
CURRICULUM VITAE

Le He, Professor, Associate Dean
Institute of Functional Nano & Soft Materials
Soochow University

Tel: +86-512-65882214
Cell: +86-18625085073
Email: lehe@suda.edu.cn

EDUCATION

	Institution	Degree
09/2008 – 12/2013	University of California, Riverside Department of Chemistry	Ph. D in Chemistry (Mentor: Prof. Yadong Yin)
09/2004 – 06/2008	Nanjing University, Nanjing, China Department of Chemistry	B. S. in Chemistry (Mentor: Prof. Zheng Hu)

PROFESSIONAL EXPERIENCE

2015 -	Professor, Institute of Functional Nano and Soft Materials Soochow University
2013 – 2015	Postdoctoral Fellow, Department of Chemistry University of Toronto (with Prof. Geoffrey Alan Ozin)

AWARDS AND HONORS

2021	2021 CAPA Distinguished Faculty Award (China)
2021	Journal of Materials Chemistry C Emerging Investigator
2020	International Forum on Advanced Materials Excellent Young Scientists Award
2019	Innovative and Entrepreneurial Talents Program of Jiangsu Province
2015	Banting Postdoctoral Fellowship Award
2013	Chinese Government Award for Outstanding Self-Financed Students Abroad
2013	Recipient of Alexander von Humboldt Fellowship for Postdoctoral Researchers
2013	MRS Spring Meeting Graduate Student Award
2013	MRS Spring Meeting Outstanding Poster Award
2012	Dissertation-Year Programs Fellowship of University of California, Riverside
2008	Distinguished Undergraduate of Nanjing University

SELECTED PUBLICATIONS:

- 1 Cai, M.[†]; Wu, Z.[†]; Li, Z.[†]; Wang, L.; Sun, W.; Tountas, A. A.; Li, C.; Wang, S.; Feng, K.; Xu, A. B.; Tang, S.; Tavasoli, A.; Peng, M.; Liu, W.; Helmy, A. S.; **He, L.***; Ozin, G.*; Zhang, X.*, "Greenhouse Inspired Supra-Photothermal CO₂ Catalysis", *Nat. Energy* **2021**, 6, 807-814. ([†]equal contribution)
- 2 Zhu, Z.[†]; Feng, K.[†]; Li, C.*; Tang, R.; Xiao, M.; Song, R.; Yang, D.; Yan, B.*; **He, L.***, "Stabilization of Exposed Metal Nanocrystals in High-Temperature Heterogeneous Catalysis", *Adv. Mater.* **2021**, DOI: 10.1002/adma.202108727. ([†]equal contribution)
- 3 Feng, K.; Tian, J.; Guo, M.; Wang, Y.; Wang, S.; Wu, Z.; Zhang, J.; **He, L.***; Yan, B.*, "Experimentally unveiling the

- origin of tunable selectivity for CO₂ hydrogenation over Ni-based catalysts", *Appl. Catal., B* **2021**, 292, 120191.
- 4 Wu, Z.; Li, C.*; Li, Z.; Feng, K.; Cai, M.; Zhang, D.; Wang, S.; Chu, M.; Zhang, C.; Shen, J.; Huang, Z.; Xiao, Y.; Ozin, G.*; Zhang, X.*; **He, L.***, "Niobium and Titanium Carbides (MXenes) as Superior Photothermal Supports for CO₂ Photocatalysis", *ACS Nano* **2021**, 15, 5696-5705.
 - 5 Feng, K.†; Wang, S.†; Zhang, D.†; Wang, L.; Yu, Y.; Feng, K.; Li, Z.; Zhu, Z.; Li, C.; Cai, M.; Wu, Z.; Kong, N.; Yan, B.; Zhong, J.*; Zhang, X.*; Ozin, G.*; **He, L.***, "Cobalt Plasmonic Superstructures Enable Almost 100% Broadband Photon Efficient CO₂ Photocatalysis", *Adv. Mater.* **2020**, 32, 2000014. (†equal contribution)
 - 6 Fang, Y.†; Lv, K.†; Li, Z.; Kong, N.; Wang, S.; Xu, A.B.; Wu, Z.; Jiang, F.; Li, C.*; Ozin, G.*; **He, L.***, "Solution-Liquid-Solid Growth and Catalytic Applications of Silica Nanorod Arrays", *Adv. Sci.* **2020**, 7, 2000310.
 - 7 Li, H.†; Li, C.†; Sun, W.; Wang, Y.; Hua, W.; Liu, J.; Zhang, S.; Chen, Z.; Wang, S.; Wu, Z.; Zhu, Q.; Tang, R.; Yu, J.; **He, L.***; Ozin, A. G.*; Zhang, X.*, "Single-Stimulus-Induced Modulation of Multiple Optical Properties", *Adv. Mater.* **2019**, 31, 1900388. (†equal contribution)
 - 8 Wang, L.†; Ghoussoub, M.†; Wang, H.; Dong, Y.; Shao, Y.; Tountas, A.; Wood, T.; Li, H.; Sun, W.; Xia, M.; Li, Y.; Wang, S.; Jia, J.; Qiu, C.; Qian, C.; **He, L.***; Zhang, X.*; Ozin, G.*, "Photocatalytic Hydrogenation of Carbon Dioxide with High Selectivity to Methanol at Atmospheric Pressure", *Joule* **2018**, 2, 1369-1381. (†equal contribution)
 - 9 Li, C.; Zhang, S.; Zhang, B.; Liu, J.; Zhou, H.; Solovev, A.; Tang, R.; Bao, F.; Yu, J.; Zhang, Q.; Lifshitz, Y.*; **He, L.***; Zhang, X.*, "Local-Curvature-Controlled Non-Epitaxial Growth of Hierarchical Nanostructures", *Angew. Chem. Int. Ed.* **2018**, 57, 3772-3776.
 - 10 Sun, W.†; Qian, C.†; **He, L.***; Ghuman, K.; Wong, A.; Jia, J.; O'Brien, P.; Reyes, L.; Wood, T.; Helmy, A.; Mims, C.; Singh, C.; Ozin, G.*, "Heterogeneous Reduction of Carbon Dioxide by Hydride-Terminated Silicon Nanocrystals", *Nat. Commun.* **2016**, 7, 12553. (†equal contribution)
 - 11 **He, L.***; Wood, T.; Wu, B.; Dong, Y.; Hoch, L.; Reyes, L.; Wang, D.; Kübel, C.; Qian, C.; Jia, J.; Liao, K.; O'Brien, P.; Sandhel, A.; Loh, J.; Szymanski, P.; Kherani, N.; Sum, T.; Mims, C.; and Ozin, G.*, "Spatial Separation of Charge Carriers in In₂O_{3-x}(OH)_y Nanocrystal Superstructures for Enhanced Gas Phase Photocatalytic Activity", *ACS Nano* **2016**, 10, 5578-5586.
 - 12 **He, L.†**; Janner, M.†; Lu, Q.; Wang, M.; Ma, H. and Yin, Y.*, "Magnetochromatic Thin Film Microplates", *Adv. Mater.* **2015**, 27, 86-92. (†equal contribution)
 - 13 **He, L.;** Wang, M.; Zhang, Q.; Lu, Y.; Yin, Y.*, "Magnetic Assembly and Patterning of General Nanoscale Materials through Nonmagnetic Templates", *Nano Lett.* **2013**, 13, 264-271.
 - 14 **He, L.;** Wang, M.; Ge, J.; Yin, Y.*, "Magnetic Assembly Route to Colloidal Responsive Photonic Nanostructures", *Acc. Chem. Res.* **2012**, 45, 1431-1440. (Cover article)
 - 15 **He, L.;** Hu, Y.; Wang, M.; Yin, Y.*, "Determination of Solvation Layer Thickness by A Magneto-photonic Approach", *ACS Nano.* **2012**, 6, 4196-4202.
 - 16 **He, L.;** Hu Y.; Kim, H.; Ge, J.; Kwon, S. and Yin, Y.*, "Magnetic Assembly of Nonmagnetic Particles into

Photonic Crystal Structures", *Nano Lett.* **2010**, *10*, 4708–4714.

FULL PUBLICATION LIST

Total publications: 94; Total Citations: >4000; H-index: 38

Publications as first or corresponding authors: 38

- 1 Cai, M.[†]; Wu, Z.[†]; Li, Z.[†]; Wang, L.; Sun, W.; Tountas, A. A.; Li, C.; Wang, S.; Feng, K.; Xu, A. B.; Tang, S.; Tavasoli, A.; Peng, M.; Liu, W.; Helmy, A. S.; **He, L.***; Ozin, G.*; Zhang, X.*, "Greenhouse Inspired Supra-Photothermal CO₂ Catalysis", *Nat. Energy* **2021**, *6*, 807-814. (†equal contribution)
- 2 Zhu, Z.[†]; Feng, K.[†]; Li, C.*; Tang, R.; Xiao, M.; Song, R.; Yang, D.; Yan, B.*; **He, L.***, "Stabilization of Exposed Metal Nanocrystals in High-Temperature Heterogeneous Catalysis", *Adv. Mater.* **2021**, DOI: 10.1002/adma.202108727. (†equal contribution)
- 3 Wu, Z.; Li, C.*; Li, Z.; Feng, K.; Cai, M.; Zhang, D.; Wang, S.; Chu, M.; Zhang, C.; Shen, J.; Huang, Z.; Xiao, Y.; Ozin, G.*; Zhang, X.*; **He, L.***, "Niobium and Titanium Carbides (MXenes) as Superior Photothermal Supports for CO₂ Photocatalysis", *ACS Nano* **2021**, *15*, 5696-5705.
- 4 Feng, K.; Tian, J.; Guo, M.; Wang, Y.; Wang, S.; Wu, Z.; Zhang, J.; **He, L.***; Yan, B.*, "Experimentally unveiling the origin of tunable selectivity for CO₂ hydrogenation over Ni-based catalysts", *Appl. Catal., B* **2021**, *292*, 120191.
- 5 Lou, D.[†]; Zhu, Z.[†]; Xu, Y. F.[†]; Li, C.*; Feng, K.; Zhang, D.; Lv, K.; Wu, Z.; Zhang, C.; Ozin, G.*; **He, L.***; Zhang, X., "A Core-Shell Catalyst Design Boosts the Performance of Photothermal Reverse Water Gas Shift Catalysis", *Sci. China Mater.* **2021**, *64*, 2212-2220. (†equal contribution)
- 6 Tang, R.[†]; Zhu, Z.[†]; Li, C.*; Xiao, M.; Wu, Z.; Zhang, D.; Zhang, C.; Xiao, Y.; Chu, M.; Genest, A.; Rupprechter, G.; Zhang, L.; Zhang, X.*; **He, L.***, "Ru-Catalyzed Reverse Water Gas Shift Reaction with Near-Unity Selectivity and Superior Stability", *ACS Materials Lett.* **2021**, in press. (†equal contribution)
- 7 Xiao, M.; Liu, J.*; Chen, Z.; Liu, W.; Zhang, C.; Yu, Y.; Li, C.*; **He, L.***, "Magnetic assembly and manipulation of Janus photonic crystal supraparticles from a colloidal mixture of spheres and ellipsoids", *J. Mater. Chem. C* **2021**, *9*, 11788-11793.
- 8 Lou, D.[†]; Xu, A.[†]; Fang, Y.; Cai, M.; Lv, K.; Zhang, D.; Wang, X.; Huang, Y.*; Li, C.*; **He, L.***, "Cobalt-Sputtered Anodic Aluminum Oxide Membrane for Efficient Photothermal CO₂ hydrogenation", *ChemNanoMat* **2021**, *7*, 1008-1012.
- 9 Shen, J.[†]; Wu, Z.[†]; Li, C.*; Zhang, C.; Genest, A.; Rupprechter, G.; **He, L.***, "Emerging applications of MXene materials in CO₂ photocatalysis", *Flatchem* **2021**, *28*, 100252. (†equal contribution)
- 10 Wu, Z.; Zhang, C.; Li, C.*; **He, L.***, "Research Progress on Magnetically Responsive Smart Optical Nanomaterials", *Materials China* **2021**, *40*, 001-10.
- 11 Zhang, D.[†]; Lv, K.[†]; Li, C.; Fang, Y.; Wang, S.; Chen, Z.; Wu, Z.; Guan, W.; Lou, D.; Sun, W.*; Yang, D.; **He, L.***; Zhang, X.*, "All-Earth-Abundant Photothermal Silicon Platform for CO₂ Catalysis with Nearly 100% Sunlight Harvesting Ability", *Solar RRL* **2021**, *5*, 2000387. (†equal contribution)
- 12 Wang, X.; Zhu, Z.; Wu, Z.; Zhang, C.; Chen, Z.; Xiao, M.; Li, C.*; **He, L.***, "Preparation and Photothermal Catalytic Application of Powder-form Cobalt Plasmonic Superstructures". *Journal of Inorganic Materials*, **2021**, DOI: 10.15541/jim20210458.
- 13 Wang, S.; Tountas, A. A.; Pan, W.; Zhao, J.; **He, L.**; Sun, W.*; Yang, D.*; Ozin, G.*, "CO₂ Footprint of Thermal Versus Photothermal CO₂ Catalysis", *Small* **2021**, DOI:10.1002/sml.202007025

- 14 Mujtaba, J.; He, L.; Zhu, H.; Xiao, Z.; Huang, G.*; Solovev, A.*; Mei, Y., "Co₉S₈ Nanoparticles for Hydrogen Evolution", *ACS Appl. Nano Mater.* **2021**, *4*, 1776-1785.
- 15 Feng, K.†; Wang, S.†; Zhang, D.†; Wang, L.; Yu, Y.; Feng, K.; Li, Z.; Zhu, Z.; Li, C.; Cai, M.; Wu, Z.; Kong, N.; Yan, B.; Zhong, J.*; Zhang, X.*; Ozin, G.*; **He, L.***, "Cobalt Plasmonic Superstructures Enable Almost 100% Broadband Photon Efficient CO₂ Photocatalysis", *Adv. Mater.* **2020**, *32*, 2000014. (†equal contribution)
- 16 Fang, Y.†; Lv, K.†; Li, Z.; Kong, N.; Wang, S.; Xu, A.B.; Wu, Z.; Jiang, F.; Li, C.*; Ozin, G.*; **He, L.***, "Solution-Liquid-Solid Growth and Catalytic Applications of Silica Nanorod Arrays", *Adv. Sci.* **2020**, *7*, 2000310.
- 17 Cai, M.; Li, C.*; **He, L.***, "Enhancing Photothermal CO₂ Catalysis by Thermal Insulating Substrates", *Rare Met.* **2020**, *39*, 881–886.
- 18 Zhang, C.†; Wu, Z.†; Chen, Z.; Pan, L.*; Li, J.; Xiao, M.; Wang, L.*; Li, H.; Huang, Z.; Xu, A.B.; Li, C.*; **He, L.**, "Photonic nanostructures of nanodiscs with multiple magneto-optical properties", *J. Mater. Chem. C.* **2020**, *8*, 16067-16072.
- 19 Kong, N.; Han, B.; Li, Z.; Fang, Y.; Feng, K.; Wu, Z.; Wang, S.; Xu, A. B.; Yu, Y.; Li, C.*; Lin, Z.*; **He, L.***, "Ruthenium Nanoparticles Supported on Mg(OH)₂ Microflowers as Catalysts for Photothermal Carbon Dioxide Hydrogenation", *ACS Appl. Nano Mater.* **2020**, *3*, 3028-3033.
- 20 Li, C.†; Zhang, J.†; Wang, S.; Zhu, Z.; Li, H.*; Xu, A. B.; Yu, Y.; Wang, X.; Yao, J.; Wang, L.*; Solovev, A. A.; **He, L.***, "Silica Nanocapsules with Unusual Shapes Accessed by Simultaneous Growth of the Template and Silica Nanostructure", *Chem. Mater.* **2020**, *32*, 575-581. (†equal contribution)
- 21 Huang, S.; Zhang, B.*; Shao, Z.; **He, L.**; Zhang, Q.; Jie, J.*; Zhang, X.*, "Ultraminiaturized Stretchable Strain Sensors Based on Single Silicon Nanowire", *Nano Lett.* **2020**, *20*, 2478-2485.
- 22 Han, N. †; Ding, P.†; **He, L.**; Li, Y.*; Li, Y.*, Promises of Main Group Metal-Based Nanostructured Materials for Electrochemical CO₂ Reduction to Formate. *Adv. Energy Mater.* **2020**, *10*, 1902338. (†equal contribution)
- 23 Wang, S.; Yu, Y.; **He, L.**; Zhang, D.; Ye, M.*, "Design of magnetic nanoparticles with high magnetic separation efficiencies and durability for Cu²⁺ adsorption", *Nanotechnology* **2020**, *31*, 085710
- 24 Li, C.†; Yu, Y.†; Wang, L.*; Zhang, S.; Liu, J.; Zhang, J.; Xu, A.B.; Wu, Z.; Tong, J.; Wang, S.; Xiao, M.; Fang, Y.; Yao, J.; Solovev, A. A.; Dong, B.; **He, L.***, "A step-by-step strategy for controlled preparations of complex heterostructured colloids", *Chem. Mater.* **2019**, *31*, 9513-9521. (†equal contribution)
- 25 Liu, J.†; Xiao, M.†; Li, C.*; Li, H.; Wu, Z.; Zhu, Q.; Tang, R.; Xu, A.B.; **He, L.***, "Rugby-ball-like photonic crystal supraparticles with non-close-packed structures and multiple magneto-optical responses", *J. Mater. Chem. C* **2019**, *7*, 15042-15048. (†equal contribution)
- 26 Zhang, B.; Jie, J.*; Shao, Z.; Huang, S.; **He, L.***; Zhang, X.*, "One-step growth of large-area silicon nanowire fabrics for high performance multifunctional wearable sensors", *Nano Res.* **2019**, *12*, 2723-2728.
- 27 Naeem, S.; Naeem, F.; Liu, J.; Quiñones, V.; Zhang, J.*; **He, L.**; Huang, G.; Solovev, A.*; Mei, Y., "Oxygen Microbubble Generator Enabled by Tunable Catalytic Microtubes", *Chem. Asian J.* **2019**, *14*, 2431-2434.
- 28 Wang, H.*; Jia, J.; Wang, L.; Butler, K.; Song, R.; Casillas, G.; **He, L.**; Kherani, P. N.; Perovic, D. D.; Jing, L.; Walsh, A.; Dittmeyer, R.; Ozin, A. G.*, "Heterostructure Engineering of a Reverse Water Gas Shift Photocatalyst" *Adv. Sci.*, **2019**, *6*, 1902170
- 29 Li, H.†; Li, C.†; Sun, W.; Wang, Y.; Hua, W.; Liu, J.; Zhang, S.; Chen, Z.; Wang, S.; Wu, Z.; Zhu, Q.; Tang,

- R.; Yu, J.; **He, L.***; Ozin, A. G.*; Zhang, X.*, "Single-Stimulus-Induced Modulation of Multiple Optical Properties", *Adv. Mater.* **2019**, *31*, 1900388. (†equal contribution)
- 30 Li, C.†; Yao, J.†; Huang, Y.; Xu, C.; Lou, D.; Wu, Z.; Sun, W.; Zhang, S.; Li, Y.; **He, L.***; Zhang, X.*, "Salt-Templated Growth of Monodisperse Hollow Nanostructures", *J. Mater. Chem. A* **2019**, *7*, 1404-1409. (†equal contribution)
- 31 Deng, W.†; Zhang, X.†; Dong, H.†; Jie, J.*; Xu, X.; Liu, J.; **He, L.**; Xu, L.; Hu, W.*; Zhang, X.*, "Channel-restricted Meniscus Self-assembly for Uniformly Aligned Growth of Single Crystal Arrays of Organic Semiconductors", *Mater. Today* **2019**, *24*, 17-25. (†equal contribution)
- 32 Cao, M.†; Liu, Q.†; Chen, M.; Chen, L.; Yang, D.; Hu, H.; **He, L.**; Zhang, G.*; Zhang, Q.*, "Fully Alloying AuAg Nanorods in a Photothermal Nano-Oven: Superior Plasmonic Property and Enhanced Chemical Stability", *ACS Omega* **2018**, *3*, 18623-18629. (†equal contribution)
- 33 Wang, S.; Li, C.; Chen, Z.; Zhu, Z.; Zhu, Q.; Tang, R.; Sun, W.; **He, L.***; Zhang, X.*, "Anomalous effect of the aging degree on the ionic permeability of silica shells", *RSC Adv.* **2018**, *8*, 38499-38505.
- 34 Wang, H. †*; Wang, L.†; Wang, Q.; Ye, S.; Sun, W.; Shao, Y.; Jiang, Z.; Qiao, Q.; Zhu, Y.; Song, P.; Li, D.; **He, L.**; Zhang, X.; Yuan, J. *; Wu, T.; Ozin, G.*, "Ambient Electrosynthesis of Ammonia-Electrode Porosity and Composition Engineering", *Angew. Chem. Int. Ed.* **2018**, *57*, 12360-12364. (†equal contribution)
- 35 Zhang, S.†; Li, C.†; Zhang, J.; Yu, Y.; Zhou, H.; Tang, R.; Li, Y.; Yu, J.; Du, X.; **He, L.***; Zhang, X.*, "A general and mild route to highly dispersible anisotropic magnetic colloids for sensing weak magnetic fields", *J. Mater. Chem. C* **2018**, *6*, 5528-5535. (†equal contribution)
- 36 Wang, L.†; Ghossoub, M.†; Wang, H.; Dong, Y.; Shao, Y.; Tountas, A.; Wood, T.; Li, H.; Sun, W.; Xia, M.; Li, Y.; Wang, S.; Jia, J.; Qiu, C.; Qian, C.; **He, L.***; Zhang, X.*; Ozin, G.*, "Photocatalytic Hydrogenation of Carbon Dioxide with High Selectivity to Methanol at Atmospheric Pressure", *Joule* **2018**, *2*, 1369-1381. (†equal contribution)
- 37 Li, C.; Zhang, S.; Zhang, B.; Liu, J.; Zhou, H.; Solovev, A.; Tang, R.; Bao, F.; Yu, J.; Zhang, Q.; Lifshitz, Y.*; **He, L.***; Zhang, X.*, "Local-Curvature-Controlled Non-Epitaxial Growth of Hierarchical Nanostructures", *Angew. Chem. Int. Ed.* **2018**, *57*, 3772-3776.
- 38 Wang, L.†; Cai, M.†; Sun, W.*; **He, L.***; Zhang, X.*, "Promoting Charge Separation in Semiconductor Nanocrystal Superstructures for Enhanced Photocatalytic Activity", *Adv. Mater. Interfaces* **2018**, *5*, 1701694. (†equal contribution)
- 39 Zhu, Z.†; Zhang, S.†; Li, C.; Zhang, J.; Yu, J.; Du, X.; **He, L.***; Zhang, X.*, "A Mechanistic Study of Silica-Etching by Hot Water", *Phys. Chem. Chem. Phys.* **2018**, *20*, 1440-1446. (†equal contribution)
- 40 Dong, Y.†; Ghuman, G.†; Popescu, R.; Duchesne, P.; Zhou, W.; Loh, J.; Jelle, A.; Jia, J.; Wang, D.; Mu, X.; Kübel, C.; Wang, L.; **He, L.**; Ghossoub, M.; Wang, Q.; Wood, T.; Reyes, L.; Zhang, P.; Kherani, N.; Singh, C.; Ozin, G., "Tailoring Surface Frustrated Lewis Pairs of $\text{In}_2\text{O}_{3-x}(\text{OH})_y$ for Gas-Phase Heterogeneous Photocatalytic Reduction of CO_2 by Isomorphous Substitution of In^{3+} with Bi^{3+} ", *Adv. Sci.* **2018**, *5*, 1700732. (†equal contribution)
- 41 Song, M.; Liu, N.; **He, L.**; Liu, G.; Ling, D.; Su, X.; Sun, X.*, "Porous Hollow Palladium NanoplatforM for Imaging-Guided Trimodal Chemo-, Photothermal-, and Radiotherapy", *Nano Res.* **2018**, *11*, 2796–2808.
- 42 Zhang, B.; Wang, H.*; **He, L.**; Zheng, C.; Jie, J.; Lifshitz, Y.; Lee, S.T.*; Zhang, X.*, "Centimeter-Long Single-

Crystalline Si Nanowires", *Nano Lett.* **2017**, *17*, 7323–7329.

- 43 Du, X.*; Wang, J.; Cui, H.; Zhao, Q.; Chen, H.; **He, L.**; Wang, Y., "Breath-Taking Patterns: Discontinuous Hydrophilic Regions for Photonic Crystal Beads Assembly and Patterns Revisualization", *ACS Appl. Mater. Interfaces* **2017**, *9*, 38117–38124.
- 44 Wu, L.; Yu, Q.; Chen, L.; Yang, D.; Zhang, S.; Han, L. Ban, M.; **He, L.**; Xu, Y.; Zhang, Q.*, "A General and Facile Approach to Disperse Hydrophobic Nanocrystals in Water with Enhanced Long-Term Stability", *J. Mater. Chem. C* **2017**, *5*, 3065-3071.
- 45 Cao, M.†; Liu, Q.†; Chen, M.†; Yang, P.; Xu, Y.; Wu, H.; Yu, J.; **He, L.***; Zhang, X.*; Zhang, Q.*, "Dispersing Hydrophilic Nanoparticles in Nonaqueous Solvents with Superior Long-Term Stability", *RSC Adv.* **2017**, *7*, 25535-25541. (†equal contribution)
- 46 Yang, P.†; Li, H.†; Zhang, S.; Chen, L.; Zhou, H.; Tang, R.; Zhou, T.; Bao, F.; Zhang, Q.*; **He, L.***; Zhang, X.*, "Gram-Scale Synthesis of Superparamagnetic Fe₃O₄ Nanocrystal Clusters with Long-Term Charge Stability for Highly Stable Magnetically Responsive Photonic Crystals", *Nanoscale* **2016**, *8*, 19036-19042. (†equal contribution)
- 47 Sun, W.†; Qian, C.†; **He, L.***; Ghuman, K.; Wong, A.; Jia, J.; O'Brien, P.; Reyes, L.; Wood, T.; Helmy, A.; Mims, C.; Singh, C.; Ozin, G.*, "Heterogeneous Reduction of Carbon Dioxide by Hydride-Terminated Silicon Nanocrystals", *Nat. Commun.* **2016**, *7*, 12553. (†equal contribution)
- 48 **He, L.***; Wood, T.; Wu, B.; Dong, Y.; Hoch, L.; Reyes, L.; Wang, D.; Kübel, C.; Qian, C.; Jia, J.; Liao, K.; O'Brien, P.; Sandhel, A.; Loh, J.; Szymanski, P.; Kherani, N.; Sum, T.; Mims, C.; and Ozin, G.*, "Spatial Separation of Charge Carriers in In₂O_{3-x}(OH)_y Nanocrystal Superstructures for Enhanced Gas Phase Photocatalytic Activity", *ACS Nano* **2016**, *10*, 5578-5586.
- 49 Hoch, L.; **He, L.**; Qiao, Q.; Liao, K.; Reyes, L.; Zhu, Y.; Ozin, G.*, "Effect of Precursor Selection on the Photocatalytic Performance of Indium Oxide Nanomaterials for Gas-Phase CO₂ Reduction", *Chem. Mater.* **2016**, *28*, 4160-4168.
- 50 Fu, J.; **He, L.**; Xu, W.; Zhuang, J.; Yang, X.; Zhang, X.; Wu, M.; Yin, Y.*, "Formation of colloidal nanocrystal clusters of iron oxide by controlled ligand stripping", *Chem. Comm.* **2016**, *52*, 128-131.
- 51 Zhang, B.; Wang, H.*; **He, L.**; Duan, C.; Li, F.; Ou, X.; Sun, B.; Zhang, X.*, "The Diameter-Dependent Photoelectrochemical Performance of Silicon Nanowires", *Chem. Comm.* **2016**, *52*, 1369-1372.
- 52 Hoch, L.; Szymanski, P.; Ghuman, K.; **He, L.**; Liao, K.; Qiao, Q.; Reyes, L.; Zhu, Y.; El-Sayed, M.; Singh, C.*; Ozin, G.*, "Carrier Dynamics and the Role of Surface Defects: Designing a Photocatalyst for Gas-Phase CO₂ Reduction", *Proc. Natl. Acad. Sci. U. S. A.* **2016**, *113*, E8011-E8020.
- 53 Jia, J.†; O'Brien, P.†; **He, L.**; Fei, T.; Reyes, L.; Qiao, Q.; Burrow, T.; Dong, Y.; Liao, K.; Varela, M.; Pennycook, S.; Hmadeh, M.; Helmy, A.; Kherani, N.; Perovic, D.; Ozin, G.*, "Near-Infrared Photothermal Catalyzed Hydrogenation of Gaseous CO₂ over Nanostructured Pd@Nb₂O₅", *Adv. Sci.* **2016**, *3*, 1600189. (†equal contribution)
- 54 Ye, M.*; Qian, C.; Sun, W.; **He, L.**; Jia, J.; Dong, Y.; Zhou, W., "Dye Colour Switching by Hydride-Terminated Silicon Particles and Its Application as an Oxygen Indicator", *J. Mater. Chem. C* **2016**, *4*, 4577-4583.

- 55 Li, J.; Sun, S.; Qian, C.; **He, L.**; Chen, K.; Zhang, T.; Chen, Z.; Ye, M.*, "The Role of Adsorption in Photocatalytic Degradation of Ibuprofen under Visible Irradiation by BiOBr Microspheres", *Chem. Eng. J.* **2016**, *297*, 139-147.
- 56 **He, L.**[†]; Janner, M.[†]; Lu, Q.; Wang, M.; Ma, H. and Yin, Y.*, "Magnetochromatic Thin Film Microplates", *Adv. Mater.* **2015**, *27*, 86-92. (†equal contribution)
- 57 Wang, M.; **He, L.**; Xu, W.; Wang, X.; Yin, Y.*, "Magnetic Assembly and Field-Tuning of Nanoellipsoid-Based Colloidal Photonic Crystals", *Angew. Chem. Int. Ed.* **2015**, *54*, 7077-7081.
- 58 Hu, Y.; **He, L.**; Han, X.; Wang, M.; Yin, Y.*, "Magnetically Responsive Photonic Films with High Tunability and Stability", *Nano Res.* **2015**, *8*, 611-620.
- 59 Pal, A.; Malik, V.; **He, L.**; H. Ern´e, B.; Yin, Y.; K. Kegel, W. and V. Petukhov, A.*, "Tuning the Colloidal Crystal Structure of Magnetic Particles by External Field", *Angew. Chem. Int. Ed.* **2015**, *54*, 1803-1807.
- 60 Chen, L.; Moir, J.; Soheilnia, N.; Mahler, B.; Hoch, L.; Liao, K.; Hoepfner, V.; O'Brien, P.; Qian, C.; **He, L.**; Ozin, G.*, "Morphology-Controlled In₂O₃ Nanostructures Enhance the Performance of Photoelectrochemical Water Oxidation", *Nanoscale* **2015**, *7*, 3683-3693
- 61 Wang, M.; **He, L.**; Zorba, S.; Yin, Y.*, "Magnetically Actuated Liquid Crystals", *Nano Lett.* **2014**, *14*, 3966-3971.
- 62 Wang, W.; Xie, N.; **He, L.**; Yin, Y.*, "Photocatalytic Color Switching of Redox Dyes for Ink-Free Light-Printable Rewritable Paper", *Nat. Commun.* **2014**, *5*, 5779-5785.
- 63 Wang, W.; Ye, M.; **He, L.**; Yin, Y.*, "Nanocrystalline TiO₂-Catalyzed Photoreversible Color Switching", *Nano Lett.* **2014**, *14*, 1681-1686.
- 64 **He, L.**; Wang, M.; Zhang, Q.; Lu, Y.; Yin, Y.*, "Magnetic Assembly and Patterning of General Nanoscale Materials through Nonmagnetic Templates", *Nano Lett.* **2013**, *13*, 264-271.
- 65 Wang, M.; **He, L.** and Yin, Y.*, "Magnetic Field Guided Colloidal Assembly", *Mater. Today* **2013**, *16*, 110-116.
- 66 Hu, Y.; **He, L.**; Yin, Y.*, "Charge Stabilization of Superparamagnetic Colloids for High-Performance Responsive Photonic Structures", *Small* **2013**, *8*, 3795-3799.
- 67 Wang, M.; **He, L.**; Hu, Y. and Yin, Y.*, "Magnetically Rewritable Photonic Ink Based on Superparamagnetic Nanochains", *J. Mater. Chem. C* **2013**, *1*, 6151-6156.
- 68 Wang, M.; Gao, C.; **He, L.**; Lu, Q.; Zhang, J.; Tang, C.; Zorba, S.; Yin, Y.*, "Magnetic Tuning of Plasmonic Excitation of Gold Nanorods", *J. Am. Chem. Soc.* **2013**, *135*, 15302-15305.
- 69 Zhang, Q.[†]; Janner, M.[†]; **He, L.**; Wang, M.; Hu, Y.; Lu, Y. and Yin, Y.*, "Photonic Labyrinths: Two-Dimensional Dynamic Magnetic Assembly and *in situ* Solidification", *Nano Lett.* **2013**, *13*, 1770-1775. (†equal contribution)
- 70 **He, L.**; Wang, M.; Ge, J.; Yin, Y.*, "Magnetic Assembly Route to Colloidal Responsive Photonic Nanostructures", *Acc. Chem. Res.* **2012**, *45*, 1431-1440. (Cover article)
- 71 **He, L.**; Hu, Y.; Wang, M.; Yin, Y.*, "Determination of Solvation Layer Thickness by A Magneto-photonic Approach", *ACS Nano.* **2012**, *6*, 4196-4202.
- 72 **He, L.**[†]; Malik, V.[†]; Wang, M.; Hu, Y.; Yin, Y.*, "Self-Assembly and Magnetically Induced Phase Transition

- of Three-Dimensional Colloidal Photonic Crystals", *Nanoscale* **2012**, *4*, 4438-4442. (†equal contribution)
- 73 Kim, J.; **He, L.**; Song, Y.; Yin, Y.; Kwon, S.*, "Lithographic Compartmentalization of Emulsion Droplet Templates for Microparticles with Multiple Nanostructured Compartments", *Chem. Comm.* **2012**, *48*, 6091-6093.
- 74 Liu, Y.; Han, X.; **He, L.**; Yin, Y.*, "Thermoresponsive Assembly of Charged Gold Nanoparticles and Their Reversible Tuning of Plasmon Coupling", *Angew. Chem. Int. Ed.* **2012**, *51*, 6373-6377.
- 75 Goebel, J.; Zhang, Q.; **He, L.** and Yin, Y.*, "Monitoring the Shape Evolution of Silver Nanoplates: a Marker Study", *Angew. Chem. Int. Ed.* **2012**, *51*, 552-555.
- 76 Malik, V.*; V. Petukhov, A.; **He, L.**; Yin, Y.; Schmidt, M., "Colloidal Crystallization and Structural Changes in Suspensions of Silica/Magnetite Core-Shell Nanoparticles", *Langmuir* **2012**, *28*, 14777-14783.
- 77 **He, L.**; Hu, Y.; Han, X.; Lu, Y.; Lu, Z.; Yin, Y.*, "Assembly and Photonic Properties of Superparamagnetic Colloids in Complex Magnetic Fields", *Langmuir* **2011**, *27*, 13444-13450.
- 78 **He, L.** and Yin, Y., "Magnetically Responsive Photonic Nanostructures: Making Color Using Magnets", *Proc. SPIE* **2011**, *8031*, 80310U2-7.
- 79 Hu, Y.; **He, L.** and Yin, Y.*, "Magnetically Responsive Photonic Nanochains", *Angew. Chem. Int. Ed.* **2011**, *50*, 3747-3750.
- 80 Kim, T.; **He, L.**; Morales J.; Beyermann W. and Bardeen C.*, "Magnetic Field Control of Fluorescent Polymer Nanorods", *Nanotechnology* **2011**, *22*, 455704.
- 81 Ge, J.; **He, L.**; Hu, Y.; Yin, Y.*, "Magnetically Induced Colloidal Assembly into Field-Responsive Photonic Structures", *Nanoscale* **2011**, *3*, 177-183.
- 82 Li, N.; Zeng, S.; **He, L.**; Zhong, W.*, "Exploration of Possible Binding Sites of Nanoparticles on Protein by Cross-Linking Chemistry Coupled with Mass Spectrometry", *Anal. Chem.* **2011**, *83*, 6929-6934.
- 83 Kim, J.; Song, Y.; **He, L.**; Kim, H.; Lee, H.; Park, W.; Yin, Y. and Kwon, S.*, "Real-time Optofluidic Synthesis of Magneto-chromatic Microspheres for Reversible Structural Color Patterning", *Small* **2011**, *7*, 1163-1168.
- 84 **He, L.**; Hu Y.; Kim, H.; Ge, J.; Kwon, S. and Yin, Y.*, "Magnetic Assembly of Nonmagnetic Particles into Photonic Crystal Structures", *Nano Lett.* **2010**, *10*, 4708-4714.
- 85 Lu, Z.; **He, L.** and Yin, Y.*, "Superparamagnetic Nanocrystal Clusters for Enrichment of Low-Abundance Peptides and Proteins", *Chem. Comm.*, **2010**, *46*, 6174-6176.
- 86 Wang, W.; Goebel, J.; **He, L.**; Aloni, S.; Hu, Y.; Zhen, L.; Yin, Y.*, "Epitaxial Growth of Shape-Controlled Bi₂Te₃-Te Heterogeneous Nanostructures", *J. Am. Chem. Soc.* **2010**, *132*, 17316-17324.
- 87 Wang, D.; Liu, X.; **He, L.**; Yin, Y.; Wu, D. and Shi, J.*, "Manipulating Graphene Mobility and Charge Neutral Point with Ligand-Bound Nanoparticles as Charge Reservoir", *Nano Lett.* **2010**, *10*, 4989-4993.
- 88 Li, N.; Zeng, S.; **He, L.**; Zhong, W.*, "Probing Nanoparticle-Protein Interaction by Capillary Electrophoresis", *Anal. Chem.* **2010**, *82*, 7460-7466.
- 89 Lu, Z.; Duan, J.; **He, L.**; Hu, Y.; Yin, Y.*, "Mesoporous TiO₂ Nanocrystal Clusters for Selective Enrichment of Phosphopeptides", *Anal. Chem.* **2010**, *82*, 7249-7258.

- 90 Ye, M.; Zorba, S.; **He, L.**; Hu, Y.; Maxwell, R. T.; Farah, C.; Zhang, Q. and Yin, Y.*, "Self-Assembly of Superparamagnetic Magnetite Particles into Peapod-like Structures and Their Application in Optical Modulation", *J. Mater. Chem.* **2010**, 20, 7965-7969.
- 91 Zorba, S.*; Maxwell, R.; Farah, C.; **He, L.**; Ye, M. and Yin, Y., "Superparamagnetic Magnetite Nanoparticle Superstructures for Optical Modulation/Chopping", *J. Phys. Chem. C* **2010**, 114, 17868-17873.
- 92 Ye, M.; Zhang, Q.; Hu, Y.; Ge, J.; Lu, Z.; **He, L.**; Chen, Z. and Yin, Y.*, "Magnetically Recoverable Core-shell Nanocomposites with Enhanced Photocatalytic Activity", *Chem. Eur. J.* **2010**, 16, 6243-6250.
- 93 Ge, J.; **He, L.**; Goebel, J. and Yin, Y.*, "Assembly of Magnetically Tunable Photonic Crystals in Nonpolar Solvents", *J. Am. Chem. Soc.* **2009**, 131, 3484-3486.
- 94 Ge, J.; Lee, H.; **He, L.**; Kim, J.; Lu, Z.; Kim, H.; Goebel, J.; Kwon, S. and Yin, Y.*, "Magnetochromatic Microspheres: Rotating Photonic Crystals", *J. Am. Chem. Soc.* **2009**, 131, 15687-15694.
- 95 Ge, J.; Goebel, J.; **He, L.**; Lu, Z. and Yin, Y.*, "Rewritable Photonic Paper with Hygroscopic Salt Solution as Ink", *Adv. Mater.* **2009**, 21, 4259-4264.

BOOK CHAPTERS

1. "Handbook of Synthetic Methodologies and Protocols of Nanomaterials", World Scientific, **2019**
2. "Magnetic Assembly and Tuning of Colloidal Responsive Photonic Nanostructures", in *Responsive Photonic Nanostructures: Smart Nanoscale Optical Materials*, Royal Society of Chemistry, **2013**
3. "Magnetically Tunable Colloidal Photonic Crystals", in *Chemistry of Nanostructured Materials II*, World Scientific Publisher, **2010**

PATENTS

1. Yin, Y.; **He, L.** "Magnetic Assembly of Nonmagnetic Particles into Photonic Crystal Structures", US Patent, US9341742B2
2. Yin, Y.; Hu, Y.; **He, L.** "Magnetically Responsive Photonic Nanochains", US Patent, US9180484B2

PRESENTATIONS

1. Invited talk: "Greenhouse Inspired Supra-Photothermal CO₂ Catalysis", 4th International Symposium on Energy and Environmental Photocatalytic Materials, July 27th **2021**, Xi'an
2. Invited talk: "Niobium and Titanium Carbides (MXenes) as Superior Photothermal Supports for CO₂ Photocatalysis", Cell Symposia: Advancing Catalysis for C1 Chemistry 2021, July 25th **2021**, Dalian
3. Invited talk: "Design of Nanostructured Materials for Photothermal CO₂ Catalysis", 2021 Youth Forum on Photocatalysis, April 7th **2021**, Wuxi
4. Invited talk: "Design of Nanostructured Catalysts for Photothermal CO₂ Hydrogenation", International Forum on Electrocatalysis and Electrosynthesis, April 10th **2021**, Fuzhou
5. Excellent Young Scientists Award talk: "Design of Nanostructured Catalysts for Photothermal CO₂ Hydrogenation", International Forum on Advanced Materials, October 30th **2020**, Xi'an
6. Invited talk: "Catalyst Design for Photothermal CO₂ Hydrogenation", National Conference on Energy Chemistry, December 26th **2019**, Nanjing

7. Invited talk: “Controlled Synthesis and Photocatalytic Applications of Patchy Particles”, 10th National Conference on Inorganic Chemistry, August 20th **2019**, Ji’nan
8. Invited talk: “Controlled Synthesis and Photocatalytic Applications of Patchy Particles”, 10th National Conference on Inorganic Chemistry, August 20th **2019**, Ji’nan
9. Invited talk: “Catalyst Design for Photothermal CO₂ Hydrogenation”, 2021 Youth Forum on Photocatalysis, July 20th **2019**, Harbin
10. Invited talk: “Hydrogenation of Carbon Dioxide: From Photocatalysis to Photothermal Catalysis”, 2021 Youth Forum on Photocatalysis, April 14th **2019**, Shijiazhuang
11. Invited talk: “Photocatalytic Hydrogenation of Carbon Dioxide with High Selectivity to Methanol at Atmospheric Pressure”, The 14th Cross-Strait Workshop on Nano Science and Technology, June 22nd **2018**, Macao
12. Invited talk: “Photocatalytic Hydrogenation of Carbon Dioxide with High Selectivity to Methanol at Atmospheric Pressure”, 31st Chinese Chemical Society Meeting, May 8th **2018**, Hangzhou
13. Invited talk: “Design of Nanostructured Materials for Photocatalytic CO₂ Hydrogenation”, International workshop of synchrotron radiation spectroscopies for energy related materials, September 4th **2018**, Hefei
14. Invited talk: “Design of Nanostructured Materials for Photocatalytic CO₂ Hydrogenation”, International workshop of synchrotron radiation spectroscopies for energy related materials, September 4th **2018**, Hefei
15. Invited talk: “Synthesis, Assembly and Applications of Magnetic Nanoparticles”, 16th CCS Conference on Colloidal and Interface Chemistry, July 27th **2017**, Qingdao
16. Invited talk: “Functional Optical Nanostructures: Assembly, Properties and Applications”, International Conference on Materials for Energy Applications, January 5th **2017**, Hongkong
17. Invited talk: “Gas Phase Photocatalytic Carbon Dioxide Reduction by In₂O_{3-x}(OH)_y”, 30st Chinese Chemical Society Meeting, July 3rd **2016**, Dalian
18. Invited talk: “Synthesis, Assembly and Applications of Magnetic Nanoparticles”, 9th Chinese Society of Particuology Meeting, August 14th **2016**, Chengdu
19. Invited Poster: “Functional Nanostructures for Gas Phase Photoreduction of CO₂”, 11th Sino-US Nano Forum, June 19th **2016**, Nanjing
20. Invited talk: “Functional Optical Nanostructures: Assembly, Properties and Applications”, 6th China-Australia Joint Symposium, January 5th **2016**, Suzhou
21. Oral presentation: “Magnetic Assembly and Patterning of General Nanoscale Materials Through Nonmagnetic Templates”, 87th ACS Colloid & Surface Science Symposium, June 24th **2013**, Riverside, CA
22. Oral presentation: “Magnetic Assembly Route to Colloidal Responsive Photonic Nanostructures”, MRS Spring Meeting, April 4th **2013**, San Francisco, CA
23. Poster presentation: “Patterned Colloidal Photonic Structures through Template-Assisted Magnetic Assembly”, MRS Spring Meeting, April 2nd **2013**, San Francisco, CA
24. Oral presentation: “Magnetic Assembly Route to Colloidal Responsive Photonic Nanostructures”, MRS Spring Meeting, April 2nd **2013**, San Francisco, CA (*Graduate Student Award Talk*)
25. Oral presentation: “Self-Assembly of Colloidal Photonic Crystals and Magnetically Induced Phase Transition”, MRS Spring Meeting, April 12th **2012**, San Francisco, CA

26. Oral presentation: “Magnetically Responsive Colloidal Photonic Crystals”, MRS Spring Meeting, April 10th **2012**, San Francisco, CA
27. Oral presentation: “Magneto-Optical Study of Solvation Force between Colloidal Silica Particles”, Division of Colloid and Surface Chemistry, ACS 243rd National Meeting, March 29th **2012**, San Diego, CA
28. Poster presentation: “Photonic Crystal Structures Created by Magnetic Assembly of Nonmagnetic Particles”, MRS Spring Meeting, April 28th **2011**, San Francisco, CA
29. Oral presentation: “Magnetic Assembly of Nonmagnetic Particles into Photonic Crystal Structures”, Division of Colloid and Surface Chemistry, ACS 241st National Meeting, March 28th **2011**, Anaheim, CA
30. Poster presentation: “Self-assembly Approaches to Magnetically Responsive Photonic Structures”, MRS Spring Meeting, April 8th **2010**, San Francisco, CA

PROFESSIONAL SERVICE

Editorial board member (2019-): Rare Metals

Early Career Editorial Board Member (2021-): Transactions of Tianjin University

Guest editor: Frontiers in Chemistry, special issue “Recent Advances in Responsive Optical Nanomaterials”

Scientific Coordinator (2020-): BRICS Working Group on Materials Science and Nanotechnology (on behalf of China)

Co-Chair (2021): ACS on Campus Workshop at Soochow University

Journal Reviewer: Sci. Adv., Nat. Commun., J. Am. Chem. Soc., Angew. Chem. Int. Ed., Adv. Mater., ACS Catalysis, ACS Nano, Adv. Funct. Mater., Chem. Mater., Chem. Eng. J., Nano Res., Nanoscale, Journal of Materials Chemistry C, Journal of Materials Chemistry A, Langmuir, Journal of Physical Chemistry, Nano Energy, Flatchem, ACS Applied Nano Materials, Materials Today Nano.

MEMBERSHIP

Chinese Chemical Society

Chinese Society for Imaging Science and Technology