Curriculum Vitae

Hyun You Kim (김현유)

Address	Email	Date
Department of Materials Science and Engineering	kimhy@cnu.ac.kr	November
Chungnam National University		2023
Daejeon, Korea	**Webpage**	
	www.cnucmsl.com	

CURRENT STATUS

Professor of Materials Science and Engineering (MSE), Chungnam National University (CNU)
99 Daehak-ro, Yuseong-gu, Daejeon 34134, Republic of Korea (South Korea)

EDUCATION

2005. 03 – 2009. 08	Korea Advanced Institute of Science and Technology (KAIST) Ph.D. in MSE (Advisor: Prof. Hyuck Mo Lee)
2003. 03 – 2005. 02	KAIST, M.S. in MSE (Advisor: Prof. Hyuck Mo Lee)
1998. 03 – 2003. 02	Korea University, B.S. in Materials science and engineering

WORK EXPERIENCE

2022. 03 – present	Professor of MSE, CNU
2018. 03 – 2022. 02	Associate professor of MSE, CNU
2014. 03 – 2018. 02	Assistant professor of MSE, CNU
2012. 10 – 2014. 02	Research Associate, Brookhaven National Laboratory, USA (Supervisor: Dr. Mark M. Hybertsen, and Dr. Ping Liu)
2010. 04 – 2012. 09	Postdoctoral Researcher, The University of Texas at Austin, USA (Supervisor: Prof. Graeme Henkelman)
2009. 09 – 2010. 03	Postdoctoral Researcher, KAIST, Korea (Supervisor: Prof. Hyuck Mo Lee)
2007. 05 –2007. 10	Visiting Student, University of California Santa Barbara, USA (Advisor: Prof. Horia Metiu)

PROFESSIONAL APPOINTMENTS

2022. 03 – present	Vice director, CNU Institute of Technology for Convergence and Innovation (융복합과학원, BK Four 대학원혁신부문 운영)
2019. 05 – present	Editorial member, Current Applied Physics
2014. 03 – present	대한금속재료학회 전산재료과학분과 총무간사
2022. 01 – present	한국재료학회 기술이사/학술이사
2022. 01 – present	한국재료학회 기술이사/학술이사

RESEARCH GROUP

Research Professor	Dr. Habib Ullah
Integrated Ph. D.	Hyuk Choi, Eunji Kang, Ju Hyeok Lee, Jieun yun, Jongseok Kim, Yejung Choi, Hongjin Park
M.S. candidate	Minkyeong Kim
Past members	Dr. Hyesung An (Hyundai steel, Iron making research team, Senior research engineer), Dr. Mi Yoo (Postdoctoral researcher, Virginia Tech. → KRICT), Dr. Hyunwoo Ha (Postdoctoral researcher, Univ. of Texas at Austin → KAIST)

RESEARCH INTERESTS & EXPERTISE

Computational Materials Science (Rational materials design from fundamentals)

- Computational design of functional nanomaterials in atomic precision

- Combinatorial research of experiment and theory for the rational design of functional materials

- Understanding the structure-property relationship using the first principle calculation and the data science

Experimental design of high-performance single-atom catalysts

- Synthesis of ultra-high-density Pt single-atom catalysts

- Rational design of metal-oxide interfaces for catalytic optimization of single atoms

- In situ DRIFTS Infrared spectroscopy analysis of the surface reactive species

Combinatorial study of theory and experiment

- Design of high-performance functional materials:Perovskite LED; ALD processes; SOFC; Catalysts for CO_2 conversion, Chemical H_2 production, Water-splitting, and C1 chemistry; Li-ion batteries; Graphene growth; Thin films

- Combinatorial design of high-performance precious metal single-atom catalysts

- Theoretical analysis of the catalytic function of metal-oxide-based heterogeneous catalysts

- Rational design of heterogeneous catalysts by a combinatorial study of theory and experiment

***Operando/in situ* X-ray analysis**

- Synchrotron-based operando/in situ X-ray analysis (PAL-Pohang Accelerator Lab., ALS-Lawrence Berkeley National Lab., NSLS-II, Brookhaven National Lab., Spring-8, Japan Synchrotron Radiation Research Institute)

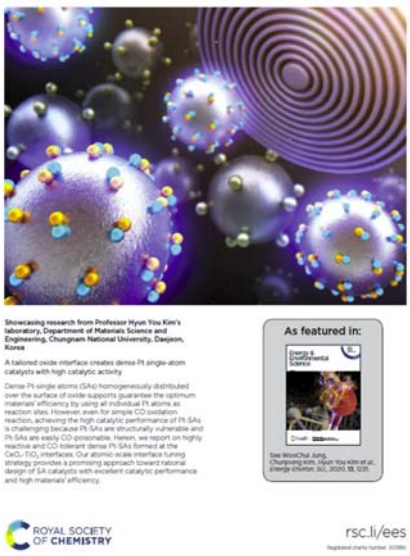
- X-ray absorption spectroscopy (XAS), Scanning Transmission X-ray Microscopy (STXM)

- In situ DRIFTS (Diffuse Reflectance Infrared Fourier Transform Spectroscopy) analysis

RESEARCH HIGHLIGHTS

Design of interface-confined high-performance Pt single-atom catalysts

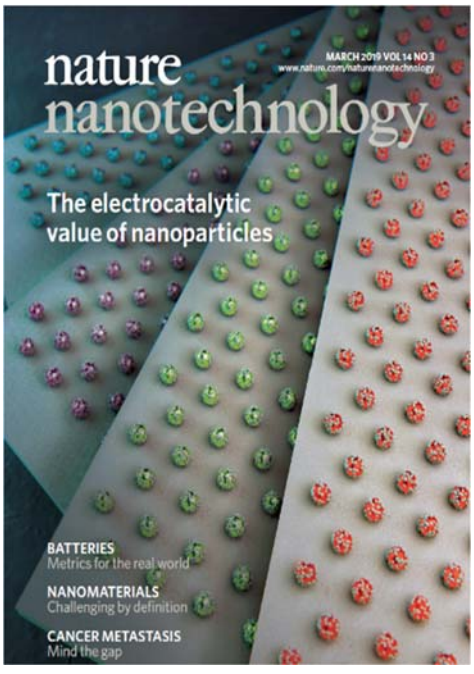
- Combinatorial study of density functional theory calculation, experimental catalyst design, and *operando* synchrotron-based X-ray analysis
- Densely formed Pt single-atoms with improved stability and record-high activity were successfully designed through interface engineering



- Published in *Energy Environ. Sci.* (April 2020, back cover highlighted), *J. Mater. Chem. A* (March 2022, Front cover highlighted, Invited single-atom catalysis special issue), *J. Phys. Chem. Lett.* (February 2022).
- Two relevant papers are under review/in preparation.

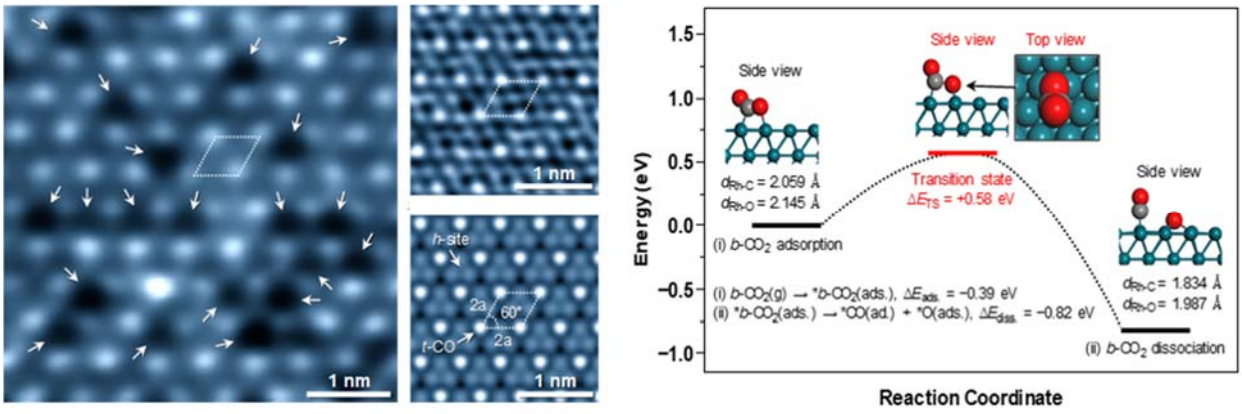
Unraveling the catalytic role of metal-oxide interfaces in high-temperature reactions for solid oxide fuel cell

- Combinatorial study of density functional theory calculation, experimental catalyst design, *in situ* TEM and 3D image analysis, and *operando* X-ray analysis
- Understanding the catalytic function of the Pt-ceria interfaces for H_2 oxidation
- Quantitative analysis of the role of Pt-ceria interfaces and Pt surfaces for CH_4 oxidation
- Fundamental analysis of the catalytic properties of metal-oxide interfaces
- Published in *Nat. Nanotechnol.* (March 2019, front cover highlighted) and *Chem* (March 2022)
- Two short/regular review papers are in preparation.



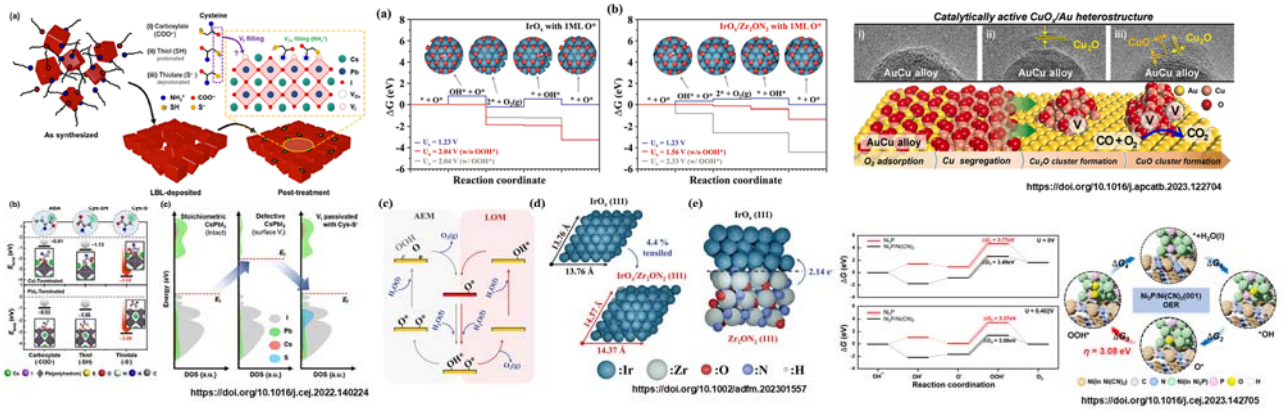
Understanding the fundamentals of catalytic CO_2 activation

- Combinatorial study of density functional theory calculation, *operando* synchrotron-based X-ray analysis, and ambient pressure STM
- Comprehensive understanding of the mechanism of CO_2 activation and dissociation on Rh and TiO_2 surfaces
- Cross-confirming the STM observations with density functional theory calculations and corresponding STM simulations
- Published in *Nat. Commun.* (November 2020), *ACS Catal.* (December 2022)



Theoretical analysis of functional materials

- Supporting relevant experimental findings/Enriching the science behind the experimental observations
- Designing the optimal root toward the experimental development of functional materials
- Expanding the scope of experimental studies by supporting solid and subtle theoretical insights into the findings
- Data-based research of rational design of functional materials
- Understanding the physics and chemistry of : Perovskite-based LED materials (*Chem. Eng. J.* 2020); Perovskite Solar Cell (*Chem. Eng. J.* 2023); SOFC electrodes (*Chem* 2022); CO_2 activation (*Nat. Commun.* 2022); ALD processes (*Chem. Mater.* 2020, *ACS Appl. Mater. Inter.* 2018, *ACS Appl. Mater. Inter.* 2023); Graphene growth (*Adv. Sci.* 2021, *ACS Nano* 2018); Electrocatalysis (*ACS Nano* 2022, *Adv. Func. Mater.* 2023, *Appl. Catal. B* 2023, etc.)



SYNERGISTIC ACTIVITIES/AWARDS

2023. 06	Global Conference on Innovation Materials 2023, GCIM 2023 Session Organizer
2023. 01	대한금속재료학회 전산재료과학 촉매 심포지엄, 조직위원장
2022. 06	Computational Materials Science School: DFT 2022, 조직위원
2022. 01	13th International Workshop on Oxide Surfaces, IWOX-XIII, Local Organizing Committee
2021. 11~ present	국가소재연구데이터센터, 소재 연구데이터 표준화 전문위원회 위원
2021. 10	IUMRS-ICA, Session Organizer
2021. 01	제27회 삼성전자 휴먼테크논문대상 동상 (지도교수)
2020. 12	충남대학교 올해의 공대인상, 우수연구자 부문
2018. 11	ENGE 2018, Session Organizer
2017 ~ present	충남대학교 신소재공학과 BK 사업단 연구부문 부장
2014. 03 ~ 2018. 02	충남대학교 신소재공학과 CK 사업단 교육부문 부장

FUNDING AND SUPPORT

2023. 03 ~ 2026. 02	**한국연구재단 중견연구**	이론과 실험, AI 의 조합연구를 활용한 실용화 단계의 초고밀도 고성능 단원자 촉매 개발
2021. 06 ~ 2030. 05	**중점연구소 지원사업**	사물에너지용 융·복합소재 개발연구
2023. 01 ~ 2023. 12	**한국화학연구원**	전자밀도함수이론 기반 2 차원 소재의 전기적, 화학적 물성 이해
2023. 07 ~ 2024. 06	**삼성전자**	차세대 CMP 연마 입자 개발을 위한 원자 수준 시뮬레이션
2023. 09 ~ 2024. 02	**현대제철**	전산모사를 활용한 고/저품질 석탄 모델링 및 반응 평가
2021. 09 ~ 2023.03	**삼성전자 미래기술육성센터**	결함 제어를 통한 신규 비납계 유사 페로브스카이트 청색 소재 및 LED 소자 응용
2017 ~ 2023	**한국연구재단 중견연구**	2 원계 하이브리드 산화물과 귀금속의 계면 디자인을 통한 고효율 단원자 촉매 개발 전산모사와 실험의 조합연구를 이용한 산화물 복합체 활용 차세대 고효율 촉매 디자인
2017 ~ 2020	**기초연구실 (BRL) 지원사업**	고효율, 광대역 플라즈몬 흡수체 기반 태양-증기 생성 기초연구실
2015~ 2018	**한국연구재단 기본연구**	저비용 고효율 Au 및 Ag 이원계 가변형 나노와이어 촉매 시스템 개발

5 RECENT REPRESENTATIVE PUBLICATIONS

(1) Taek-Seung Kim, Hyuk Choi, Daeho Kim, Hee Chan Song, Yusik Oh, Beomgyun Jeong, Jouhahn Lee, Ki-Jeong Kim, Jae Won Shin, Hye Ryung Byon, Ryong Ryoo, **Hyun You Kim***, Jeong Young Park*

Catalytic Boosting on AuCu Bimetallic Nanoparticles by Oxygen-Induced Atomic Restructuring

Applied Catalysis B: Environmental, 331, 122704 (2023)

(2) Siwon Lee, Hyunwoo Ha, Kyung Taek Bae, Seunghyun Kim, Hyuk Choi, Juhyeok Lee, Jun Hyuk Kim, Jongsu Seo, Jin Seok Choi, Yong-Ryun Jo, Bong-Joong Kim, Yongsoo Yang, Kang Taek Lee*,

Hyun You Kim*, and WooChul Jung*

A Measure of Active Interfaces in Supported Catalysts for High-temperature Reactions

Chem, 8, 815 (2022)

(3) Jeongjin Kim, Hyunwoo Ha, Won Hui Doh, Kohei Ueda, Kazuhiko Mase, Hiroshi Kondoh, Bongjin Simon Mun*, **Hyun You Kim*** and Jeong Young Park*

How Rh Surface Breaks CO_2 Molecules under Ambient Pressure

Nature Communications, 11, 5649 (2020)

(4) Mi Yoo, Young-Sang Yu, Hyunwoo Ha, Siwon Lee, Jin-Seok Choi, Sunyoung Oh, Eunji Kang, Hyuk Choi, Hyesung An, Kug-Seung Lee, Jeong Young Park, Richard Celestre, Matthew A. Marcus, Kasra Nowrouzi, Doug Taube, David A. Shapiro, WooChul Jung*, Chunjoong Kim*, and **Hyun You Kim***

A Tailored Oxide Interface Creates Dense Pt Single-Atom Catalysts with High Catalytic Activity

Energy & Environmental Science, 13, 1231 (2020)

(5) Yoonseok Choi, Seung Keun Cha, Hyunwoo Ha, Siwon Lee, Hyun Kook Seo, Jeong Yong Lee, **Hyun You Kim***, Sang Ouk Kim*, and WooChul Jung*

Unraveling Inherent Electrocatalysis of Mixed-conducting Oxide Activated by Metal Nanoparticle for Fuel Cell Electrodes

Nature Nanotechnology, 14, 245 (2019)

RECENT PUBLICATIONS (2019 to present)

Corresponding author: denoted with *, Contributing author: colored in gray

(1) Vandung Dao†, Hyuk Choi†, Sunny Yadava, Chiyeop Kim, Tuan Van Nguyen, Chen Kai, Periyayya Uthirakumar, Quyet Van Le, **Hyun You Kim***, and, In-Hwan Lee*

$LaCeO_x$ coupled N-doped graphene/Ru single-atoms as a binary-site catalyst for efficient hydrogen evolution based on hydrogen spillover

Applied Catalysis B: Environmental, 343, 123452 (2024)

(2) Se Yeon Park†, Dong-Bum Seo†, Hyuk Choi†, Saewon Kang, Soonmin Yim, Jin Kim, Jung Jae Hwan, Ju Hyeok Lee, Sun Sook Lee, Eui-Tae Kim, Dae Ho Yoon, **Hyun You Kim***, Wooseok Song*, and Ki-Seok An*

Structural instability stimulated heteroatoms co-doping of two-dimensional quaternary semiconductor for optoelectronic applications

Advanced Functional Materials, Accepted (2023)

(3) Baekman Kim, Changjae Lee, Jongseok Kim, Hyuk Choi, Hyungju Ahn, Dongkyu Kim, Yun Ho Kim*, **Hyun You Kim***, and Dong Ki Yoon*

Synergistic Effect of Fluorination and Molecular Orientational Order on the Dielectric Properties of Low-κ Liquid Crystal Polymer Film

Chemistry of Materials, Accepted (2023)

(4) Woo Hyeon Jeong, Seongbeom Lee, Hochan Song, Xinyu Shen, Hyuk Choi, Yejung Choi, Jonghee Yang, Jung Won Yoon, Zhongkai Yu, Jihoon Kim, Gyeong Eun Seok, Jeongjae Lee, **Hyun You Kim**, Henry J. Snaith, Hyosung Choi*, Sung Heum Park*, and Bo Ram Lee*

Synergistic Surface Modification for High Efficiency Perovskite Nanocrystal Light-Emitting Diodes: Divalent Metal Ion Doping and Halide-based Ligand Passivation

Advanced Science, Accepted (2023)

(5) Minkyun Son†, Hanbyeol Jang†, Dong-Bum Seo†, Ju Hyeok Lee, Jin Kim, Minsu Kim, Saewon Kang, Soonmin Yim, Wooseok Song, Jung-Woo Yoo, **Hyun You Kim**, Sun Sook Lee, and Ki-Seok An*

High-Performance Infrared Photodetectors Driven by Interlayer Exciton in a van der Waals Epitaxy Grown HfS_2/MoS_2 Vertical Heterojunction

Advanced Functional Materials, Accepted (2023)

(6) Young Eun Kim, Jeong Eun Park, Ju Hyeok Lee, Hyuk Choi, Wonhee Lee, You Na Ko, **Hyun You Kim**, and Ki Tae Park,*

Ag Decorated-Cu_2O Catalysts with Enhanced Selectivity of CO_2 Electroreduction toward C^{2+} Products

Journal of Environmental Chemical Engineering, 11, 111028 (2023)

(7) Dong-Hyun Lee*, Yun Hee An, Yakai Zhao*, Ju Hyeok Lee, **Hyun You Kim**, You Sub Kim, and Soo Yeol Lee

A novel methodology to estimate hydrogen diffusivity and its applications in revealing hydrogen effects in CoCrNi medium-entropy alloy versus 316L stainless steel

International Journal of Plasticity, 169, 103737 (2023)

(8) Hyunwoo Ha, Changsoo Lee, Joon Sik Park, Choong-Heui Chung, Sangyeob Lee, Graeme Henkelman, **Hyun You Kim***, and Kihyun Shin*

Genetically Evolved Graphene Encapsulated Random Alloy Nanoparticles for Li-Air Battery

Catalysis Today, 424, 114303 (2023)

(9) Dong-Gyu Kim‡, Hyuk Choi‡, Yoon-Seo Kim, Dong-Hyeon Lee, Hye-Jin Oh, Ju Hyeok Lee, Junghwan Kim, Seunghee Lee, Bongjin Kuh, Taewon Kim, Hyun You Kim*, and Jin-Seong Park*

Selectively Nitrogen Doped ALD-IGZO TFTs with Extremely High-mobility and Reliability

ACS Applied Materials and Interfaces,15, 31652 (2023)

(10) Jiwon Kim, Hyung Wook Choi, Jongseok Kim, Jung Hyeon Yoo, Dong In Jeong, Ui Young Lee, Hyuk Choi, Bong Kyun Kang, Ki-Seok An*, **Hyun You Kim***, and Dae Ho Yoon*

Unveiling reactive origin through the in situ 2D core-shell formation, $Ni(CN)_2@Ni_2P$, derived from Hofmann-type MOF for water oxidation

Chemical Engineering Journal, 465, 142705 (2023)

(11) Taek-Seung Kim‡, Hyuk Choi‡, Daeho Kim, Hee Chan Song, Yusik Oh, Beomgyun Jeong, Jouhahn Lee, Ki-Jeong Kim, Jae Won Shin, Hye Ryung Byon, Ryong Ryoo, **Hyun You Kim***, and Jeong Young Park*

Catalytic Boosting on AuCu Bimetallic Nanoparticles by Oxygen-Induced Atomic Restructuring

Applied Catalysis B: Environmental, 331, 122704 (2023)

(12) Changsoo Lee, Kihyun Shin, Youngtae Park, Young Hwa Yoon, MinJoong Kim, Jae Hun Lee, Sang-Kyung Kim, Hyuck Mo Lee, **Hyun You Kim*,** Sechan Lee*, Graeme Henkelman*, and Hyun-Seok Cho*

Catalyst–Support Interactions in Zr_2ON_2-supported IrOx Electrocatalysts to Break the Trade-off Relationship between the Activity and Stability in the Acidic Oxygen Evolution Reaction

Advanced Functional Materials, 2301557 (2023)

(13) Se-Ho Kim†, Kihyun Shin†, Xuyang Zhou, Chanwon Jung, **Hyun You Kim**, Stella Pedrazzini, Michelle Conroy, Graeme Henkelman, and Baptiste Gault*

Atom probe analysis of $BaTiO_3$ enabled by metallic shielding

Scripta Materialia, 37, 2178 (2023)

(14) Habib Ullah, Zakir Ullah, Zafar A. K. Khattak, Mohsin Ali Marwat, Baoyi Yu, Hyung Wook Kwon, **Hyun You Kim***, and Francis Verpoort*

Formation of Value-added Cyclic Carbonates via Coupling of Epoxides and CO_2 by Ruthenium Pincer Hydrazone Complexes under Atmospheric Pressure

Energy & Fuels, 37, 2178 (2023)

(15) Ari Shin, Bong-Kyu Kim, Minkyoung Kim, Minkyung Jeong, Donggil Lee, Hyunwoo Ha, Soo Yeol Lee, Chunjoong Kim, Soo hyung Park, **Hyun You Kim**, Chang-Yong Nam, and Jun Hyun Han*

Microstructural and physicochemical origins of electroless copper deposition on graphite enhanced by acid pretreatment

Materials Chemistry and Physics, 295, 1 (2023)

(16) Hochan Song, Seul Gi Lim, Jonghee Yang, Jeongjae Lee, Hyuk Choi, Ju Hyeok Lee, **Hyun You Kim***, Bo Ram Lee*, and Hyosung Choi*

On the surface passivating principle of functional thiol towards efficient and stable perovskite nanocrystal solar Cells

Chemical Engineering Journal, 454, 140224 (2023)

(17) Eunji Kang†, Jungwoo Choi†, Hyuk Choi†, Jieun Yun, Ju Hyeok Lee, Mi Yoo, Hyuck Mo Lee*, and **Hyun You Kim***

Gold Single-Atoms Confined at the CeO_x-TiO_2 Interfaces with Enhanced Low-Temperature Activity toward CO Oxidation

Nanotechnology, 34, 45703 (2023)

(18) Xiao Tong, Scott P. Price, Jeremy C. Robins, Claron Ridge, **Hyun You Kim**, Paul Kemper, Horia Metiu, Michael T. Bowers, and Steven K. Buratto*

VO-Stabilized H_2O Adsorption on a TiO_2 (110) Surface at Room Temperature

Journal of Physical Chemistry C, 126, 17975 (2022)

(19) Ye Eun Jeon†, You Na Ko†, Jongseok Kim, Hyuk Choi, Wonhee Lee, Young Eun Kim, Doohwan Lee, **Hyun You Kim**, and Ki Tae Park*

Selective Production of Ethylene from CO_2 over CuAg Tandem Electrocatalysts

Journal of Industrial and Engineering Chemistry, 116, 191 (2022)

(20) Daniel Tan, Wonhee Lee, Young Eun Kim, You Na Ko, Min Hye Youn, Ye Eun Jeon, Jumi Hong, Jeong Eun Park, Jaeho Seo, Soon Kwan Jeong, Yejung Choi, Hyuk Choi, **Hyun You Kim***, Ki Tae Park*

In-Bi Electrocatalyst for the Reduction of CO_2 to Formate in a Wide Potential Window

ACS Applied Materials & Interfaces, 14, 28890 (2022)

(21) Dung Van Dao, Hyuk Choi, Thuy T. D. Nguyen, Sang-Woo Ki, Gyu-Cheol Kim, Hoki Son, Jin-Kyu Yang, Yeon-Tae Yu, **Hyun You Kim***, and In-Hwan Lee*

Light to Light-to-Hydrogen Improvement Based on Three-Factored Au@CeO_2/Gr Hierarchical Photocatalysts

ACS Nano, 16, 7848 (2022)

(22) Mi Yoo†, Eunji Kang†, Hyunwoo Ha†, Jieun Yun†, Hyuk Choi, Tae Jun Kim, Jiho Min, Jin-Seok Choi, Kug-Seung Lee, Namgee Jung, Sungtak Kim, Chunjoong Kim, Young-Sang Yu*, and **Hyun You Kim***

Interspersing CeO_x clusters to the Pt-TiO_2 interfaces for catalytic promotion of TiO_2-supported Pt nanoparticles

Journal of Physical Chemistry Letters, 13, 1719 (2022)

(23) Siwon Lee‡, Hyunwoo Ha‡, Kyung Taek Bae‡, Seunghyun Kim, Hyuk Choi, Juhyeok Lee, Jun Hyuk Kim, Jongsu Seo, Jin Seok Choi, Yong-Ryun Jo, Bong-Joong Kim, Yongsoo Yang, Kang Taek Lee*, **Hyun You Kim***, and WooChul Jung*

A Measure of Active Interfaces in Supported Catalysts for High-temperature Reactions

Chem, 8, 815 (2022)

(24) Mi Yoo‡, Eunji Kang‡, Hyuk Choi‡, Hyunwoo Ha, Hanseul Choi, Jin-Seok Choi, Kug-Seung Lee, Richard Celestre, David A. Shapiro, Jeong Young Park*, Chunjoong Kim*, Young-Sang Yu*, and **Hyun You Kim***

Enhancing the inherent catalytic activity and stability of TiO_2 supported Pt single-atoms at CeO_x-TiO_2 interfaces

Journal of Materials Chemistry A, 10, 5942 (2022)

(25) Sinmyung Yoon‡, Hyunwoo Ha‡, Jihun Kim, Eonu Nam, Mi Yoo, Beomgyun Jeong, **Hyun You Kim***, and Kwangjin An*

Influence of Pt Size and CeO_2 Morphology at the Pt-CeO_2 Interface in CO Oxidation

Journal of Materials Chemistry A, 9, 26381 (2021)

(26) Woo Seok Yang*, Seungoh Han, Gyu-Ri Lim, **Hyun You Kim**, Sung-Hoon Hong

Effects and Mechanism of Surface Water Wettability and Operating Frequency on Response Linearity of Flexible IDE Capacitive Humidity Sensor

Sensors, 21, 6633 (2021)

(27) Ha Tran Huu, Ngoc Hung Vu, Hyunwoo Ha, Joonhe Moon, **Hyun You Kim**, and Won Bin Im*

Sub-micro droplet reactors for green synthesis of Li_3VO_4 anode materials in lithium ion batteries

Nature Communications, 12, 3081 (2021)

(28) Yire Han, Byeong-Ju Park, Ji-Ho Eom, Venkatraju Jella, Swathi Ippili, SVN Pammi, Jin-Seok Choi, Hyunwoo Ha, Hyuk Choi, Cheolho Jeon, Kangho Park, Hee-Tae Jung, Sungmi Yoo, **Hyun You Kim***, Yun Ho Kim*, and Soon-Gil Yoon*

Direct Growth of Highly Conductive Large-Area Stretchable Graphene

Advanced Science, 8, 2003697 (2021)

(29) Dung Van Dao, Thuy T. D. Nguyen, Periyayya Uthirakumar, Yeong-Hoon Cho, Gyu-Cheol Kim, Jin-Kyu Yang, Duy-Thanh Tran, Thanh Duc Le, Hyuk Choi, **Hyun You Kim**, Yeon-Tae Yu, and In-Hwan Lee*

Insightful understanding of hot-carrier generation and transfer in plasmonic Au@CeO_2 core-shell photocatalysts for light-driven hydrogen evolution improvement

Applied Catalysis B: Environmental, 286, 119947 (2021)

(30) N. S. M. Viswanath, G. Krishnamurthy Grandhi, Ha Tran Huu, Hyuk Choi, Ha Jun Kim, **Hyun You Kim***, Chan-Jin Park*, and Won Bin Im*

Zero-Thermal-Quenching and Improved Chemical Stability of a UCr4C4-Type Phosphor via Crystal Site Engineering

Chemical Engineering Journal, 420, 127664 (2021)

(31) Young-Ahn Lee, Seungik Han, Le Thai Duy, Hyesung An, Jucheol Park, Ranveer Singh, **Hyun You Kim**, and Hyungtak Seo*

Confined Interfacial Alloying of Multilayered Pd-Ni Nanocatalyst for Widening Hydrogen Detection Capacity

Sensors & Actuators B: Chemical, 330, 129378 (2021)

(32) Hyeong Jin Kim, Hyuk Choi, Abhishek Kumar Sharma, Won G. Hong, Koo Shin, Hocheol Song, **Hyun You Kim**, and Young Joon Hong*

Recyclable aqueous metal adsorbent: Synthesis and Cu(II) sorption characteristics of ternary nanocomposites of Fe3O4 nanoparticles@graphene–poly-N-phenylglycine nanofibers

Journal of Hazardous Materials, 401, 123283 (2021)

(33) Jeongjin Kim‡, Hyunwoo Ha‡, Won Hui Doh‡, Kohei Ueda, Kazuhiko Mase, Hiroshi Kondoh, Bongjin Simon Mun*, **Hyun You Kim*** and Jeong Young Park*

How Rh surface breaks CO_2 molecules under ambient pressure

Nature Communications, 11, 5649 (2020)

(34) Jung-Hoon Lee, Jiazhen Sheng, Hyesung An, TaeHyun Hong, **Hyun You Kim**, HyunKyung Lee, Jang Hyeon Seok, Jung Woo Park, Jun Hyung Lim*, and Jin-Seong Park*

Metastable Rhombohedral Phase Transition of Semiconducting Indium Oxide Controlled by Thermal Atomic Layer Deposition

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