins
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Cure Monitoring and Adhesion Characterization of Epoxy Powder Coatings using Time-Domain NMR Relaxometry

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Analysis of flame retardant content in fire proof coating

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Comparison of phase content analysis methods of gypsum

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One-pot Synthesis of Silicon Nanoparticles for Hyperpolarized 29Si Magnetic Resonance Imaging

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Biodegradable Microcapsule Studies Available in Industry and Bio-application

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Single Bubble Microextraction Coupled with Capillary Electrophoresis

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Facile method to fabricate viscoelastic nanocomposites based on supramolecular gels and boron nitride nanotubes via one-pot melt-blending

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HPLC-UV Determination of Resveratrol, Oxyresveratrol and Piceatannol from Wine

Jongsung Noh, JinSol Lee, Won Hoe Koo, Hyun-Woo Cho1, Seung Woon Myung
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1 Department of Natural Science Chemistry, Kyonggi University, Korea

Microextractin chromatography for determination of a mixture of 90Sr and 90Zr

Jihye Kim
Chemical Research Division, Korea Atomic Energy Research Institute, Korea

Development and validation of anabolic steroids screening method for anti-doping with gas chromatography/tandem mass spectrometry

Yinglan Xu, Kang Mi Lee, Jaeick Lee, Junghyun Son, Oh-Seung Kwon
Doping Control Center, Korea Institute of Science and Technology, Korea

Preparation of lithium iron pyrophosphate as cathode material for lithium ion battery

Chaewon Moon, Younggil Lee
Department of Chemistry, University of Ulsan, Korea

Enhanced electrochemical performance of LiFeBO3 cathode material via anion doped for lithium ion battery

Khoirul Umam, Younggil Lee
Department of Chemistry, University of Ulsan, Indonesia

Various Multi-Facet Gold Bipyramid Fabrication

Dong Hwan Nam, Seunghyun Lee1,*
1 Department of Nanochemistry, Gachon University, Korea

Electrochemical study of fluorine doped lithium vanadium borate as a cathode material for lithium ion battery

Youngil Lee1, Inyoung Lee*
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Infrared spectroscopic characterization of bile juices acquired from patients with gallbladder diseases

Eunjin Jang, Hoeil Chung1,*
Chemistry, Hanyang University, Korea
1 Department of Chemistry, Hanyang University, Korea

Spatially offset based Raman scattering-based line-mapping as means to determine sample particle size

Sang hoon Cho, Hoeil Chung1,*
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1 Department of Chemistry, Hanyang University, Korea

Feasibility of electrochemically modulated SERS measurement for improved differentiation of gallbladder diseases

Tung Vu, Eunjin Jang1, Hoeil Chung
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1 Department of Chemistry, Hanyang University, Korea

Superlocalization of Single Tumor Necrosis Factor-α
Molecules on Nano-Region Using 3D Enhanced Dark-Field Nanoscopy
**Seungah Lee**, Dongho Jang, Seong Ho Kang
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**ANAL.P-270**

Single-Molecule Nanocatalysis for Location Effect of Gold Nanoparticle on Carbon Nanotube
**Yingying Cao**, Jongyeon Yoon1, Seong Ho Kang1
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**ANAL.P-271**

Combined Anion and Nonionic Surfactants-based Micellar Electrokinetic Chromatography with Laser-induced Fluorescence Detection for Quantification of Native Capsaicinoids
**Yucheng Sun**, Seong Ho Kang1,*
*Department of Chemistry, Kyung Hee University, Korea*

**ANAL.P-272**

Synthesis, dispersion and tribological performance of alkyl functionalized graphene oxide and graphene-WS2 Composites as an oil lubricant additive
**Jong Seok Han**, Jin-Yeong Choi, Chang-Seop Lee
*Department of Chemistry, Keimyung University, Korea*

**ANAL.P-273**

Characteristics and Electrochemical Performance of Graphene/Carbon nanofiber/Silicon Composites as Anode Material for Binder-Free Lithium Secondary Batteries
**Ruye Cong**, Jin-Yeong Choi, Chang-Seop Lee
*Department of Chemistry, Keimyung University, Korea*

**ANAL.P-274**

An Synthetic Approach to Si/doped-Graphene Quantum Dots Nano-Architecture as anode for Li secondary batteries
**Hasan Jamal**, Jin-Yeong Choi, Chang-Seop Lee
*Department of Chemistry, Keimyung University, Korea*

**ANAL.P-275**

Control of Different Parameters on Synthesis of Gold Nanorods with High Aspect Ratio
**Sunghoon Yoo**, Seunghyun Lee
*Department of Nanochemistry, Gachon University, Korea*

**ANAL.P-276**

Proteomics Approach for Plasma Exosomes in Lung Cancer Patients
**Jihoon Shin**, Jinwook Lee, Min-gyu Youn, Miseon Jeong, Junghoon Kang, Wonryeon Cho1,*
*Department of Chemistry, Wonkwang University, Korea*

**ANAL.P-277**

A new approach for size determination of nanoparticles by single particle inductively coupled plasma-mass spectrometry (sp-ICP-MS)
**Yeon Hee Park**, Heung Bin Lim
*Department of Chemistry, Dankook University, Korea*

**ANAL.P-278**

A resistance study of serum-starvated neuroblatoma cell at specific drug concentration
**Sooyeon Chae**, Jong Yoon Han, Chae Eun Heo, Min Gyeongseo, MyungKook Son, Min Ji Kim, Hugh I. Kim, Chae Ri Park, Dongjoon Im, Chaehyeon Yoon, Hugh I. Kim
*Department of Chemistry, Korea University, Korea*

**ANAL.P-279**

Measurement of conversion yield of 7-dehydrocholesterol to previtamin D using liquid chromatography-mass spectrometry
**Jin Young Park**, Tae-Young Kim
*School of Earth Sciences and Environmental Engineering, Gwangju Institute of Science and Technology, Korea*

**ANAL.P-280**

High-throughput measurement of lipid turnover rates using 15T FT-ICR mass spectrometry
**Byoungsook Goh**, Tae-Young Kim1,*
*Department of Chemistry, Gwangju Institute of Science and Technology, Korea*

**ANAL.P-281**

Optimization of sample preparation methods for the multi-class chemical analysis of the deciduous teeth
**Jun young Park**, Sangwon Cha1,*
*Department of Chemistry, Hankuk University of Foreign Studies, Korea*

**ANAL.P-282**

Multi-element analysis of deciduous teeth by inductively coupled plasma mass spectrometry (ICP MS)
**Youngjoo Kal**, Sangwon Cha1,*
*Hankuk University of Foreign Studies, Korea*

**ANAL.P-283**

Implementation of LC-MS based proteomic analysis for investigating the tumorigenic roles of PAF in lung adenocarcinoma
**Jiwon Hong**, Dowoon Nam, Jingi Bae, Seunghoon Back, Su-Jin Kim, Sang-Won Lee
*Department of Chemistry, Korea University, Korea*

**ANAL.P-284**

Development of extensive global proteome and phosphoproteome profiling platform for effective proteogenomic analysis on human cancer tissue
**Dowoon Nam**, Sang-Won Lee
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**ANAL.P-285**

Proteogenomic analysis of diffuse-type gastric carcinogenesis induced by E-cadherin, p53, and Smad4 loss in mice
**Jingi Bae**, Su-Jin Kim, Sang-Won Lee
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**ANAL.P-286**
Label-free proteome profiling of ectopic and nonectopic fats related to type 2 diabetes mellitus
**Seunghoon Back**, Jingi Bae, Sang-Won Lee
Department of Chemistry, Korea University, Korea

Integrated Multi-Stage Data Analysis for Next-Generation Cancer Proteogenomics study
**Madar Inamul Hasan**, Sang-Won Lee
Department of Chemistry, Korea University, Korea

A mitochondrial proteome profile indicative of type 2 diabetes mellitus in skeletal muscles
**Su-Jin Kim**, Sang-Won Lee
Department of Chemistry, Korea University, Korea

Parallel Reaction Monitoring to Verify Biomarker Candidates for High-Risk Diabetes Mellitus
**Jiwon Ha**, Seunghoon Back, Sang-Won Lee
Department of Chemistry, Korea University, Korea

Highly sensitive fluorescent sensor based on novel coordinated amphiphilic polythiophene nanohybrids for triacetone triperoxide explosive detection
**Salah Mahmoud Tawfik Ahmed**, Yong-ill Lee
Department of Chemistry, Changwon National University, Korea

Mechanism of trinitrophenol explosive detection with novel multiple emitting quantum dots coated with amphiphilic conjugated polythiophenes
**Sarvar Kakhkhorov**, Salah Mahmoud Tawfik Ahmed1, Yong-ill Lee1
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Development of melamine specific bioreceptor using phage-display and their verification
**ChanYeong Park**, Seung Hoon Back, Tae Jung Park
Department of Chemistry, Chung-Ang University, Korea

Development of Novel Upconversion Nanoparticles Functionalized with Amphiphilic Polymers for detection of Alprenolol
**Seung Ha Lee**, Salah Mahmoud Tawfik Ahmed, Yong-ill Lee
Department of Chemistry, Changwon National University, Korea

Detection of C18-ceramide through a novel μPAD coupled with mass spectrometry
**Shavkatjon Azizov**, Sharipov Mirkomil, Salah Mahmoud Tawfik Ahmed, Huy B.t., Huy B.t., Yong-ill Lee
Department of Chemistry, Changwon National University, Korea

Novel zwitterionic fluorescent polythiophene sensor for E.coli. detection
**Jimin Shim**, Salah Mahmoud Tawfik Ahmed, Yong-ill Lee
Department of Chemistry, Changwon National University, Korea

Gold nanostar-based SERS substrate for pesticide analysis
**Hung Thai viet**, Huy B.t.1, Yong-ill Lee1
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Nonionic alginate-coated upconversion nanoparticles functionalized with folic acid for selective NIR-imaging and pH-responsive drug delivery
**Sharipov Mirkomil**, Salah Mahmoud Tawfik Ahmed, Huy B.t., Yong-ill Lee
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Graphene oxide as a peroxidase mimetic catalyst for detection of Cr(VI) ions
**Nguyen Ngoc Nghia**, Huy B.t.1, Yong-ill Lee1
Changwon National University, Korea

Picogram detection of nitro-explosive compound using multiple emitting Polythiophenes-Coated CdTe QDs
**Mohamed Ragab Elsayed Ali**, Salah Mahmoud Tawfik Ahmed1, Yong-ill Lee1
Changwon National University, Egypt

New Ru(ter-py)(dmo-bpy)Cl redox complex for glucose dehydrogenase based glucose biosensor
**Ryang hyeon Kim**, Hyewon Jang, Subin Park, Won-Yong Jeon, Young Bong Choi, Hyug-Han Kim
Department of Chemistry, Dankook University, Korea

Advanced studies of antibiotic peptides using solid-state NMR
**Jinyoung Son**, Yu Young Song1, Ji-Ho Jeong1, Yongae Kim1
Department of Chemistry, Hankuk University of Foreign Studies, Korea

Classification and spectral characteristics of chemical agents by using a deep UV stand-off Raman spectroscopy
**Young-Su Jeong**, Jun oh Lee
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NMR structural studies of mutations in...
transmembrane proteins related with human diseases

**Soyeon Jo**, Ji-Ho Jeong\(^1\), Yongae Kim\(^1\)

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**Hae-Wook Yoo**, So Jung Lee, Kuktae Kwon, SeungHee Kim
Agency for Defense Development, Korea

**Analysis of Quaternary Ammonium Compounds (QACs) by Liquid Chromatography-Mass Spectrometry**

**Hyeri Kim**, Han Bin Oh\(^1,\*)

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**Nano-DESI mass spectrometry (MS) source-coupled digital microfluidics system**

**Jae-ung Lee**, Han Bin Oh
Department of Chemistry, Sogang University, Korea

**Toward the construction of the hazardous accident site gas database using a TD-GC/MS method**

**Eun Woo Choi**, Han Bin Oh
Department of Chemistry, Sogang University, Korea

**Free radical initiated backbone dissociation of peptides conjugated with p-TEMPO-Benzyl Succinic Acid**

**Sang Tak Lee**, Han Bin Oh
Department of Chemistry, Sogang University, Korea

**Developing Gas Mixing System for Preparing Standardized Gas Mixture to Properly Analyze Toxic Gases Generated from the Fire**

**Hwayong Jang**, Han Bin Oh
Department of Chemistry, Sogang University, Korea

**Simultaneous quantitative analysis of a large number of VOCs with a multitude of isotope-labelled internal standards using a headspace GC-MS**

**Jee Seon Moon**, Han Bin Oh\(^1,\*)

Sogang University, Korea
\(^1\)Department of Chemistry, Sogang University, Korea

**Practical purification methods to obtain human melanocortin-4 receptor related to obesity for structural studies using NMR spectroscopy**

**Minseon Kim**, Ji-Ho Jeong, Yongae Kim
Department of Chemistry, Hankuk University of Foreign Studies, Korea

**Automated cold volume calibration of temperature variation in cryogenic hydrogen isotope sorption isotherm**

**Jaewoo Park**, Minji Jung, Hyunchul Oh\(^1,\*)

Department of Energy Engineering, Gyeongnam National University of Science and Technology, Korea
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**Oligomerization of tau protein mediated by electrostatic interaction with ATP**

**Jong yoon Han**, Chae Eun Heo, MyungKook Son, Dongjoon Im, Gyeongseo Min, Sooyeon Chae, Chae Ri Park, Min Ji Kim, Paul Valery Migisha Ntwali, Hugh I. Kim
Department of Chemistry, Korea University, Korea

**Solution state structure of the mimetic Apo B-100 peptides(B) derived from immunoglobulin antigen by NMR**

**Nayoung Lee**, GilHoon Kim, Hoshik Won\(^1,\*)

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**Graphene Oxide based fluorescent nano-sensor for miRNA with high specificity**

**Bomi Shin**, Jieon Lee\(^1,\*)

Department of Toxicology Evaluation, Konyang University, Korea
\(^1\)Predictive toxicology department, Korea institute of toxicology, Korea

**Synthesis and characterization of magnetic-viral Janus nanoparticles**

**Hui Wu**, Ki-Jae Jeong\(^1\), Jaebeom Lee\(^2,\*)

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\(^1\)Department of Cogno-Mechatronics Engineering, Pusan National University, Korea
\(^2\)Chemistry, Chungnam National University, Korea

**Chemiluminescent probes-based paper strips for detection of influenza**

**Jinsol Han**, Sharipov Mirkomi\(^1\), Yong-ill Lee\(^1\)

Chemistry, Changwon National University, Korea
\(^1\)Department of Chemistry, Changwon National University, Korea

**Ag@Fe3O4 nanoparticles with chiral ligands**

**Junyoung Kwon**, Dong-kyu Lee, Jaebeom Lee\(^1,\*)

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SERS-based microdroplet system for high-throughput gradient analysis

Jinhyeok Jeon, Kyoung Neon Kim¹, Jaebum Choo¹
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¹Department of Chemistry, Chung-Ang University, Korea

Fabrication of PEGylated Au@Ag core-shell nanoparticles for SERS imaging of multiple biomarkers expressed on cancer cells

Namhyun Choi, Jaejeung Dang¹, Jaebum Choo¹
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Highly sensitive molecular diagnostics using SERS-PCR for Bacillus anthracis detection

Yixuan Wu, Younju Joung, Sohyun Park, Jaebum Choo
Department of Chemistry, Chung-Ang University, China

Metabolomic analysis of human blood associated with ambient particulate matter in air pollution

Seoyoung Jang, Geum-Sook Hwang
Integrated Metabolomics Research Group, Western Seoul Center, Korea Basic Science Institute, Korea

Metabolic profiling of plasma and urine from a randomized trial on the effects of dietary patterns.

Sunhee Jung, Do Hyun Ryu¹, Geum-Sook Hwang
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Optical Anisotropy of Core-Shell or Yolk-Shell Ag@Fe3O4 Nanochains

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Magnetic nanozyme linked colorimetric assay for rapid diagnosis of infectious disease

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Tuning plasmonic properties of 0-3D metastructure with self-assembled magnetoplasmonic nanoparticles

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Optical analysis of degree of deacetylation in chitosan

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Synthesis of whitlockite nanoparticles in tri-solvent system as novel bone regenerative materials

Caifeng Wang, Ki-Jae Jeong, Jaebom Lee¹*
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Electrochemical Immunosensor using Nanotriplex of Graphene Quantum Dots, Fe3O4, and Ag Nanoparticles for Tuberculosis

Lemma Teshome Tufa, Jaebom Lee¹*
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Fabrication and Application of Microfluidic Devices to Test the Phototoxicity of Cosmetic Ingredients

Tian Tian, Sujin Cho, Seog Woo Rhee
Department of Chemistry, Kongju National University, Korea

Stepwise Intact Protein Analysis for Quality Assessment of Therapeutic Glycoprotein with Complex Glycoform

Myung Jin Oh, Nari Seo, Hyun Joo An
Graduate School of Analytical Science and Technology, Chungnam National University, Korea

Development anti-oxidant chemical compound from natural product and identification of its mechanism

TaeYeong Park, Dong-Ku Kang¹*
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¹Department of Chemistry, Incheon National University, Korea

Absolute Quantitation of Non-Human Glycan (Neu5Gc) in Human Biopsy Tissue by LC/MRM-MS

Nari Seo, Myung Jin Oh, Hyun Joo An
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Ultrasound-controlled chiral separation of four amino acids and 2,2,2-trifluoro-1-(9-anthryl)ethanol

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¹Department of Chemical Education, Kyungpook National University, Korea
Engineering a periplasmic binding protein for amino acid sensors with improved binding properties
Hyunsoo Lee*, Yunjoo Cho
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1Chemistry, Sogang University, Korea

Genetic Incorporation of Biosynthesized L-dihydroxyphenylalanine (DOPA) and Its Application to Protein Conjugation
Sang kil Kim, Hyunsoo Lee
Department of Chemistry, Sogang University, Korea

3D imaging of cancer cell mitosis with upconversion nanoparticles
Seonjong Kim, Kang Taek Lee1,2
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Construction and Application of Bipyridine-functionalized G-quadruplexes
Rio Yanagitani, Soyoung Park, Hiroshi Sugiyama
Department of Chemistry, graduate school of science, Kyoto University, Japan

Characterizing Hetero-oligomer from Amyloid-beta and Alpha-synuclein with Bio-AFM
Eun Ji Shin, Joon Won Park
Department of Chemistry, Pohang University of Science and Technology, Korea

Quantification of Tumor-associated Circulating Free DNA with Atomic Force Microscopy
Woo Cheol Shim, Joon Won Park
Department of Chemistry, Pohang University of Science and Technology, Korea

Quantitative Analysis of LIMK1 in a Single Cell with Atomic Force Microscopy
Ji-seon Lim, Joon Won Park
Department of Chemistry, Pohang University of Science and Technology, Korea

Methodology Development of Screening Weak Binders by Using NMR Spectroscopy
Yoonjin Um, Young Kee Chae
Department of Chemistry, Sejong University, Korea

Construction of Auto-Inducible Promoters for Recombinant Protein Production
Hakbeom Kim, Young Kee Chae1,*
Antibacterial nanoparticles: enhanced antibacterial efficiency of coral-like crystalline rhodium nanoplates

Hyuk Seung Han, Kyungtae Kang

Thermochromic indicator for determination of optimal fruit taste

Yong-Hoon Kim, June Hyuck Park

Photodynamically assisted chemotherapy by drug/photosensitizer co-loaded silica nanoparticle coated with \( \text{O}_2\)-labile polymer

Junseok Lee, Won jong Kim

Self-degradable Graphene Nanomedicine Operated by DNAzyme for Cancer Therapy and Clearance

Hyori Lee, Junseok Lee, Won jong Kim

pPBA@\text{TiO}_2\)-doxorubicin nanoparticles for targeted chemo-sonodynamic therapy of cancer

Seonil Kim, Sooseok Im, Junseok Lee, Won jong Kim

Enzyme-responsive Polymeric Micelles by Controlled Depolymerization for Anti-cancer Drug Delivery

Jaehyun Park, Won jong Kim

A T7 autogene-based hybrid mRNA/DNA system for long-term shRNA expression in cytoplasm without inefficient nuclear entry

Hyung Jun Ahn

Extracellular matrix delivery for tissue regeneration

Huong Thanh Nguyen, Kilyong Lee, Kwanwoo Shin

Multi-component Extracellular Matrix (ECM) Formation for 3D Cell Culture

Agustina Setiawati, Huong Thanh Nguyen, Sungwoo Jeong, ChangHo Kim, Kwanwoo Shin

Development of HSP90\beta Protolytic Targeting Chimera (PROTAC) Protein Degrader

YeongMok Kim, Sang Jeon Chung

Structural basis for low catalytic activities in the two minor beta-carbonic anhydrases from the filamentous fungi Aspergillus fumigatus

Najin Kim, Songwon Kim, Mi Sun Jin

Enhancement antigen binding affinity of scFv-protein nanocage with SpyCatcher/SpyTag system

Park Sunhee, Sang Jeon Chung

Identification of protein tyrosine phosphatase 1B inhibitors as antidiabetic drugs

Seung Oh Seo, Sang Jeon Chung

Structure, Dynamics, and Hyperthermostability of Acyl Carrier Protein from \( \text{Thermotoga maritima}\)

Yeongjoon Lee, Yangmee Kim

12-meric promising novel peptide antibiotic candidate for the treatment of Gram-negative sepsis

Jieun Kim, Yangmee Kim

Psychrophilic Cold Shock Protein has Tyrosine in its Hydrophobic Core: Key Determinant of the Low Thermostability

Yeongjoon Lee, Yangmee Kim

Natural TLR2 antagonist phloretin suppresses TLR2-mediated Inflammation

Jieun Kim, Yangmee Kim
Development of a real-time FRET detection system for amyloid-β plaque formation towards therapeutic treatment of Alzheimer disease.
Sang Jeon Chung, Yeon Gyo Hwang
College of Pharmacy, Sungkyunkwan University, Korea
1Pharmacy, Sungkyunkwan University, Korea

Synthesis of a Label-Free Föster Resonance Energy Transfer Probe for the Detection of Mouse double minute 2 homolog (MDM2) and B-cell lymphoma 2 (Bcl-2).
A Ro Han, Sang Jeon Chung
Sungkyunkwan University, Korea
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Identification of Polyphyllin D as a Selective Inhibitor of SHP2 Against the Non Receptor PTPs
Se Jeong Kwon, Sang Jeon Chung
College of Pharmacy, Sungkyunkwan University, Korea

Amyloid fibril formation of fusion protein (ERLBD302-552-L23-αSyn) in the presence of ERLBD ligands
Dawon Lee, Lee Kyunghee
Department of Chemistry, Sejong University, Korea

The Structure and Substrate Specificity of Propionibacterium acnes β-ketoacyl Acyl Carrier Protein Synthase III
Dasom Cheon, Yeongjoon Lee, Yangmee Kim
Department of Biotechnology, Konkuk University, Korea

Hypoxia-Triggered Transforming Immunomodulator for Cancer Immunotherapy via Photodynamically Assisted Antigen Presentation of Dendritic Cell
Sooseok Im, Won jong Kim
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Purification and identification anti-inflammatory peptides derived from tIK derivatives
Hyunjun Jang, Yongae Kim
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Antidiabetic effect of DH049 via inhibition of the protein tyrosine phosphatase PTPN11
Dohee Ahn, Do Hwi Kim, Sang Jeon Chung
Pharmacy, Sungkyunkwan University, Korea
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Development of Selective S1P1 Receptor Agonists for Treatment of Multiple Sclerosis
Eun Ji Cha, Yong Seo Cho, Ki Duk Park, Sang Min Lim
Department of Chemistry, Korea University, Korea
1Center for Neuromedicine, Korea Institute of Science and Technology, Korea

Synthesis of all cases of caffeoylquinic acid via protected quinic acid
Jinwoo Seo, Sang Jeon Chung, Hyeyeon Jun
Department of Pharmacy, Sungkyunkwan University, Korea
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Synthesis and structural investigation of cyclosporin O derivatives and its structure-permeability relationship (SPR) study
Dongjae Lee, Jiwon Seo
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Structural insights into catalytic mechanisms of the two major beta-carbonic anhydrases from the fungal pathogen Aspergillus fumigatus
Subin Kim, Mi Sun Jin
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Histidine-containing antimicrobial peptoids
Minsang Kim, Jiwon Seo
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Targeting NHR2 domain of AML1-ETO via bivalent peptides.
Daseul Ko, Hyun-Suk Lim
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Two Color, Cell-based on-bead Screening for Discovering Ligands of the Viral G Protein-Coupled Receptor
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1Department of Chemistry, Pohang University of Science and Technology, Korea

Clustering Effect of Interleukin-1 Receptor Antagonist on the Ferritin Nanocage
Ga Hyeon Kim, Sang Jeon Chung
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1College of Pharmacy, Sungkyunkwan University, Korea

Assessment of Cell Permeability of Bicyclic Peptoids
Wang Heemyeong, Hyun-Suk Lim
Synthesis and Conformational Studies of Cyclic α-ABpeptoids

Eun-Kyoung Jee, Hyun-Suk Lim
Department of Chemistry, Pohang University of Science and Technology, Korea

Comparison of Cell Permeability of α-ABpeptoids and Peptides

Min-Jae Kang, Hyun-Suk Lim
Department of Chemistry, Pohang University of Science and Technology, Korea

Spatiotemporal proximity crosslinking by light activation (Spot-light) reveals RNA processing machinery on the mitochondria in live cells.

Myeong-Gyun Kang, Hyun-Woo Rhee
Department of Chemistry, Ulsan National Institute of Science and Technology, Korea
1Department of Chemistry, Seoul National University, Korea

Global topology analysis of the permeable outer mitochondrial membrane by isotope-coded phenoxyl radical labeling in live cells

SongYi Lee, Jong-Seo Kim1,*, Hyun-Woo Rhee
Chemistry, Seoul National University, Korea
1Seoul National University, Korea
Poster Presentation

Organic Chemistry Poster Presentation
April 18 (Thu), Exhibition Hall 2

**ORGN.P-140**

Ferroelectric Switching Property of a 1,2,3-Triazole-based Helical Columnar Liquid Crystal
Byoung-Ki Cho*, **Manh Linh Nguyen**
Department of Chemistry, Dankook University, Korea

**ORGN.P-141**

Selective C–C Bond Formation from Rhodium-Catalyzed C–H Activation Reaction of 2-Arylpyridines with 3-Aryl-2H-azirines
**Sang Hoon Han**, Phil Ho Lee
Department of Chemistry, Kangwon National University, Korea

**ORGN.P-142**

Potential-Dependent Electrochemiluminescence for Selective Molecular Sensing of Cyanide
**Taemin Kim**, Jong-in Hong
Division of Chemistry, Seoul National University, Korea

**ORGN.P-143**

Porphyrinoids Containing Exocyclic Double Bonds at meso-Positions: meso-Indanedionyl-dibenzihexaphyrins and Thia-(p-benzi)porphyrin
Chang Hee Lee*, **Seong-Jin Hong**
Department of Chemistry, Kangwon National University, Korea

**ORGN.P-144**

Chang Hee Lee*, **Ranjit Dutta**
Department of Chemistry, Kangwon National University, Korea

**ORGN.P-145**

Development of Blue Thermally Activated Delayed Fluorescence Emitters Using Modulated Triazine Electron Acceptors.
**Youngnam Lee**, Jong-in Hong¹,*
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**ORGN.P-146**

BODIPY-Based Electrochemiluminescence Probes for Rapid Detection of Hydrogen Peroxide
**Yon Namkoong**, Jong-in Hong¹,*
Department of Chemistry, Seoul National University, Korea
¹Division of Chemistry, Seoul National University, Korea

**ORGN.P-147**

Asymmetric Synthesis of cis-5-Aminomethyl-3-(4-methoxyphenyl)-dihydrofuran-2(3H)-one
**Sonhwan Kim**, Won Koo Lee¹,* Hyun-Joon Ha²,*
Chemistry, Hankuk University of Foreign Studies, Korea
¹Department of Chemistry, Sogang University, Korea
²Department of Chemistry, Hankuk University of Foreign Studies, Korea

**ORGN.P-148**

Metal-Free Aza-Claisen Type Ring Expansion of Vinyl Aziridines: An Expeditious Synthesis of Seven Membered N-Heterocycles
**Deepak Singh**, Hyun-Joon Ha¹,*
Chemistry, Hankuk University of Foreign Studies, Korea
¹Department of Chemistry, Hankuk University of Foreign Studies, Korea

**ORGN.P-149**

New self-assembled molecular capsule base on the hydrogen bonding of sulfonamido moiety
**Yang Ryeong Kim**, Yeon Sil Park, Kyungsoo Paek
Department of Chemistry, Soongsil University, Korea

**ORGN.P-150**

Green synthesis and characterization of gold nanoparticles (Au NPs) from extract of fruit Schisandra chenesis: Catalytic activity studies towards the synthesis of chromeno[2,3-d]pyrimidin-2-yl)phenol derivatives
**Sandip gangadhar Balwe**, Yeon Tae Jeong
Department of Display Engineering, Pukyong National University, Korea

**ORGN.P-151**

Acid-mediated one-pot four-component domino protocol for the construction new indole and coumarin containing pyridine-3-carbonitrile derivatives
**Sandip gangadhar Balwe**, Yeon Tae Jeong, Maruti Yadav
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**ORGN.P-152**

Indium chloride catalysed one-pot, three-component synthesis of spiro triazolo[1,2-a]indazole-tetraone derivatives
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**ORGN.P-153**

Water soluble Nano Particles for Effective Drug Delivery in Photodynamic Therapy
**Yang Liu**
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**ORGN.P-154**

A thiazolium-based organic catalyst for the efficient utilization of atmospheric carbon dioxide
**Hae-Jo Kim**
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**ORGN.P-155**

**Seung Hyeon Kim**, Sung Kuk Kim
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Synthesis of a crown ether strapped-hexapyrrolic calix[4]pyrrole with amide linkage and its anion and ion pair recognition

**Nam Jung Heo**, Sung Kuk Kim
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A tripodal heteroditopic receptor for anions, cations, and ion pairs

**Juho Yang**, Sung Kuk Kim
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New Macrocyclic Ion Pair Receptors Based on Indole Amides and Pyridines

**Han-byebol Choi**, Sung Kuk Kim
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Phenanthroline-Strapped Calix[4]pyrroles as Highly Selective Receptors for the Bicarbonate Anion and the Lithium Chloride Ion Pair

**Juhyun Oh**, Sung Kuk Kim
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Small molecular cages as Anion Receptors with High Selectivity for the Fluoride Anion

**Hye Jin Han**, Sung Kuk Kim
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Melanosome targetable tyrosinase-selective ratiometric probe

**Sun Young Park**, Min Hee Lee
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Synthesis of coumarin-appended naphthalimide fluorescence probe for sensing and distinguishing hydrogen sulfide from other biothiols

**Shin A Yoon**, Min Hee Lee
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An efficient resorufin-based fluorescent Off-On probe for selective detection of nitroreductase in bacteria

**Jung Won Yoon**, Min Hee Lee
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Mitochondrial NAD(P)H targetable red-emitting fluorescent probe and its application in real-time monitoring of live cells

**Jin Hui Joo**, Sun Young Park, Min Hee Lee
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A fluorescent naphthalimide bearing thiosemicarbazide as a ratiometric fluorescent probe for the detection of nitric oxide

**Sujung Kim**, Sun Young Park, Min Hee Lee
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Acrylamide-coumarin-benzaldehyde as a turn-on fluorescent probe providing an enhanced water solubility for detection of cysteine and homocysteine

**Min Jung Chang**, Min Hee Lee
Department of Chemistry, Sookmyung Women’s University, Korea

A Series of Guanidine Conjugates with NSAID

**Ju Mi Lee**, Jeong Tae Lee
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Syntheses and Biological Activities of Resveratrol Analogs with Nitrogen

**Lee Seul Park**, Jeong Tae Lee
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Bioactive Homoisoflavonoids: Synthesis and Antiinflammatory Activity

**Damodar Kongara**, Jong-Gab Jun, Jeong Tae Lee
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Visible-Light Photocatalyzed Deoxygenation of N-Heterocyclic N-Oxides

**Kyu Dong Kim**, Jun Hee Lee
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Metal-free Formylation of Amines

**Seul Chan Lee**, Hye-Young Jang
Department of Energy System, Ajou University, Korea

Tosyl Hydrazine-Promoted Tandem Condensation and Cyclization of Acyl Azobenzenes Enabling Access to 2H-Indazoles under Metal-Free Aerobic Conditions

**Seungcheol Lee**, Sang Hoon Han, Younghyeon Baek, Phil Ho Lee
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Synthesis of Diaryl Ketones through Oxidative
Cleavage of the C–C Double Bonds in \( N \)-Sulfonyl Enamides

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Regioselective Synthesis of Indolopyrazine via a Sequential Rh-Catalyzed Formal \([3 + 3]\) Cycloaddition and Aromatization Reaction of Diazoinolinimines with Azirines

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One-Pot Synthesis of Indolizines Derivatives through Sequential Rh-Catalyzed \([2 + 1]\)-Cyclopropanation, Pd-Catalyzed Ring Expansion, and Oxidation Reactions from Pyridotriazoles and 1,3-Dienes

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Synthesis of Bicyclic Isothiazoles via Intramolecular Rh-Catalyzed Transannulation of Cyanothiadiazoles

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Synthesis of Imidazopyridines via a Copper-Catalyzed, Formal Aza-[3 + 2] Cycloaddition Reaction of Pyridine Derivatives with \( \alpha \)-Diazooxime Ethers

**Juyoung Heo**, Gi Hoon Ko, Gi Uk Han, Phil Ho Lee
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Synthesis of Azepinoindoles via Rhodium-Catalyzed Formal Aza-[4 + 3] Cycloaddition Reaction of 3-Diazoindolin-2-imines with 1,3-Dienes in One-Pot

**Sejin Jang**, Chanyoung Maeng, Sang Hoon Han, Phil Ho Lee
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Pyrazinoindole-Based Lewis-Acid/Base Assembly: Intriguing Intramolecular Charge-Transfer Switching through the Dual-Sensing of Fluoride and Acid

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Transfer Hydrogenation of Carbonates in Glycerol

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Synthesis and Activity Evaluation of Materials having excellent Liver cancer prevention and Anti-cancer activity

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Synthesized Curcumin Derivatives Target to \( \beta \)-amyloid Plaque by Optical Imaging of the Eye.

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Helical Columnar Assemblies of Discotic liquid crystals based 1,2,3-triazole depending on chain structure

**Youngmin Lee**, Byoung-Ki Cho
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Synthesis and modification of hetero-functionalized internal alkynes

**SeoYoung Jeong**, Sung You Hong
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Regioselective synthetic strategy of \( \beta \)-hydroxy sulphones

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Visible-light-promoted synthesis of biaryl compounds

**Boseok Hong**, Anna Lee
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Intramolecular Energy Transfer based Ir(III) Photosensitizer for Inducing Mitochondrial Oxidative Stress and Monitoring Response

**Chaiheon Lee**, Jung Seung Nam, Tae-Hyuk Kwon
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\( s \)-Triazine Based Oxidized Carbon Nitride: Directly \( ^{64} \)Cu-Chelatable for PET Imaging

**Chul Hee Kim**, Chan Ho Park, Kyo-Chul Lee\(^1\,^*\), Dong Wook Kim\(^2\,^*\)
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Study of Charge Transfer Dynamics in Dyes with Vibrational Spectroscopy and Computational Method

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Simple and Practical Synthetic Procedure for Amides from Trichloroethyl Esters Using 1,5-diazabicyclo[4.3.0]non-5-ene

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Efficient Direct Synthesis Thioesters from Aldehyde Using Dibromoisocyanuric Acid

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Serendipitous Synthesis of 14H-Pyrano[2,3-h,6,5-h]diquinoline

Youngchan Bang, Bongji Moon  
Department of Chemistry, Sogang University, Korea

Practical and Simple Iron-mediated Transformation of Alcohol using 2-Diphenylmethoxypyridine into Diphenylmethyl Ethers

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Asymmetric Allylation Reaction Catalyzed by a Chiral Lewis acid

Taehyeong Kim, Do Hyun Ryu  
Department of Chemistry, Sungkyunkwan University, Korea

Preparation and Characterization of Novel Histone Deacetylase (HDAC) Inhibitors Containing Biaryl Benzamide Units

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Properties of polymers based on thiazolo[5,4-b]pyridine as electron-withdrawing unit applied to the flexible polymer solar cell

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Property of thiazolo[5,4-b]pyridine as electron-withdrawing groups in the polymer solar cells

Juwon Kim, Hongsook Suh¹*
Hydrogen bonding mediated Hexameric self-assembly of porphyrin dimer

**Hyun Jun Park**, Hosooowi Lee, Woo-Dong Jang
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Asymmetric Friedel–Crafts Reaction of 3-Indolylsulfamidates with Indoles for the construction of enantioenriched bisindolylmethane sulfamates

**Yerin Kim**, Sung-Gon Kim
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Asymmetric [3+3] cycloaddition of donor–acceptor aziridines with N,N-dialkyl-3-vinylanilines for the stereoselective synthesis of highly functionalized enantioenriched tetrahydroisoquinolines

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Fluorescence Probe based on ESIPT: Selective Detection of Cysteine existed in Mitochondria

**Kyeong-Im Hong**, Woo-Dong Jang
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[Withdrawal] Interfacial Photopolymerization by Xanthene Dyes towards Colorimetric Detection

**Young Jae Jung**, JungKyu Lee
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Aerobic α-Oxidation of N-Substituted Tetrahydroisoquinolines to Dihydroisoquinolones

**Kim Christopher Aganda**, Anna Lee
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Efficient preparation method of 4-hydroxybenzoic esters – Oxidation of substituted Hagemann’s ester

**Aleksii Golikov**, Dahye Kim, Sangho Koo
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Synthesis of efficient units for the carotenoid wire containing phenyl substituents.

**Bo-ram Lim**, Sangho Koo
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Heterocyclic Compounds Generation by using Mn(Ⅲ)/Co(Ⅱ) Catalyzed Oxidative Deacetylation

**Tingshu Wang**, Sangho Koo
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Fast Assembly and High-Throughput Screening of Structure and Antioxidant Relationship of Carotenoids

**Dahye Kim**, Sangho Koo
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One-pot Synthetic methods from Reducing Sugar to Pyrrolo-lactone compound.

**Soohyeon Cho**, Sangho Koo
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High Throughput Screening of Structure and Antioxidant Relationship of Carotenoids.

**Gaosheng Shi**, Sangho Koo
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Synthesis of unnatural carotenoids with good electrical properties

**Huijung Yang**, Sangho Koo
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The application of Mn(Ⅲ)/Co(Ⅱ) Catalyzed Oxidative Deacetylation In Important Heterocyclic Compounds Synthesis

**Hui Jun**, Sangho Koo
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Investigation of Hypervalent λ3- and λ5-Aryliodines as 18F-Labeling Precursors to Produce [18F]Aryl Fluorides

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Structural Tuning of Biomimetic Hydrogen Bonding and Tautomer Equilibrium for Reaction-Based Fluorescence Turn-On Detection of Cyanide Ion

**Hyunchang Park**, Dongwhan Lee
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Synthesis, Crystal Structure and Hirshfeld Surface Analysis of 1,2-bis(2',6'-diisoproxy-[2,3'-bipyridin]-6-yl)benzene

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Green and Recyclable Catalyst for N-oxidation of Pyridine using Hydrogen Peroxide
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A Synthesis of Degradable Poly (styrene-block-ethylene glycol) with Triarylphosphine by the Staudinger Ligation
Yerin Kim, Myungwoong Kim, Dong Wook Kim
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Complementary binding of self-folding cavitand with 2-hydroxy benzamide moieties
Saegyo Jung, Yeon Sil Park, Kyungsoo Paek
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Synthesis of doubly dendronized polymers with polyglycerol and polylysine dendrons
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Selective detection of Protein Tyrosine Phosphatase 1B by intrinsic Förster Resonance Energy Transfer (iFRET)
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A Highly Stereoselective Cyclocarbonylation of Allenyl Glyoxylate: Directed Toward a Synthesis of (±)-Cyclocalopin E
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A Molecular Rotor Probe for Endoplasmic Reticulum Local Viscosity Fluorescence Lifetime Imaging of Reticulophagy
Jinwoo Shin, Jiseon Kim, Jusung Ahn, Hyeong Seok Kim, Ji Hyeon Kim, Subin Son, Myung Sun Ji, Wonseok Choi, Jongseung Kim
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Synthesis and Development of 5-Fluorouracil Derivatives from 5-Fluorouracil
Ha Junhun, Jong Hyun Cho
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Small molecule-based prodrug for liver cancer therapy
Myung Sun Ji, Jinwoo Shin, Hyeong Seok Kim, Subin Son, Ji Hyeon Kim, Jusung Ahn, Jiseon Kim, Jongseung Kim
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Synthesis of 1,3,5-Triazacyclohexanes and Acid-degradable Cationic Polyacrylates as siRNA Delivery Vehicles
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Facile Synthesis of Naturally Occurring (±)-Hypoxylactone through Allenoate Aldol Reaction: Correction of Stereochemical Relationship
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Preparation and photochromic reaction of spiropyran-sulfonate containing methoxy group
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Preparation and Spectroscopic Properties of Spiropyran-Anthracene Dyad
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Preparation and Colorimetric Metal Cation Detection of Rhodamine-thiophene
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Preparation and photophysical properties of spiropyran-sulfonate containing nitro group
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Coumarin-decorated Schiff base as a ratiometric fluorescent probe for monitoring hypochlorite in Endoplasmic Reticulum
Hyeong Seok Kim, Jusung Ahn, Jinwoo Shin, Subin Son, Jiseon Kim, Myung Sun Ji, Ji Hyeon Kim, Wonseok Choi, Inseob Shim, Jongseung Kim
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Enantioselective [4+1]-Cycloannulation of ortho-Quinone Methides with Diazoesters.
Seungtae Kim, Do Hyun Ryu
Department of Chemistry, Sungkyunkwan University, Korea

Coumarin-based Fluorescent sensor triggered by Schiff Base Hydrolysis for the Sensitive Detection of H2O in Organic Solvents

Jusung Ahn, Hyeong Seok Kim, Jinwoo Shin, Inseob Shim, Subin Son, Jiseon Kim, Ji Hyeon Kim, Myung Sun Ji, Wonseok Choi, Jongseung Kim
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Drug-containing Zirconium Carbide as a Platform for a New Bio-optical Nanoparticle that can Effectively Treat Cancer

Inseob Shim, Subin Son, Jiseon Kim, Ji Hyeon Kim, Hyeong Seok Kim, Myung Sun Ji, Jusung Ahn, Jinwoo Shin, Wonseok Choi, Jongseung Kim
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Binary reinforced first small molecule based COX-2 specific theranostic system for synergistic anti-cancer effect

Wonseok Choi, Hyeong Seok Kim, Jinwoo Shin, Inseob Shim, Subin Son, Jiseon Kim, Myung Sun Ji, Ji Hyeon Kim, Jusung Ahn, Jongseung Kim
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Glycyrrhetinic acid-Modified Small Molecular pH Responsive NIR imaging Probe for Hepatocellular Carcinoma (HCC)

Ji Hyeon Kim, Jinwoo Shin, Hyeong Seok Kim, Inseob Shim, Subin Son, Jiseon Kim, Myung Sun Ji, Jusung Ahn, Wonseok Choi, Jongseung Kim
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A Bioorthogonal Two-Photon Fluorescent Probe for tracking a mitrochondrial nitroxy formation

Jiseon Kim, Myung Sun Ji, Ji Hyeon Kim, Jinwoo Shin, Inseob Shim, Wonseok Choi, Jusung Ahn, Subin Son, Jongseung Kim
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Detection of the over-expressing NQO1 levels in cancer using chemiluminescent probe.

Subin Son, Hyeong Seok Kim, Jinwoo Shin, Inseob Shim, Myung Sun Ji, Jusung Ahn, Wonseok Choi, Jongseung Kim
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Synthesis and Characterization of Structurally Different Pyrazine Derivatives and Investigation of Their Optical and Electrochemical Properties for Optoelectronic Applications

Dong Jin Park, Sun Hwa Jung, Young Dae Gong
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Derivatization of dopamine molecules for poly(dopamine) applications

Sangdon Choi, JeongWoo Hong, Yeonwoo Jeong, Sung Min Kang, Min Kim
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Photodeprotection for Second Trigger of Poly(dopamine) Coating

Ahrom You, Yeonwoo Jeong, Sung Min Kang, Min Kim
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Europium Catalysis: Eu²⁺/Eu³⁺-based Aerobic Oxidation of Alcohol

Seongwoo Kim, Min Kim
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Development of General Synthetic Route for Aspidosperma Alkaloids

Eunjoon Park, Cheol-Hong Cheon
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Development of a Synthetic Protocol for 2-Arylquinolines via Palladium-Catalyzed Cascade Reactions

Jooyeon Yoon, Cheol-Hong Cheon
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Concise Total Synthesis of Phenanthroindolizidine Alkaloids

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Development of Novel Synthetic Method for Construction of 3,4'-Biquinolines

Jiye Jeon, Juhyeon Park, Cheol-Hong Cheon
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General Strategy for Synthesis of Corynanthe Family via Intramolecular Imino-Stetter Reaction Followed by Functionalization of Pyridine Ring

Cheolwoo Bae, Eunjoon Park, Cheol-Hong Cheon
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Two-photon Absorbing NIR emitting dipolar dye for bioimaging application

Changwook Song, Kyo Han Ahn
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Visible-Light Photoredox-Catalyzed Oxidative Deprotection of p-Methoxybenzyl Ether

Young Woo Kang, Sang Kook Woo
Department of Chemistry, University of Ulsan, Korea

Supramolecular Gels of Fluorescent Aza-Crown Macrocycles: Shape-Dependent Self-Assembly and
Prasad Gajanan Mahajan, Nilam Chandrakant Dige

Design, synthesis, Acetylcholinesterase inhibitory activity and Molecular docking analysis of 1,2,4-triazolidine-3-thiones

A Synthetic Approach to Unsymmetrical Diaryl Pyridines via Site-selective Suzuki-Miyaura Cross-
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Regioselective Suzuki-Miyaura Coupling of 3,5-Dibromo-2-silyloxypyridines
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One-pot amination and cyclization of (E)-1-(2-bromophenyl)-ethanone oxime to Indazole N-oxide
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Preparation and characterization of highly soluble acid dyes with high color strength for Digital Textile Printing
Sol Choi, Sang-Yoon Lee, Jun Choi
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Iptycynyl Effects: Stereoelectronic Bias of Bridged Bicyclic Molecular Scaffold to Control Tautomerism and Regioselective Cross-Coupling Reactions
Hongsik Kim, Taewon Kang, Dongwan Lee
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Synthesis of 2-Azolylpyrimidines via Oxidative Dehydrosulfurative Carbon-Carbon Bond Formation Reaction of 3,4-dihydropyrimidine-1H-2-thiones
Hong Ju Yang, Hyunjoo Kim
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N-Heterocyclic Carbene Borane Probes for Two-Photon Microscopic imaging of Hypochlorous Acid: Specialized in Endoplasmic Reticulum
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In Vivo Albumin Traps Photosensitizer Monomers from Self-Assembled Phthalocyanine Nanovesicles: A Facile and Switchable Theranostic Approach
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Colorimetric and ratiometric detection of mercury using two-photon fluorescent probe
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Delivery of Activatable Photosensitizer for Photodynamic Therapy using Human Mesenchymal Stem Cells (MSCs)
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Synthesis of Spiro[oxindole-3,2'-pyrrolidine] Derivatives from Benzynes and Azomethine Ylides through 1,3-Dipolar Cycloaddition Reactions
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Applicable factors for controlling the β-peptide 12/10-helix handedness
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Changing folding structure of 12/10-Helical β-Peptides by residue tansformation
Yonghan Kim, Soo Hyuk Choi
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Effects of Aromatic Stacking on the Hydrogen Bonding Interactions between Arylene Ethynylene Oligomers and Anions
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Synthesis of Allenes through NHC-Cu-catalyzed SN2' Reduction of Propargylic Chlorides with Diisobutylaluminum Hydride
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Porous Organic Solids: Sliding and Breathing Motions through Molecular “Single Point Mutation”
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Promotion of Hetero Diels-Alder Reaction via Intermolecular Hydrogen-bonding
**GwangJin Kim, Bonjig Moon**
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Intra-Mitochondrial Polymerization-induced Self-Assembly using Dynamic Disulfide Bond for Anti-Cancer Treatment
**Sangpil Kim, Ja-Hyoung Ryu**
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1Department of Chemistry, Ulsan National Institute of Science and Technology, Korea

Reductive Cleavage of Thioether for Rapid Access to Pyrimidines substituted at C4-C6 Positions
**Yoojin Oh, Jihong Lee, Jeong-Hun Sohn**
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1Department of Chemistry, Chungnam National University, Korea

Temperature-dependent Fluorescence Change of Dye-conjugated Heterotelechelic Poly (2-isopropyl-2-oxazoline)
**Ye Ji Kim, Woo-Dong Jang**
Department of Chemistry, Yonsei University, Korea

Synthesis of BN-doped naphthalene derivatives with four different substituents
**Hansol Kwon, Young S. Park**
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Synthesis and electroluminescent properties of 9-(10-phenylanthracen-9-yl)-benzo[b]fluoreno[3,4-d]thiophene derivatives for Blue Organic Light-Emitting Diodes
**Soo Kyung Kang, Seung Soo Yoon**
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Phenylanthracene-substituted Indenoquinoline Derivatives for Blue Organic Light Emitting Diodes
**Jinho Park, Seung Soo Yoon**
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Phenylanthracene-substituted Spiro-indenopyridine Derivatives as Blue fluorescent Materials for Organic Light Emitting Diodes
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Efficient Blue Organic Light Emitting Diodes Based on Phenylanthracene-substituted Indenoanones
**Jeongkyu Woo, Seung Soo Yoon**
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Study on Synthesis and Optical Properties of Methyl Salicylate Derivatives with Hetero Aromatic Compounds
**Miyeon Yoon, Intae Kim**
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Regioselective Fischer indolization in total synthesis of monoterpene indole alkaloids
**Tae-Hong Jeon, Dong-Hyun Kim, Cheon-Gyu Cho**
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A new route for practical production of furan 2,5-dicarboxylic acid from a cyclic HMF-acetal
**Minjune Kim, Yaqiong Su, Atsushi Fukuoka, Emiel J. M. Hensen, Kiyotaka Nakajima**
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Installation of Sterically Bulky Substituents on Imidazo[1,2-α]pyridine via Decarboxylative Arylation and Development of Abnormal NHC Ligands
**Hajoon Kim, Jin Kyoon Park, Haeeun Lee**
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Department of Chemistry, Sungkyunkwan University, Korea

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**Kim Hanbyul, Seunghoon Shin**
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**Tae-Woong Um, Seunghoon Shin**
Department of Chemistry, Hanyang University, Korea

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**Huong Quynh Nguyen, Seunghoon Shin**
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Jang yeop Kim, Hyung Joon Kang, Cheon-Gyu Cho
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Highly Porous CNT/Polymer Hybrid Membranes For Heat Signal-Responsive Drug Delivery

Sang Yu Park, Ueon Sang Shin
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Kyungmog Kim, Kyu-Sung Jeong
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Suman Kumar Ghosh, Moon Young Hur, Young Ho Ko, Kyeng Min Park, Kimoon Kim
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Jeong Kyun Im, Ilju Jeong, Won-jin Chung
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Jiyoun Lee, Eun Jeong Yoo
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Radical Cation Cyclopropanation Reaction using Iron(III)-polypyridyl Complex

Yong hyun Cho, Kwang-Hyun Ahn, Eun Joo Kang
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Synthesis of Cyclic Carbonate from CO2 and Epoxide Catalyzed by Heteroleptic Fe(II)-iminopyridine Complexes

Namhee Kim, Jae Hyung Kim, Eun Joo Kang
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Sora Park, Jeung Gon Kim
Department of Chemistry, Chonbuk National University, Korea

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Clovis Shyaka, Chung-Min Park
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Hyung Joo Kim, Jiye Jeon, Cheol-Hong Cheon
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A new hydrazine recognition system based on fluorescent sensor array

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Synthesis of 4-hydroxy-2-naphthoic acid, a pharmacologically important drug intermediate

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Two-photon ratiometric probe for Analyzing Ca²⁺ in live cells and its application in spinal cord injury model

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Synthesis of 3-epi-5,6-Dihydroergosterol and Its Glycosides and Comparison of Anti-inflammatory Activity

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A Two-Photon Fluorescent Probe for Ratiometric Detection of Hydrogen polysulfides and Its Application in Parkinson’s Disease

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Asymmetric Synthesis of β-Amino Alcohols using Acrolein Derivatives

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A Ratiometric Two-Photon Fluorescent Probe for Monitoring of γ-Glutamyltransferase Enzyme

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New method for homologation of ester to α,β-unsaturated esters using modified Horner–Wadsworth–Emmons (HWE) olefination

chang Whee Hong, Duk Keun An, Hyun Tae Kim
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Targeting mitochondria and lysosome, and detect autophagy using fluorophore

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Copper Catalyzed Diastereo- and Enantioselective Synthesis of 1,2-Hydroxyboronates

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Novel catalytic hydroboration of aldehydes and ketones using LiBr as catalyst

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synthesis and characterization of ETNB(1-Ethoxy-2,4,6-trinitrobenzene) and its melt-cast formulation

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A Novel Rhodamine 6G Based Colorimetric and Fluorescent “turn-on” Chemosensor for Al³⁺

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LDBBA catalyzed hydroboration of unsaturated hydrocarbons and imines with pinacolborane (HBpin)

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Regioselective Synthesis of Functionalized 4-Pyrones by Thermal Wolff-Rearrangement
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In/Ag-Catalyzed Construction of Polyfunctionalized N-Arylpyrazoles via Regioselective [2+2+1]-Oxidative N-Anellation
Raju Sitaram Thombal, Yong Rok Lee
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Partial reduction of isopropyl esters to aldehydes via catalyzed hydroboration
Ashok Kumar Jaladi, Duk Keun An
Department of Chemistry, Kangwon National University, Korea

Cu(I)-Catalyzed [5+3+1] Annulation for Highly π-Extended Carbazoles
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Facile aromatic CF₃ substitution and [¹⁸F]CF₃ labeling from aryl iodides by using the Cu ligand complex [(TMPhen)₂Cu][COOCF₂Cl]
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Ag(I)-Mediated Regio- or Stereoselective Synthesis of Furan-3-carboxamides and (Z)-Enaminones
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Mild Base Mediated Benzannulation of N-Tosylhydrazones with 3-Formylchromones: Direct Access to Diverse and Polyfunctionalized Xanthones
Rajeev Shrestha, Yong Rok Lee
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Ratiometric detection for indium ions using fluorescent probes consisting of aggregation induced emission fluorophore and dipeptide receptor
Joohee Park, Chaeun Kim, Keun Hyeung Lee
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Jaewook Jeong, You Hyeongseok, Keun Hyeung Lee
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A Conjugated Polyelectrolyte Micelle-Based Fluorescent pH Sensors for Strongly Acidic or Basic Conditions
Jeongmoo Lee, Seoung Ho Lee
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A Conjugated Polyelectrolyte Micelle Based Kinetic Discrimination of Fe²⁺ and Fe³⁺
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Bio-orthogonal turn-on probe Tetrazine based Kaleidolizine
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Yoseph Kim, Youngjo Kim
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Core-Shell Structured P3PT-Wrapped CNT Bucky Paper
Sung-jin Kim, Ueon Sang Shin
Selective red-emission detection of Glu in aqueous solution at physiological pH using fluorescent probe based on phenylboronic acid and amphiphilic peptide receptor

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An injectable hydrogel preparation for sustained Cyclosporin A delivery

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Carbon Nanotube-Based Smart Transdermal Drug Delivery System (TDDS)

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Aluminum amide mediated conversion of amides into amidines: Synthesis of amidine library

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Synthesis of 2-alkoxybenzimidazoles and its conversion into 2-aminobenzimidazoles using aluminum amides

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Dibenzothiphene based material for non-doped fluorescent emitter and Yellow phosphorescent organic light emitting diodes

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Dibenzocarbazole based host materials for Yellow phosphorescent organic light emitting diodes

Kyu Yun Chai, **Seung Yu Choi**, Keunhwa Kim, Keunhwa Kim, Younghee Park

The Investigation of Chemoselectivity in β-mercaptoamine Depending on Reaction Condition: S-Acylation vs N-Acylation

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Preparation of Linalool Derivatives; Their Fragrance and Application

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Mono and bridged BODIPYs: their synthesis, structures and spectroscopic properties

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Functional Indolocarbazole–Naphthyridine Foldamers via the Site-Specific Modification

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Hole transport layer using azide based photocrosslinking system for solution-processed organic light-emitting diodes.

**Jeong Yong Park, Do-Hoon Hwang, Jae-Ho Jang**
Department of Chemistry, Pusan National University, Korea

Thermally Cross-Linkable Host materials with styrene for Solution-Processed Organic Light-Emitting Diodes

**Jae-Ho Jang**, Jeong Yong Park, Do-Hoon Hwang
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Design, Synthesis, and Enzyme Inhibitory Activities against AXL and ACK1 of Novel Aminopyrimidine Derivatives

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Identification of novel scaffold inhibitors of mammalian target of rapamycin (mTOR) from high-throughput screening

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Identification and Biological Activities of taxifolin in Wolfiporia extensa

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Design, Synthesis and biological evaluation of novel pyrimidine derivatives as NUAK1 kinase inhibitors

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A novel highly potent and selective 11β-hydroxysteroid dehydrogenase type 1 inhibitor in a diabetic mouse model

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Efficient and rapid synthesis of N-substituted isoquinolin-1(2H)-one under mild conditions: Facile access to doryamine derivatives

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EGFR exon 20 insertion mutations to NSCLC

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Induced target degradation of BET by target degraducers(TDs)

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Discovery and Development of Allosteric Inhibitors of Kidney Type Glutaminase with high PK Properties and good Solubility.

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Retargeting and antitumor effects of adeno-associated virus on OVCAR3 ovarian cancer in vivo

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<td>Dept of Chemical &amp; Molecular Eng/Applied Chemistry, Hanyang University, Korea</td>
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<td>Department of Biotechnology, Yonsei University, Korea, Department of Chemistry, Yonsei University, Korea, Convergence Research Center for Dementia DTC, Korea Institute of Science and Technology, Korea, Convergence Research Center for Dementia, Korea Institute of Science and Technology, Korea, Convergence Research Center For Diagnosis, Treatment and Care System of Dementia, Korea</td>
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<td>New Drug Development Center, Daegu Gyeongbuk Medical Innovation Foundation, Korea</td>
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<td>Convergence Research Center for DTC, Korea Institute of Science and Technology, Korea</td>
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<td>Convergence Research Center For Diagnosis, Treatment and Care System of Dementia, Korea</td>
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Design, Synthesis and Optimization of Novel Class of Nrf2 Activator as a Neuroprotective Agent for Treatment of Parkinson’s disease

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Design, synthesis and biological evaluation of phenoxyazine derivatives as clathrin inhibitors

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Newly developed reversible MAO-B inhibitor circumvents the shortcomings of irreversible inhibitors in Alzheimer’s disease

Jong-Hyun Park, Ji Won Choi, Boko Jang, Hyeon Jeong Kim, Siwon Kim, Ki Duk Park
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Neeraj Kumar Mishra, Prithwish Ghosh, Won An, In Su Kim
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Ginsenoside Rb2 suppresses the glutamate-mediated oxidative stress and neuronal cell death in HT22 cells

Taejung Kim, Jiwoong Lim, Heesu Lee, Ae Nim Pae, Jae Wook Lee
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Ye Ri Han, Doohyun Lee, Chunyoung Im
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**Hyung Soo Kim,** Jong Yeon Hwang¹,², Jae du Ha², Sung Yun Cho², Pilho Kim¹, AhRa Go¹, Yeong Uk Jeon³

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**Eun Bi Ko,** Chunyoung Im, Ga Young Park, JiHee Kang, Eunhye Lee, Sooong-Hyun Kim, Minsoo Song

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Pyrrolo[2,3-D] Pyrimidine derivatives, A Cathepsin K Inhibitor for The Treatment of Osteoporosis

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Development and Lead optimization of CETP inhibitors for cardiovascular diseases

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Development of fluorescent probe SiR-Mito11 targeting mitochondria for cancer treatment and diagnosis

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Synthesis of Tetrahydroisoaxazolopyridine, Benzisoxazol and Pyridoindole Derivative as 5-HT₆ Receptor Antagonists

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Synthesis of derivatives as transthyretin (TTR) kinetic stabilizer that can inhibit amyloidosis.

**SeoYun Kim,** Eunhee Jeon, Yunlan Kim, Sungwook Choi

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Discovery of potent and selective inhibitors for EHMT2(G9a)

**Suyyeong Kwon,** Na Yeon Kim, Jina Kim, Shinae Kim

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Synthesis of thiophene-acylguanidine derivatives and evaluation of nematocidal activity

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Efficient synthetic methods of 7-trifluoromethyl-7-deazapurine ribonucleoside analogs and their phosphoramidate prodrugs

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Identification of novel SHIP2 Inhibitors for the Treatment of Alzheimer’s Disease

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Synthesis of Ascorbyl Conjugated Peptide Derivatives and Evaluation of Collagen Stimulating Activity in Human Skin Fibroblasts
Jiyeon Kim, Jun Goo Kang, Taek Jin Kim, Kyeongyong Park
Department of Chemistry, Kyung Hee University, Korea

Identification and structure analysis of antimicrobial materials from natural biological resources that were collected from southeast asian countries
Yeseul Park, Dong-Ku Kang
Chemistry, Incheon National University, Korea

Anti-oxidant Effects of Secondary Metabolites from the Marine Fungus Penicillium sp. 168CLC-17.1
Byeoung-kyu Choi, Phan Thi Hoai Trinh, Tran Thi Thanh Van

Development and identification of biocompatible antimicrobial materials from endophytic microbials
Juyong Park, Dong-Ku Kang
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Antibacterial activity and mechanism of action of chelation free Zn (II) azole complexes in Methicillin resistant Staphylococcus aureus
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Bi$_x$Pd$_y$ Alloy Particles Characterized by Catalytic Activity at Low Temperature: Nitro Reduction and C-C Coupling Reactions under Green Conditions

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MAT.P-391

Improved Photocurrent Extraction from PbS Quantum Dot Photovoltaics by Incorporation of Fullerene-Encapsulated Single-walled Carbon Nanotubes

Jonghee Yang, Junyoung Lee, Whikun Yi
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Fabrication and Applications of Noble Metal Coated Fe$_3$O$_4$@TiO$_2$ Photocatalyst Nanoparticles with Enhanced Activity

Kyeong-Mi Song, Seong-Hyun Jang, Jin-Seung Jung
Department of Chemistry, Gangneung-Wonju National University, Korea

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Heterolayered Organic Intercalation Compounds of Mixed Metal Oxide-Chalcogenide Nanosheets with Improved Electrocatalyst Performance

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MAT.P-394

Layered Metal Carbide Nanosheet as an Efficient Additive for Exploring High Performance Hybrid Electrode for Supercapacitor

Xiaoyan Jin, Seong-Ju Hwang
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MAT.P-395

Beneficial Effect of Amorphous Structure on the Electrochemical Functionalities of Metal Oxide

Min Ji Kim, Xiaoyan Jin, Seong-Ju Hwang
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MAT.P-396

Mesoporously Restacked Nanocomposites of Layered Double Hydroxide-Metal Oxide Nanosheets with Improved Catalyst Performance

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MAT.P-397

White light-emitting colloids and films containing organic sensitizer/LRH:RE nanosheets

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MAT.P-399

Ceria/polymer composite films for UV screen

WoJu Jeon, Hong-Gu Jeon, Song-ho Byeon
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MAT.P-400

Kojic acid intercalated layered yttrium hydroxide

Bora Kang, Song-ho Byeon
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MAT.P-401

Encapsulation of BP-4 sunscreening agent into LYH matrix to enhance its photostability

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MAT.P-402

Synthesis of porous magnetic absorbents for oil/water separation

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MAT.P-403

Amphiprotic air filters for removal of particulate matters (PM2.5)

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MAT.P-404

Alginate-based macroscopic adsorbents for efficient removal of heavy metal ions

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MAT.P-405

N-doped carbon blacks by two step heating as a metal free catalysts for oxygen reduction reaction

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MAT.P-406

Effect of Order for Production Steps on N-doped Reduced Graphene Oxide/Fe3O4 Hybrids on Electrocatalytic Performances for Oxygen Reduction Reaction

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Uniformly-dispersed Pt nanoparticles on borane-modified graphene oxide as electrocatalyst for oxygen reduction reaction

**Sujin Seok**, Haeju Kim, Sungjin Park
Department of Chemistry, Inha University, Korea

Size-Dependent Nonthermalized Energy Transfer in Dye-Conjugated Gold Nanoclusters

**SangMyeong Han**, Kyunglim Pyo, Dongil Lee
Department of Chemistry, Yonsei University, Korea

Functionalization of graphene quantum dot for electrocatalysis and photocatalysis

**Ji Soo Kim**, Hyun Chul Choi
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Synthesis of polyaniline-loaded metal-organic framework MIL-101(Cr) for CO2 capture with increased capacity and selectivity

**Dongkyu Yoo**, Sung Hwa Jhung
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Bimetallic-MOF-74s derived porous carbons with well-dispersed Ni-/MnO-nanoparticles for highly reactive redox catalysts

**Subin Shin**, Sung Hwa Jhung
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Adsorption removal of benzothiophene from liquid fuel with ionic liquid supported metalorganic framework

**JongMin Park**, Sung Hwa Jhung
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Efficient photocatalytic degradation of methylene blue by RuO2–CNT nanocomposite

**Jidang Kim**, Hyun Chul Choi
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Non-enzymatic amperometric determination of hydrogen peroxide using ZnO-CNT

**Jidang Kim**, Hyun Chul Choi
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Phase-Selective Synthesis of Two-Dimensional MoTe2 through Te Flux Control

**Hyeonkyeong Kim**, Youngdong Yoo
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An effective Storage Materials of Sodium Ion battery using a Covalent Organic Nanosheets(CONs).

**Kim Min-Sung**, Jin Kuen Park
Department of Chemistry, Hankuk University of Foreign Studies, Korea

Perovskite nanocrystal based highly efficient light-emitting diodes with post-synthetic ligand treatment

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Enhancing performance of perovskite solar cells introducing PEDOT:PSS and GO composite layer as a hole transport layer

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Photocatalytic degradation of rhodamine B dyes by TiO2 and Au nanoparticles supported on the PDMS sponge under UV and visible light irradiation

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Interdigitated electrodes pattern for liquid dielectrophoresis paper chip.

**Sooyong Park**, Veasna Soum, Oh-Sun Kwon, Kwanwoo Shin
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Effective Passivation for Biosensor using Electrolyte-gate Thin-Film Transistor

**Young min Song**, Young-Geun Ha
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Preparation of superhydrophobic film at room temperature by a facile UV process and Self-Assembled Monolayer Nanoparticles

**Yeonah Park**, Young-Geun Ha
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Study on Thin-Film Transistor (TFT) Based Biosensor Application with bottom-gate top-contact structure

**Byung seok Yu**, Young-Geun Ha
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Stretchable batteries with gradient multilayer conductors

**Minsu Gu**, Byeong-Su Kim
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Evaluating the electrical quality of powder-type graphene materials

**Ha-Jin Lee**, Hyokyung Jeon, Haeseong Lee
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Reusable Polybenzimidazole Nanofiber Air Filter for PM2.5 Dust Proof Mask

Ara Cho, Min Hyung Lee
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Ultrasonic Spray Chemistry: In-Situ Synthesis and Fabrication of Thin-Film Conjugated Microporous Polymer and Their Energy Storage Application

Deok-Ho Roh, Tae-Hyuk Kwon
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Tuning the Luminescent Properties of Upconverting Nanoparticles via Multi-layer Structure

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Facile synthesis of FA-doped CsPbBr3 Perovskites Nanocrystals at Room temperature for Light-Emitting Diode (LED)

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Eggshell-Inspired Strategy for Cytocompatible Nanocoating

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Carbazole Dioxazine-containing fused ring molecules displaying halochromic behavior in solution and film state

Youngun Kim, Jiwon Yoon, Chae Yeong Kim, Min Ju Cho, Dong Hoon Choi
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Aggregation Induced Emission Luminogens for Solution-processed Non-doped White Organic Light-emitting Diodes

Jiwon Yoon, CheolHun Jeong, Hyung Jong Kim, Youngun Kim, Chae Yeong Kim, Jihyun Kim, Su Hong Park, Min Ju Cho, Dong Hoon Choi
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Solution-processed host-free WOLED fabricated with blue and red fluorescence blending film

Chae Yeong Kim, Jiwon Yoon, Cheol Hun Jeong, Hyung Jong Kim, Youngun Kim, Jihyun Kim, Min Ju Cho, Dong Hoon Choi
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Supramolecularly Controlled Second-Order Stark Effect in an Organic-molecular Diode

Soojin Cho, Gyu Don Kong, Sohyun Park, Hyo Jae Yoon
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Biomimetic Signal Transduction Cascade using Pro-Nanozyme for Enzyme Activity Assay

Minsoo Kim, Dongkap Kim, Jaegeun Noh, Youngdo Jeong
Department of Chemistry, Hanyang University, Korea

Synthesis of N-Doped Carbon-Coated Cobalt Oxide from MOF as an Anode Material for Li-Ion Batteries

SeonTae Kim, Jongsik Kim
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Guanidinium-Incorporated Cesium Lead Halide Perovskite for Green-Light-Emitting Diodes

Wonhee Cha, Dongho Kim
Chemistry, Yonsei University, Korea

Enhanced Water Oxidation Efficiency with Polarized Ba0.5Sr0.5Co0.8Fe0.2O3 Perovskite Electro-Catalysts

Heewon You, Min Hyung Lee
Applied Chemistry, Kyung Hee University, Korea

Intercalation of Cobaltocene into WS2 Nanosheets for Enhanced Catalytic Hydrogen Evolution Reaction

In Hye Kwak, Ik Seon Kwon, Jaemin Seo, Jisun Yoo, Kim Doyeon, Jong Hyun Lee, Jeunghee Park
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Scanning Transmission Electron Microscopy of Two-Dimensional Transition Metal dichalcogenide-Molecules Intercalated Nanosheets

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TMD Materials@Si nanowire Photocathode as Effective Photoelectrochemical Hydrogen Evolution Reaction Catalyst

Jisun Yoo, Jeunghee Park, Kim Doyeon, Ik Seon Kwon, Jong Hyun Lee
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Two Dimensional MoS2/Fe-Phthalocyanine Hybrid
Nanosheets as Excellent Bifunctional Electrocatalysts for Hydrogen Evolution and Oxygen Reduction Reactions

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Synthesis and Characterization of Unexploited IV-V Layered Structures

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Synthesis of Wide Bandgap GeP Nanosheets and Their Electrical Properties

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Surface Enhanced Raman Spectroscopy at Nanogap between Au Nanoparticles Separated by 2D hexagonal Boron Nitride

Jong-Guk Ahn, Hyunseob Lim
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Solvent-free synthesis of metal nanoparticles and reduced graphene oxide composite for EMI shielding

Kyu Hyung Lee, Nam hwi Hur
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Calcium-Doping for Structure Stabilization of Sodium Transition Metal Oxide Cathodes in Sodium Ion Batteries

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B₃S Honeycomb Monolayer with High Specific Capacity for Lithium-Ion Batteries

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High Photocatalytic Degradation of Organic Dyes by GO/HNTs/ZnO Nanocomposites under Visible Light Irradiation

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Development of an Improved Surface Coating Reagent Compared to Dopamine

JeongWoo Hong, Yeonwoo Jeong, Sangdon Choi, Min Kim, Sung Min Kang
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Calcium storage in graphite anode and organic cathode: Implementation in a rocking chair type calcium ion battery

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Rechargeable Mg-Ion Battery: An Organic Electrode Material for High-Voltage MIB's

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Improve Stability and Reduce Hysteresis of Perovskite Solar Cell with F4-TCNQ as a P-type Dopant for Polymer Hole-Transporting Material

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Free-standing MnCoOx@NCNF anode material for Li-ion battery

Jitendra Samdani, Jong-Sung Yu
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Fabrication of High Performance Hole Transporting Layers based on MoS2/PEDOT:PSS Hybrids for Organic Solar Cells

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Solution-Based Thermal-Aging Process of Vanadyl(IV)acetylacetonate Precursor for Deposition of VO₂ Thin Films and Their Optical Properties Control

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Highly Emissive Octahedral Rhenium Metal Cluster with Massive Stokes shift and Its Application on Transparent Luminescent Solar Concentrator

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Facile Fabrication of Hemisphere Film for Enhancing Solar Cell Efficiency Economically

Enhancement of solar cell efficiency by mixed spectral conversion materials

Improvement optical properties of Perovskite quantum dots (PQD)-embedded SiO2 film via nanoimprinting

Synthesis and Thermoelectric Properties of Cu2SnS3

Horizontally Stacked Cobalt-Nickel Hydroxide Nanocrystals on Ni Foam as Electrode Materials for High Performance Pseudocapacitor

LiAl2-LDH Grown in Anodic Aluminum Oxide Membrane for Lithium Adsorption

Synthesis of heavily Cu-doped Bi2Te3 nanoparticles and their thermoelectric properties

[Withdrawal] Highly stable P3-K0.8CrO2 cathode with limited dimensional changes for potassium ion batteries

FORMULATION OF NANO-COMPOSITE BIOINK FOR HEAT RESPONSIVE SOFT ACTUATOR

Preparation and use of heterogeneous catalyst for olefin oxidation based on porous organic polymer support

Development of Highly Stable P2-type Kx[Ni1/3Mn2/3]O2 Cathode with Excellent Rate Characteristics for Potassium Ion Batteries

Lattice Spacing-Induced Supramolecular Structural Effect on the Performance of Molecular Tunneling Devices

Modification of porous g-C3N4 nanosheets for enhanced photocatalytic activity: In-situ synthesis and optimization of NH4Cl quantity

Fabrication and Characterization of CsPbBr3@SiO2 Perovskite Quantum-Dot Composites for ink-jet Printed Color Conversion Layer

Graphene Encapsulated Au@TiO2 Core-Shell Nanostructures for Plasmon-Enhanced Photocatalytic Hydrogen Evolution

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Synthesis and Structural Studies of a New Mixed-valent Two-dimensional Quarternary Sulfide, K2Ta6Pd9S24
Synthesis and Structural Characterization of a New 2-dimensional Chromium Thiophosphate, CsCr₃P₂S₁₀

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Microwave-assisted synthesis of reduced Graphene oxide/Mn₃O₄ hybrids with spherical hollow structure for lithium-ion battery application

Seung-Min Paek, Min-Jae Kim
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Geometry Isomer Effects of Terphenyl Backbone Based Donor-[π]-Accepter Dyads on the Intramolecular Charge Transfer

Minji Kim, Kyung-Ryang Wee
Department of Chemistry, Daegu University, Korea

Effect of Integrated Tandem pⁿ-n-Silicon-SnO₂/TiO₂ Photoelectrochemical Cell for Efficient Photoinduced Water Splitting

Minji Kim, Kyung-Ryang Wee
Department of Chemistry, Daegu University, Korea

Optical and Magnetic Properties of Self-Doped CdₓHg₁₋ₓSe Alloy Nanocrystals

Dongsun Choi, Kwang Seob Jeong
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The Comparative Studies on Photophysical and Redox Properties of the Mononuclear and Dinuclear Ru(II) Complexes Prepared from the Photosensitizing Unit

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Affinity-based Purification of Biopharmaceuticals Using Synthetic Binding Pairs

An Jaeyeon, Junghyun Kim, Kyeng Min Park
Kimoon Kim
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Effect of Styrene-PVP Interaction on the Properties of Silicone Hydrogel Lens

Min-Jae Lee, A-Young Sung
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Characteristics of Hydrogel Lenses Containing Nanoparticles of Cerium Oxide and Cerium Iron Hydroxide with 4-Chlorostyrene

Su-mi Shin, Jonghwan Do, A-Young Sung
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Enhanced photodegradation of Indigo Carmine using ZnO-Bi₂O₃-Graphitic carbon nitride/H₂O₂ system

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Eu-doped BiₓWO₆ for the photodegradation of 2,4,5-Trichlorophenoxyacetic acid.

Seong-Soo Lee, Huy B.t., Yong-ill Lee
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Synthesis of ternary Pt-Ni-Cu octahedra for electrocatalytic methanol oxidation reaction

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Surface Elemental Distribution Impact of Pt-Pb Hexagonal Nanoplates as Electocatalysts toward Methanol Oxidation Reaction

Hee Jin Kim, Sang-II Choi
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Study of electronic structures and cation disorder behavior of lithium transition metal oxides (LMO, M = Co and Ni) with various lithium composition from first principles calculation

Hyosik Kang, Sanghun Lee
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Intimately-coupled MoS₂-Au-CdS ternary hybrids for efficient visible-light photocatalytic hydrogen evolution

Dae Han Wi, Jong Wook Hong, Sang Woo Han
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Synthesis and Characterization of Colloidal Gallium Nitride Quantum Dots and Impurity Doping for Blue Emission

Yun Chang Choi, Chiho Lee, Juhee Son, Sungnam Park, Kwang Seob Jeong
Department of Chemistry, Korea University, Korea

One-pot synthesis of dendritic PtNi nanocrystals on CeO₂ nanosheets as supporting materials with high
electrocatalytic performances toward methanol electrooxidation and oxygen electroreduction.

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Synthesis of BaGa-Layered double hydroxide for multimodal contrast agent application

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Magnetic field-assisted self-assembled plasmonic chiral film with tunable optical activity

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Visible light photocatalytic property of M/ATO/TiO$_2$ (M= Au, Ag and Pt)

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Simontational study for forming mechanism of the pores in FeOOH nanorod

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PdAg@Pd Core−Shell Catalysts for Efficient Hydrogen Production from Formic Acid Decomposition

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Monofacet-Selective Cavitation within Solid-State Silica-Nanoconfinement towards Janus Iron Oxide Nanocube

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Hydrothermal Synthesis of CuMO$_2$ (M= Ga, Cr) for Inorganic Hole Conductor

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New Lithium-ion Conducting Framework Oxide, LiTa$_3$PO$_6$

**Doe-hee Park**, Jaegyeom Kim, Gunwoo Yoo, Seung-Joo Kim
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The phase transition and thermochromic characteristics in W- and Nb-doped VO$_2$(M) nanocrystallites and their thin films

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Impact of large mesopores of carbon electrodes on electrochemical performance of EDLCs

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Electron transporting materials for blue phosphorescent organic light-emitting diodes using triaryl boron derivatives

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Size and shape control of TiO$_2$ nanoparticles

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Low-cost Synthesis of Mesoporous Hollow Silica Spheres for CO$_2$ Capture

**Suguan Jang**, Jae Young Bae
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Rational design of carbazole-based donor–acceptor dyad system for thermally activated delayed fluorescent material

**Keumhee Lee**, Taebin Cha, Won-Sik Han
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Hard-templating synthesis of ordered mesoporous carbon without acid-catalyst impregnation

**Hakju Lee**, Kyoungsoo Kim
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Zeolite templated micropore 3D graphene carbon synthesis for lithium ion capacitor application

**JinJu Han**, Hakju Lee, Kyoungsoo Kim
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Synthesis and characterization of the homoleptic Ir(III) complex with closed 2-phenylquinoline ligand for red phosphorescent organic light-emitting diodes

**SoYoung Kwak**, SoHee Lee, Won-Sik Han
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Phase and structure-dependent effects of TiO₂ in application to photocatalytic CO₂ conversion reactions
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Multifunctional amorphous TaOₓ layers on photocathodes for photoelectrochemical H₂ production
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Synthesis Method of Multi-Shell Mesoporous Hollow Silica Nanospheres for CO₂ Adsorption
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Crystal structure and ionic conductivity of new NASICON-type compounds
Minseong Kim, Jaegyeom Kim, Seung-Joo Kim
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Reversible Phase Decomposition-Formation of CaCrO₄
Jinho Shin*, Hui Seo Park, Seung-Joo Kim
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Scattering Fourier Transform Biosensor (SFTB)
Sungwoo Lee, Sungjae Yoo, Hajir Hilal Khaleel Al Hammad, Sungho Park
Department of Chemistry, Sungkyunkwan University, Korea

Fourier Transform Surface Plasmon Resonance of Magnetic Gyro-Nanodisks: Magnetic modulation and viscosity measurement at a localized area
Sang Baek Jung, Seongkeun Ih, Dajeong Kim, Jeongwon Kim, Sungho Park
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Blue Phosphorescence from Heptafluorosulfonil Substituted Iridium Complexes
Na Yeong Kim, Yun Hi Kim, Soon-Ki Kwon¹
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Decomposition of Silicon Carbide
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Research on Organic Semiconductors using a variable factor to self-assembly for Optoelectronic properties.
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The anisotropy and metal to insulator transition behavior of VO₂ film deposited on C, R, M, A-crystal lattice plane of Al₂O₃.
Seong Cheol Hong, Myeongsoon Lee, Don Kim
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Carbohydrate detection of graphitized carbon nanotubes attached with gold particles fabricated by conversion of sucrose
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Detection of microcystin-LR by using a simple carbon nanotube@paper aptasensor
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Synthesis of Hollow Silver Cubes using Silver Oxide Mesoparticles as Templates and Their Morphological Evolution to Hexapods or Octapods
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One-pot synthesis of iron hydroxide hierarchical supraparticles
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Industrial-Scale Synthesis of Superparamagnetic Fe₃O₄ Nanoclusters for Bioseparation and Theragnostic Probes
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A simple synthetic route for fct-FePd Nanocatalysts
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Photoluminescence Enhancement of Ethanol with Graphene Quantum Dots Synthesized by Thermal
Lining up Magnetic-Plasmonic Superparticles on Watery Substrate
Van Tan Tran, Jaebeom Lee
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In vivo feasibility test using transparent carbon nanotube-coated polydimethylsiloxane sheet at brain tissue and sciatic nerve
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Photo-induced Reversible Transformation of Azobenzene-containing MLD Films
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Organometallic Compound Inserted Layered Clays for Enhanced Water Oxidation
Jae Ryeol Jeong, Min Hyung Lee
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Fabrication of Water-repellent Polymeric Film by Spray Coating of Hydrophobic Nanoparticles
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Excitation intensity dependent photoluminescence property of perovskite type quantum dots

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Optical fibers/Red TiO2 nanotubes for Trace Contaminant Control System
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g-C3N4/CuNi/CaFe2 photo-cathode for CO2 photo-conversion
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Pulsed wire evaporation based CuNiAl for CO2 to CH3OH selectivity and high yield
Hyun Kim, Bee Yong Yang
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Novel Propionitrile based electrolyte system for electrochemical double layer capacitors to enhance cycle stability at 3.5V

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Time transient electrochemical monitoring of tetraalkylammonium polybromide solid particle formation: observation of ionic liquid-to-solid transitions

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Electrochemistry of dual-redox ionic solid complexes: understanding their formation and redox-chemistry via proton coupled electron transfer (PCET)

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Activating MoS2 basal plane with Ni2P nanoparticles for Pt-like hydrogen evolution reaction

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Evaluation of Azo-based, Redox-Active Covalent Organic Frameworks as positive electrode materials in Organic Lithium Ion Battery

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FeF2 Nanoparticles Wrapped in Graphitic Carbon Prepared from Fe-MIL-88B Template as a Cathode Material for Sodium-Ion Batteries

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Layer-by-layer growth of CIGS/CdS architecture on Mo substrates by E-ALD

Mukunthan Ramasamy, ChanYong Jung, Yu-Beom Yeon, Chi-Woo Lee
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Spontaneously adsorbed platinum complex on quartz via EQCM

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A comparative study of ZnS film fabricated by CBD and ALD

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1Control and Instrumentation Engineering, Korea University Sejong Campus, Korea

Revisit V(V)-V(IV)-V(III)-V(II) electrochemistry in highly concentrated acidic medium: origin of parasitic hydrogen evolution reaction (HER)

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Cobalt Oxide Nanocrystals for Electrochemical and Photoelectrochemical Water Splitting

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Bi2O3/Bi2S3 Composite for Efficient Photoelectrochemical Reaction

Jihyeon Kim, Ki min Nam
Department of Chemistry, Pusan National University, Korea

Study of the anodic behavior of iodide in high concentration ZnI2 media by steady state voltammetry on Pt ultramicroelectrode

Yun Jin Leem, Jinho Chang
Department of Chemistry, Hanyang University, Korea

Polymer Chain Growth Analysis Using Electrochemical Method on an Ultramicroelectrode: Relationship between Viscosity and Molecular Weight

Hae-Young Kim, Byung-Kwon Kim
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Electrochemical behavior analysis of microbeads in aqueous and organic solution

Yeji Kang, Byung-Kwon Kim
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Stability Increase of Glucose Sensor by addition of nafion layer

Eunhyeon Ha, Woonsup Shin
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Affordable Fabrication of Conductive Electrodes and Dielectric Films for a Paper-based Digital Microfluidic Chip

Veasna Soum, Sooyong Park, Oh-Sun Kwon, Kwanwoo Shin
Department of Chemistry, Sogang University, Korea

Unraveling Synergetic and Antagonistic Effects in the Rational Design of Ni- and Ru-Based Water Splitting Electrocatalysts
Filipe Marques Mota, Dong Ha Kim
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Incorporating excess lithium into LiMn2O4 via thermally induced grain fining: Promoted lithium-ion diffusion in Li-excess LiMn2O4
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N-Doped Graphitic Carbon Coated Fe3O4 Using Dopamine as an Anode Material for Sodium-Ion Batteries
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Study of electrocatalytic oxygen reduction reaction on metal nanocluster based electrodes
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Thermally Induced Nanostructuring for the Synthesis of Core/Shell Structured CoO/CoSx Electro catalyst
Minsoo Kim, Jin Ho Bang
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Non-enzyme biosensor using nickel particles immobilized indium tin oxide electrodes for selective detection of uric acid
Chang Jun Lee, Won-Yong Jeon, Young Bong Choi, Hyung-Han Kim
Department of Chemistry, Dankook University, Korea

Reducant-free synthesis of carbon dots-supported Ag-Cu catalysts for electrocatalytic oxygen reduction reaction
Hoseop Im, Sunguk Noh, Jun Ho Shim
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Synthesis and characterization of cobalt-iron composites for electrochemical water splitting
Sujin Jo, Sunguk Noh, Jun Ho Shim

Fabrication of an Electrochemical Dual Microsensor for Simultaneous Monitoring of Hydrogen Sulfide and Oxygen
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Electrospun Iridium Nanotubes for Carbon Monoxide Oxidation Reaction
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Photoelectrochemical properties of Cuprous Oxide Nanowire
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Colorless-to-neutral gray electrochromic devices fabricated with inorganic nanocomposite films
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Atomic-scale combination of germanium-zinc distorted array for structural and electrochemical evolution
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Rapid determination of norovirus using electrochemical nanobiosensor via WS2 nanoflower-bioreceptor hybrid
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Anodic WO3 Nanoporous Film for Solar Water Oxidation
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Electrocatalytic activity of molybdenum oxide nanoparticles dispersed on 2,6-diaminopyridine functionalized reduced graphene toward dopamine detection in presence of ascorbic acid.
Nipa Roy, seungwon Jeon Jeon seung-won1,*
Stretchable components design of lithium-ion battery toward wearable electronics

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Chitosan-Based Polymer Electrolyte Containing Silver nanowire of Various Shapes

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Noticeable photocurrent generation through improved electrochemical communication between cyanobacteria and electrode

Hyejun Cho, Jinhwan Lee, Sunghyun Kim
Konkuk University, Korea

Exploration of Photo and Electrochemical Studies with an Efficient Electrocatalyst on BiVO4 Photoelectrode for Photoelectrochemical Water Splitting.

Maheswari Arunachalam, Soon Hyung Kang
Department of Chemistry, Chonnam National University, Korea


Myung Jun Lee, Seong Jung Kwon
Department of Chemistry, Konkuk University, Korea

Preparation and Electrochemical Investigation of TEMPOL Derivatives: Apply to Redox Flow Battery

Hyunil Cho, Chuljin Ahn
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Pt and Ru electrocatalysts using the synergistic effect of single atoms and nanoparticles for high hydrogen evolution

Siraj Sultan, Ahmad Mosen Harzandi, Kwang Soo Kim
Department of Chemistry, Ulsan National Institute of Science and Technology, Korea

[Withdrawal] Comparative Study of the Effects of Nanostructures of Au on the Electrochemical detection of As

Camerun Kastro Kanido, Jongwon Kim

A Hierarchically Structured Multi-dimensional Carbon Composite Anchored to Polymer Mat for Super-flexible Supercapacitor

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In situ growth of polyaniline nanowires on interconnected porous carbon nanosheets for high-performance supercapacitors

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Preparation of highly porous fluorine-doped CoFe2O4/graphene sheet nanocomposites for hybrid supercapacitors

Juhyung Choi, Yuanzhe Piao
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Facile synthesis of nickel cobalt hydroxide nanoneedle/graphene hydrogel composite as a binder-free electrode for asymmetric supercapacitor

Jeongmin Kang, Yuanzhe Piao
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Formation of various metal oxide nanostructures by anodization in a hot glycerol electrolytes

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Enhanced Electrochemical Performances of Multiple Heteroatom Doped Carbon Nanocomposites for Supercapacitors

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Formation and Crystallization of Anodic Vandium Oxide Nanostructures

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Electrodeposition of Fe2O3 on modified FTO glass for efficient photoelectrochemical water splitting
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Structure preserving transformation of zeolitic imidazolate frameworks into polyhedral shaped hollow Co-B-O@Co$_3$O$_4$ catalysts for oxygen evolution reaction

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Ultrafine Sn Nanoparticles Loaded on Structurally Well-designed Carbon Frameworks for High-performance Lithium Ion Batteries

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Impregnation of Sn/SnO$_x$ in uniform-sized hollow carbon spheres anchored graphene nanosheet as anode material for lithium-ion batteries

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Preparation of few-layered and vertically aligned MoS$_2$ by employing 3D interconnected porous carbon for electrochemical hydrogen evolution

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What do the Pre-service Teachers Learn from the Overseas Educational Volunteer Activity?
JaeYoung Han
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Applying Systems Thinking For Depth Understanding of Scientific Model
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A new high school integrated science new material part experiment research program
Won Jae Lee
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A Study on Effects of Class based on Science Practices on Cultivating Middle School Students' Science Core Competencies
Jeong Ah Choi, Ae Ja Woo
General Science Education, Ewha Womans University, Korea

The Characteristics of Pre-service Science Teachers' Analogy Generating Processes
Minhwan Kim, Taeehee Noh
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A case study on the university professors’ teaching performance in the college of science and engineering
Nayoon Song, Taeehee Noh, JaeYoung Han
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The Characteristics of Discussions in Socioscientific Issues Classes: Focused on Group and Classroom Discussions
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Graph Construction According to Daily-life and Scientific Contexts: Focused on the Views on the Nature of Scientific Measurement
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Analysis of student recognition of their character competence based on the Collaborative Problem-Solving for Character Competence (CoProC) instruction model in chemistry class
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The Effect of Collaborative Mentoring Program for Beginning Science Teachers' Professional Development
Dojun Jung, Jeonghee Nam
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Comparison of teaching practicum in primary school between South Africa and South Korea
Jeongho Cha
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Application of programs based on scientific history of Volta and Daniel cells
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A Study on the Relationship between National Science Curriculum and Scientific Inquiry through Analysis of Entries in the National Science Fair as a Case of the Implementation of Scientific Education Process
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The Characteristics of Middle School Students’
**ENVR.P-502**

**Photoelectrochemical CO2 Reduction to Formaldehyde and Acetaldehyde**

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**High efficiency planar hybrid perovskite solar cell using zwitter ion in electron transporting layer to achieve high thermal stability**

**Sungjin Park, Taiho Park, Hyuntae Choi, Daehwan Lee, Dasol Chung**

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**ENVR.P-504**

**Shape modeling of ZnSn(OH)$_6$ nanoparticles and their application as quartz crystal microbalance measurements**

**Ji Won Lee, Sang Hun Nam, Jung-Hoon Yu, Ju Won Yang, Jin-hyo Boo**

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**Iron Phosphide in Iron-Treated Heteroatoms-Doped Porous Bio-Carbon as Efficient Electrocatalyst for the Oxygen Reduction Reaction.**

**Emmanuel Batsa Tetteh, Jong-Sung Yu**

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**Predicting mercury bioavailability in artificial and natural soils for earthworm Eisenia fetida using the diffusive gradients in thin films**

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**ENVR.P-507**

**IDENTIFICATION OF MAJOR SOURCES OF MONOMETHYLMERCURY IN LAKES AND RIVERS OF SOUTH KOREA BY MASS BUDGETS ESTIMATION**

**Eunji Jung, Seunghee Han**

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**ENVR.P-508**

**High performance microbial fuel cell**

**Chansoo Choi**

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**Probing Nanomechanical Interaction at the Interface between Biological Membrane and Potentially Toxic Chemical**

**Sohee Park, Dong Soo Hwang**

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**Graduate School of Environmental Studies, Pohang University of Science and Technology, Korea**

**ENVR.P-510**

**Natural organic matter effects on the removal of mercury in groundwater by pumice-supported nanoscale zero-valent iron**

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**ENVR.P-511**

**Electrochemical and photoelectrochemical CO2 reduction with rhenium-based organometallic complexes in aqueous media.**

**Ja Youn Choi, Yoolim Kim, Sang-Youn Chae, Oh-Shim Joo**

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**ENVR.P-512**

**Fe$_3$O$_4$ nanoparticles anchored on 3D porous carbon/MoS$_2$ composites as anodes for lithium-ion batteries with superior cycling performance**

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**ENVR.P-513**

**Ultrafast Microwave-assisted Carbonization and Reduction for Carbon-encapsulated Silicon-graphene nanocomposites as Lithium-ion Battery Anode**

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