

Shengqian Ma (马胜前)

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Biographical Sketch



Shengqian Ma obtained his B.S. degree from Jilin University, China in 2003, and graduated from Miami University (Ohio) with a Ph.D. degree under the supervision of Hong-Cai Joe Zhou (currently at Texas A&M University) in 2008. After finishing two-year Director's Postdoctoral Fellowship at Argonne National Laboratory, he joined the Department of Chemistry at University of South Florida (USF) as an Assistant Professor in August 2010. He was promoted to an Associate Professor with early tenure in 2015 and to a Full Professor in 2018.

He received the 2015 USF *Faculty Outstanding Research Achievement Award* and 2018 *Outstanding Faculty Award*. He is the recipient of 2014 *NSF CAREER Award* and has been selected as the Thomson Reuters *Highly Cited Researcher* in 2014, 2015, 2016, 2017, 2018, and 2019; he was also awarded the *IUPAC-2015 Young Chemist Travel Award* and the *2009 IUPAC Prize for Young Chemists* from International Union of Pure & Applied Chemistry (IUPAC); he received the *Young Investigator Award* from American Chemical Society (ACS) Division of Inorganic Chemistry and the *Director's Postdoctoral Fellowship* from Argonne National Laboratory in 2008 as well.

His current research interest focuses on the development of functional porous materials including metal-organic frameworks (MOFs), covalent organic frameworks (COFs), porous organic polymers (POPs), and microporous carbon materials for energy, biological, environmental-related applications. He has published more than 220 papers (over 180 since independent career) with the total citations over 22000 and the H-index of 77.

Education

- 2003 Jilin University, Changchun, China, BS in Applied Chemistry
- 2008 Miami University, Oxford, OH, PhD in Chemistry (Advisor: Hong-Cai Joe Zhou)

Professional Experience

- 2001-2003** *Undergraduate Research Assistant, State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, China (Supervisor: Feng-Shou Xiao)*
- 2003-2008** *Graduate Research Assistant, Department of Chemistry & Biochemistry, Miami University, Oxford, OH (Advisor: Hong-Cai Joe Zhou)*
- 2008-2010** *Director's Postdoctoral Fellow, Argonne National Laboratory, Argonne, IL (Supervisor: Dijia Liu)*
- 2010-2015** *Assistant Professor, Department of Chemistry, University of South Florida, Tampa, FL*
- 2015-2018** *Associate Professor, Department of Chemistry, University of South Florida, Tampa, FL*
- 2018-Present** *Full Professor, Department of Chemistry, University of South Florida, Tampa, FL*

Honors and Awards

- **Featured on Author Profile of *Angewandte Chemie* (2019)**
- **Gordon Lectureship, Department of Chemistry and Biochemistry, Miami University (2019)**
- **Web of Science Highly Cited Researcher (2019)**
- **Web of Science Highly Cited Researcher (2018)**
- **Outstanding Faculty Award, University of South Florida (2018)**
- **Web of Science Highly Cited Researcher (2017)**
- **Web of Science Highly Cited Researcher (2016)**
- ***Inorganic Chemistry Frontiers* 'Emerging Investigator' (2016)**
- **Thomson Reuters Highly Cited Researcher (2015)**
- **Faculty Outstanding Research Achievement Award, University of South Florida (2015)**
- **Young Chemist Travel Award from IUPAC (2015)**
- **Thomson Reuters Highly Cited Researcher and The World's Most Influential Scientific Minds (2014)**
- **NSF CAREER Award (2014)**
- **Visiting Scholar of National Research Council of Taiwan (2014)**
- **ChemComm 'Emerging Investigator' (2014)**
- **Faculty Research & Development Award, University of South Florida (2011, 2013, 2014)**
- **2009 IUPAC Prize for Young Chemists from IUPAC (2009)**

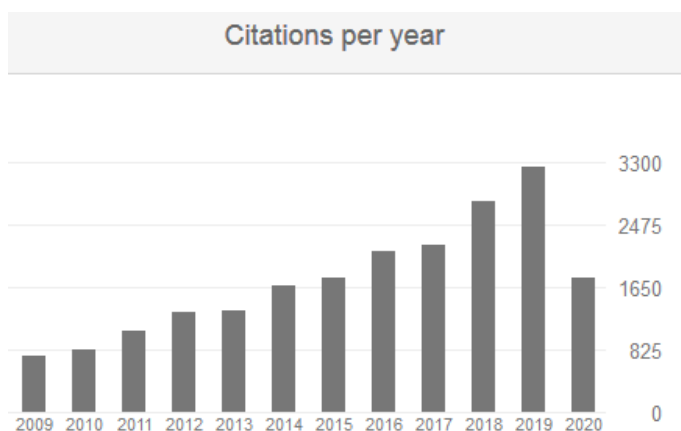
- **Young Investigator Award** from ACS Division of Inorganic Chemistry (2008)
- **Director's Postdoctoral Fellowship** of Argonne National Laboratory (2008-2010)
- **Chinese Government Award for Outstanding Self-financed Students Abroad of Year 2007** (2008)
- **Sigma Xi Grant-in-Aid of Research Award** from Sigma Xi, The Scientific Research Society (2007-2008)
- **Dissertation Scholarship**, Miami University (2007-2008)
- **Marjorie Post Farrington Scholarship**, Miami University (2007-2008)
- **Graduate Student Achievement Award**, Miami University (2006-2007)
- **Student Initiative Fund Award**, Miami University (2007)
- **Student Travel Award** from the ACS Division of Inorganic Chemistry (2007)
- **The Miami Co-Op Book Store Award**, Miami University (2004)
- **The William Hale Charch Scholarship**, Miami University (2003-2004)
- **Outstanding Undergraduate Scholarship**, Jilin University (2000-2003)

PUBLICATIONS

Peer Reviewed PAPERS (Total Citations: +22000; H-index: 77)

Highlights:

58 papers have been cited over 100 times.
 28 papers have been cited over 200 times.
 18 papers have been cited over 300 times.
 9 papers have been cited over 400 times.
 6 papers have been cited over 600 times.
 4 papers have been cited over 800 times.
 3 paper has been cited over 1000 times.



As an Independent Investigator:

1. "Secondary Sphere Effects on Porous Polymeric Organocatalysts for CO₂ Transformations: Subtle Modifications Resulting in Superior Performance" Song, Y.; Sun, Q.*; Lan, P. C.; **Ma, S.*** *ACS Appl. Mater. Interfaces*, **2020**, *12*, DOI: 10.1021/acsami.0c08817.
2. "Metal-Organic Framework Disintegrants: A New Generation of Enzyme Preparation Platforms with Boosted Activity" An, H.; Song, J.; Wang, T.; Xiao, N.; Zhang, Z.; Cheng, P.; **Ma, S.**; Chen, Y. *Angew Chem. Int. Ed.*, **2020**, *59*, DOI: 10.1002/anie.202007827.
3. "Postsynthetic Oxidation of Coordination Site in a Heterometallic Metal-Organic Framework: Tuning Catalytic Behaviors" Han, Y.; Sinnwell, M. A.; Surbella III, R. G.; Xue,

- W.; Huang, H.; Zheng, J.; Peng, B.; Verma, G.; Yang, Y.; Liu, L.; Ma, S.; Thallapally, P. K. *Chem. Mater.* **2020**, *32*, DOI: 10.1021/acs.chemmater.0c01267.
4. "Synthesis, Characterization, and Antimicrobial Investigation of a Novel Chlorhexidine Cyclamate Complex" Dubovoy, V.; Desai, P.; Hao, Z.; Cheng, Ch.-Y.; Verma, G.; Wojtas, L.; Brinzari, T. V.; Boyd, J. M.; Ma, S.; Asefa, T.; Pan, L. *Cryst. Growth Des.* **2020**, *20*, DOI: 10.1021/acs.cgd.0c00107.
 5. "Synthesis, Characterization, and Investigation of the Antimicrobial Activity of Cetylpyridinium Tetrachlorozincate" Dubovoy, V.; Nawrocki, S.; Verma, G.; Wojtas, L.; Desai, P.; Al-Tameemi, H.; Brinzari, T. V.; Stranick, M.; Chen, D.; Xu, S.; Ma, S.; Boyd, J. M.; Asefa, T.; Pan, L. *ACS Omega* **2020**, *5*, 10359-10365.
 6. "Porous Organic Polymer Nanotrap for Efficient Extraction of Palladium" Aguila, B.; Sun, Q.*; Cassady, H. C.; Shan, C.; Liang, Z.; Al-Enizi, A. M.; Nafady, A.; Wright, J. T.; Meulenberg, R. W.; **Ma, S.*** *Angew Chem. Int. Ed.*, **2020**, *59*, DOI: 10.1002/anie.202006596.
 7. "Fabrication of Photoresponsive Crystalline Artificial Muscles Based on PEGylated Covalent Organic Framework Membranes" Guo, X.; Mao, T.; Wang, Z.; Cheng, P.; Chen, Y.; Ma, S.; Zhang, Z. *ACS Central Science*, **2020**, *6*, 787-794.
 8. "A Robust soc-MOF Platform Exhibiting High Gravimetric Uptake and Volumetric Deliverable Capacity for On Board Methane Storage" Verma, G.; Kumar, S.; Vardhan, H.; Ren, J.; Niu, Z.; Pham, T.; Wojtas, L.; Butikofer, S.; Garcia, J. C. E.; Chen, Y.-S.; Space, B.; Ma, S.* *Nano Res.*, **2020**, *13*, DOI: 10.1007/s12274-020-2794-9.
 9. "Tailored Porous Organic Polymers for Task-Specific Water Purification" Sun, Q.; Aguila, B.; Song, Y.; **Ma, S.*** *Acc. Chem. Res.*, **2020**, *53*, 812-821.
 10. "PEG@ZIF-8/PVDF Nanocomposite Membrane for Efficient Pervaporation Desulfurization via a Layer-by-Layer Technology" Sun, H.; Magnuson, Z.; He, W.; Zhang, W.; Vardhan, H.; Han, X.*; He, G.*; **Ma, S.*** *ACS Appl. Mater. Interfaces*, **2020**, *12*, 20664-20671.
 11. "Fabricating Covalent Organic Framework Capsules with Commodious Microenvironment for Enzymes" Li, M.; Qiao, S.; Zheng, Y.; Andaloussi, Y. H.; Li, X.; Zhang, Z.; Li, A.; Cheng, P.; **Ma, S.**; Chen, Y. *J. Am. Chem. Soc.*, **2020**, *142*, 6675-6681.
 12. "Robust Bimetallic Ultramicroporous Metal–Organic Framework for Separation and Purification of Noble Gases" Wang, T.; Peng, Y.-L.; Lin, E.; Niu, Z.; Li, P.; **Ma, S.**; Zhao, P.; Chen, Y.; Cheng, P.; Zhang, Z. *Inorg. Chem.* **2020**, *59*, 4868-4873.
 13. "Highly Efficient Electrocatalytic Hydrogen Evolution Promoted by O–Mo–C Interfaces of Ultrafine β -Mo₂C Nanostructures" Yang, H.; Chen, X.; Hu, G.; Chen, W.-T.; Bradley, S.; Zhang, W.; Verma, G.; Nann, T.; Jiang, D.; Kruger, P.; Wang, X.*; Tian, H.*; Waterhouse, G.; Telfer, S.; **Ma, S.*** *Chem. Sci.*, **2020**, *11*, 3523-3530.
 14. "Protein Structure-Directed Metal-Organic Zeolite-Like Networks as Biomacromolecule Carriers" Wang, H.; Han, L.; Zheng, D.; Yang, M.; Andaloussi, Y. H.; Cheng, P.; Zhang, Z.; **Ma, S.**; Zaworotko, M. J.; Feng, Y.; Chen, Y. *Angew Chem. Int. Ed.*, **2020**, *59*, 6263-6267.

15. "A Corrole-Based Covalent Organic Framework Featuring Desymmetrized Topology" Zhao, Y.; Dai, W.; Peng, Y.; Niu, Z.; Sun, Q.; Shan, C.; Yang, H.; Wojtas, L.; Yuan, D.; Zhang, Z.*; Dong, H.*; Zhang, X.*; Zhang, B.*; Feng, Y.; **Ma, S.*** *Angew Chem. Int. Ed.*, **2020**, *59*, 4354-4359.
16. "Predisposed Intrinsic and Extrinsic Proton Conduction in Robust Covalent Organic Frameworks for Hydrogen Fuel Cell Application" Yang, Y.; He, X.; Zhang, P.; Andaloussi, Y.; Zhang, H.; Jiang, Z.; Chen, Y.; **Ma, S.**; Cheng, P.; Zhang, Z. *Angew Chem. Int. Ed.*, **2020**, *59*, 3678-3684.
17. "Programming Covalent Organic Frameworks for Photocatalysis: Investigation of Chemical and Structural Variations" Wang, S.; Sun, Q.*; Chen, W.; Tang, Y.; Aguila, B.; Pan, Y.; Zheng, A.; Yang, Z.; Wojtas, L.; **Ma, S.*** Xiao, F.-S.* *Matter*, **2020**, *2*, 416-427.
18. "Covalent organic frameworks for separation applications" Wang, Z.; Zhang, S.; Chen, Y.*; Zhang, Z.*; **Ma, S.*** *Chem. Soc. Rev.*, **2020**, *49*, 708-735. (Invited contribution to the themed collection in *Chem. Soc. Rev.* on "New frontiers in Covalent Organic Frameworks: Design and Applications")
19. "Beyond Confined Catalysis in Porous Materials" Wang, X.; Lan, P. C.; Wang, S.; **Ma, S.*** *Natl. Sci. Rev.*, **2020**, *7*, DOI: 10.1093/nsr/nwaa044. (Research Highlight)
20. "Skeleton Engineering of Homo-Coupled Conjugated Microporous Polymers for Highly Efficient Uranium Capture via Synergistic Coordination" Zhang, L.; Ye, G.*; Pu, N.; Yu, B.; Chen, J.; Xu, S.*; **Ma, S.*** *ACS Appl. Mater. Interfaces*, **2020**, *12*, 3688-3696.
21. "Optimizing the performance of porous pyridinium frameworks for carbon dioxide transformation" Song, Y.; Sun, Q.*; Aguila, B.; **Ma, S.*** *Catal. Today*, **2020**, DOI: 10.1016/j.cattod.2020.01.031.
22. "Regulation of the degree of interpenetration in metal-organic frameworks" Verma, G.; Butikofer, S.; Kumar, S.; **Ma, S.*** *Top. Curr. Chem.*, **2020**, *378*, 4.
23. "Recent advances in MOF-based photocatalysis: environmental remediation under visible light" Wang, Q.; Gao, Q.; Al-Enizi, A. M.; Nafady, A.; **Ma, S.*** *Inorg. Chem. Front.*, **2020**, *7*, 300-339.
24. "Pore Surface Engineering of Covalent Organic Frameworks: Structural Diversity and Applications" Vardhan, H.; Al-Enizi, A. M.; Nafady, A.; **Ma, S.*** *Nanoscale*, **2019**, *11*, 21679 - 21708.
25. "Mapping out the Degree of Freedom of Hosted Enzymes in Confined Spatial Environments" Sun, Q.; Pan, Y.; Wang, X.; Li, H.; Farmakes, J.; Aguila, B.; Yang, Z.*; **Ma, S.*** *Chem*, **2019**, *5*, 3184-3195.
26. "Iridium complex Immobilization on Covalent Organic Framework for Effective C-H Borylation" Vardhan, H.; Pan, Y.; Yang, Z.; Verma, G.; Nafady, A.*; El-enizi, A.; Alotaibi, T.; Almaghribi, O.; **Ma, S.*** *APL Materials*, **2019**, *7*, 101111. (invited contribution to the Special Topic on "Open Framework Materials for Energy Applications" in *APL Materials*)

27. "Microporous Cyclen-Based Octacarboxylate Hydrogen-Bonded Organic Framework Exhibiting Selective Gas Adsorption" Stackhouse, C.; Ren, J.; Shan, C.; Nafady, A.; Al-Enizi, A.; Ubaidullah, M.; Niu, Z.; **Ma, S.*** *Cryst. Growth Des.* **2019**, *19*, 6377-6380. (invited contribution to *Crystal Growth & Design* Virtual Special Issue on "Structure Property relationship in Crystalline Solids")
28. "Robust Corrole-Based Metal-Organic Frameworks with Rare 9-Connected Zr/Hf-Oxo Clusters" Zhao, Y.; Qi, S.; Niu, Z.; Peng, Y.; Shan, C.; Verma, G.; Wojtas, L.; Zhang, Z.; Zhang, B.*; Feng, Y.; Chen, Y.-S.; Ma, S.* *J. Am. Chem. Soc.*, **2019**, *141*, 14443-14450.
29. "De Novo Design and Facile Synthesis of 2D Covalent Organic Frameworks: A Two-in-One Strategy" Li, Y.; Chen, Q.; Xu, T.; Xie, Z.; Liu, J.; Yu, X.; **Ma, S.**; Qin, T.; Chen, L.* *J. Am. Chem. Soc.*, **2019**, *141*, 13822-13828.
30. "Heterogenization of Trinuclear Palladium Complex into an Anionic Metal-Organic Framework through Post-synthetic Cation Exchange" Ren, J.; Lan, P. C.; Chen, M.; Zhang, W.; **Ma, S.*** *Organometallics*, **2019**, *38*, 3460-3465.
31. "Design Strategies to Enhance Amidoxime Chelators for Uranium Recovery" Aguila, B.; Sun, Q.; Cassady, H.; Abney, C.; Li, B.; **Ma, S.*** *ACS Appl. Mater. Interfaces*, **2019**, *11*, 30919-30926.
32. "Membrane-supported 1D MOF hollow superstructure array prepared by polydopamine-regulated contra-diffusion synthesis for uranium entrapment" Yu, B.; Ye, G.*; Chen, J.*; **Ma, S.** *Environ. Pollut.*, **2019**, *253*, 39-48.
33. "Bio-inspired Creation of Heterogeneous Reaction Vessels via Polymerization of Supramolecular Ion Pair" Dong, K.; Sun, Q.*; Tang, Y.; Shan, C.; Aguila, B.; Wang, S.; Meng, X.; **Ma, S.***; Xiao, F.-S.* *Nature Commun.* **2019**, *10*, 3059. ([Featured by Editor](#))
34. "Tunable Synthesis of Hollow Metal-Nitrogen-Carbon Capsules for Efficient Oxygen Reduction Catalysis in Proton Exchange Membrane Fuel Cells" Yang, H.; Chen, X.; Chen, W.-T.; Wang, Q.; Cantillo Cuello, N.; Nafady, A.; Al-Enizi, M. A.; Waterhouse, I. N. G.; Goenaga, A. G.; Zawodzinski, A. T.; Kruger, E. P.; Clements, E. J.; Zhang, J.*; Tian, H.*; Telfer, S.*; **Ma, S.*** *ACS Nano*, **2019**, *13*, 8087-8098.
35. "PolyCOFs: A New Class of Freestanding Responsive Covalent Organic Framework Membranes with High Mechanical Performance" Wang, Z.; Yu, Q.; Huang, Y.; An, H.; Zhao, Y.; Feng, Y.; Li, X.; Shi, X.; Liang, J.; Pan, F.; Cheng, P.; Chen, Y.*; **Ma, S.***; Zhang, Z.* *ACS Central Science*, **2019**, *5*, 1352-1359. (Highlighted in [C&EN](#); selected in [ACS Weekly PressPac](#); reported by [ScienceDaily](#))
36. "Investigation of the Anticancer Activity of Coordination-Driven Self-Assembled Two-Dimensional Ruthenium Metalla-Rectangle" Vardhan, H.; Nafady, A.*; Al-Enizi, A. M.; Khandker, K.; El-Sagher, H. M.; Verma, G.; Duncan, M. A.; Alotaibi, T. M.; **Ma, S.*** *Molecules*, **2019**, *24*, 2284.

37. "Solvent-assisted coordination driven assembly of a supramolecular architecture featuring two types of connectivity from discrete nanocages" Niu, Z.; Wang, L.; Fang, S.; Lan, P. C.; Aguila, B.; Perman, J.; Ma, J.-G.*; Cheng, P.; Li, X.; **Ma, S.*** *Chem. Sci.*, **2019**, *10*, 6661-6665.
38. "Pore Environment Engineering in Metal-Organic Frameworks for Efficient Ethane/Ethylene Separation" Wang, X.; Niu, Z.; Al-Enizi, A.; Nafady, A.; Wu, Y.; Aguila, B.; Verma, G.; Wojtas, L.; Chen, Y.-S.; Li, Z.*; **Ma, S.*** *J. Mater. Chem. A*, **2019**, *7*, 13585-13590.
39. "Metal-Organic Framework Based Methane Nano-trap for the Capture of Coal-Mine Methane" Niu, Z.; Cui, X.; Pham, T.; Lan, P. C.; Xing, H.; Forrest, K. A.; Wojtas, L.; Space, B.; **Ma, S.*** *Angew Chem. Int. Ed.*, **2019**, *58*, 10138-10141. (VIP) ([Inside Back Cover](#))
40. "Porous Metal-Metalloporphyrin Gel as Catalytic Binding Pocket for Highly Efficient Synergistic Catalysis" Zhang, W.; Dynes, J. J.; Hu, Y.; Jiang, P.*; **Ma, S.*** *Nature Commun.* **2019**, *10*, 1913.
41. "Reaction Environment Modification in Covalent Organic Frameworks for Catalytic Performance Enhancement" Sun, Q.; Tang, Y.; Aguila, B.; Wang, S.; Xiao, F.-S.*; Thallapally, P. K.; Al-Enizi, A. M.; Nafady, A.; **Ma, S.*** *Angew Chem. Int. Ed.*, **2019**, *58*, 8670-8675. ([Front piece](#))
42. "Promoting Frustrated Lewis Pair for Heterogeneous Chemoselective Hydrogenation via Tailored Pore Environment within Metal-Organic Framework" Niu, Z.; Zhang, Z.; Lan, P. C.; Aguila, B.; **Ma, S.*** *Angew Chem. Int. Ed.*, **2019**, *58*, 7420-7424.
43. "Squaramide-Decorated Covalent Organic Framework as a New Platform for Biomimetic Hydrogen-Bonding Organocatalysis" Li, X.; Wang, Z.; Sun, J.; Gao, J.; Zhao, Y.; Cheng, P.; Aguila, B.; **Ma, S.***; Chen, Y.*; Zhang, Z.* *Chem. Commun.*, **2019**, *55*, 5423-5426.
44. "Optimizing Radionuclide Sequestration in Anion Nanotraps with Record Pertechtetate Sorption" Sun, Q.; Zhu, L.; Aguila, B.; Thallapally, P. K.; Xu, C.; Chen, J.; Wang, S.*; Rogers, D.; **Ma, S.*** *Nature Commun.* **2019**, *10*, 1646. ([Behind the Paper](#)) (Highlighted by [DOE](#))
45. "Tuning Pore Heterogeneity in Covalent Organic Frameworks for Enhanced Enzyme Accessibility and Resistance against Denaturants" Sun, Q.; Aguila, B.; Lan, P. C.; **Ma, S.*** *Adv. Mater.* **2019**, *31*, 1900008. ([Back cover](#))
46. "Siderophore-inspired chelator hijacks uranium from aqueous medium" Ivanov, A. S.; Parker, B. F.; Zhang, Z.; Aguila, B.; Sun, Q.; **Ma, S.**; Jansone-Popova, S.; Arnold, J.; Mayes, R. T.; Dai, S.; Bryantsev, V. S.*; Rao, L.*; Popovs, I.* *Nature Commun.* **2019**, *10*, 819. (Highlighted in [C&EN](#))
47. "Opportunities of Porous Organic Polymers for Radionuclide Sequestration" Sun, Q.; Aguila, B.; **Ma, S.*** *Trends in Chemistry*, **2019**, *1*, 292-303.
48. "Vanadium Docked Covalent-Organic Frameworks: An Effective Heterogeneous Catalyst for Modified Mannich-Type Reaction" Vardhan, H.; Hou, L.; Yee, E.; Nafady, A.; Al-Abdrabalnabi, M.; Al-Enizi, A.; Pan, Y.; Yang, Z.; **Ma, S.*** *ACS Sustainable Chem. Eng.*, **2019**, *7*, 4878-4888.

49. "Hollow Capsules of Doped Carbon Incorporating Metal@Metal Sulfide and Metal@Metal Oxide Core-Shell Nanoparticles Derived from Metal-Organic Framework Composites for Efficient Oxygen Electrocatalysis" Guo, F.; Yang, H.*; Liu, L.; Han, Y.; Al-Enizi, A.; Nafady, A.; Kruger, P.; Telfer, S.*; **Ma, S.*** *J. Mater. Chem. A*, **2019**, *7*, 3624-3631.
50. "Indium-Organic Frameworks Based on Dual Secondary Building Units Featuring Halogen-Decorated Channels for Highly Effective CO₂ Fixation" Yuan, Y.; Li, J.; Sun, X.; Li, G.; Liu, Y.*; Verma, G.; **Ma, S.*** *Chem. Mater.* **2019**, *31*, 1084-1091.
51. "Photomechanical organic crystals as smart materials for advanced applications" Yu, Q.; Aguila, B.; Gao, J.; Xu, P; Chen, Q.; Yan, J.; Xing, D.; Chen, Y.; Cheng, P.; Zhang, Z.*; **Ma, S.*** *Chem. Eur. J.*, **2019**, *25*, 5611-5622. (Invited Mini-review)
52. "Incorporation of Biomolecules in Metal-Organic Frameworks for Advanced Applications" An, H.; Li, M.; Gao, J.; Zhang, Z.; **Ma, S.**; Chen, Y.* *Coord. Chem. Rev.* **2019**, *384*, 90-106.
53. "Chemical Detection using a Metal-organic Framework Single Crystal Coupled to an Optical Fiber" Zhu, C.; Perman, J.; Gerald II, R.; **Ma, S.***; Huang, J.* *ACS Appl. Mater. Interfaces*, **2019**, *11*, 4393-4398.
54. "Covalent Organic Framework Decorated with Vanadium as a New Platform for Prins Reaction and Sulphide Oxidation" Vardhan, H.; Verma, G.; Ramani, S.; Nafady, A.; Al-Enizi, A.; Pan, Y.; Yang, Z.; Yang, H.; **Ma, S.*** *ACS Appl. Mater. Interfaces*, **2019**, *11*, 3070-3079.
55. "Antibodies@MOFs: in Vitro Protective Coating for Biopharmaceuticals Preparation and Storage" Feng, Y.; Wang, H.; Zhang, S.; Zhao, Y.; Gao, J.; Zhang, Z.; Zaworotko, M. J.; Cheng, P.; **Ma, S.***; Chen, Y.* *Adv. Mater.* **2019**, *31*, 1805148. ([Front Piece](#))
56. "Opportunities of Covalent Organic Frameworks for Advanced Applications" Song, Y.; Sun, Q.*; Aguila, B.; **Ma, S.*** *Adv. Sci.*, **2019**, *6*, 1801410. ([Front Piece](#))
57. "Metalloenzyme Mimicry at the Nodes of Metal-Organic Frameworks" Sun, Q.; Aguila, B.; **Ma, S.*** *Chem*, *4*, 2736-2738. (Preview)
58. "How do Enzymes Orient when Trapped on Metal-Organic Framework (MOF) Surfaces?" Pan, Y.; Li, H.; Farmakes, J.; Xiao, F.; Chen, B.; **Ma, S.***; Yang, Z.* *J. Am. Chem. Soc.*, **2018**, *140*, 16032-16036.
59. "Covalent Organic Frameworks with Chirality Enriched by Biomolecules for Efficient Chiral Separation" Zhang, S.; Zheng, Y.; An, H.; Aguila, B.; Yang, C.-X.; Dong, Y.; Xie, W.; Cheng, P.; Zhang, Z.*; Chen, Y.*; **Ma, S.*** *Angew Chem. Int. Ed.*, **2018**, *57*, 16754-16759.
60. "Simultaneously Trapping C₂H₂ and C₂H₆ into a Robust Metal - Organic Framework from a Ternary Mixture of C₂H₂/C₂H₄/C₂H₆ for Purification of C₂H₄" Hao, H.-G.; Zhao, Y.-F.; Chen, D.-M.; Yu, J.-M.; Tan, K.; **Ma, S.**; Chabal Y.; Zhang, Z.-M.; Dou, J.-M.; Xiao, Z.-H.; Day, G.; Zhou, H.-C.; Lu, T.-B. *Angew Chem. Int. Ed.*, **2018**, *57*, 16067-16071.
61. "Mussel-Inspired Polydopamine Chemistry to Modulate Template Synthesis of 1D Metal-Organic Framework Superstructures" Yu, B.; Ye, G.*; Zeng, Z.; Zhang, L.; Chen, J.*; **Ma, S.*** *J. Mater. Chem. A*, **2018**, *6*, 21567-21576.

62. "Porous Brønsted Superacid as an Efficient and Durable Solid Catalyst" Sun, Q.; Hu, K.; Leng, K.; Yi, X.; Aguila, B.; Sun, Y.; Zheng, A.; Meng, X.; **Ma, S.**; Xiao, F.-S. *J. Mater. Chem. A*, **2018**, *6*, 18712-18719.
63. "Cobalt Nanoparticles Incorporated into Hollow Doped Porous Carbon Capsules as Highly Efficient Oxygen Reduction Electrocatalyst" Guo, F.*; Yang, H.*; Aguila, B.; Al-Enizi, A.; Nafady, A.; Singh, M.; Bansal, V.; **Ma, S.*** *Catal. Sci. Technol.*, **2018**, *8*, 5244-5250.
64. "Metal-Organic Framework Anchored with Lewis Pair as a New Paradigm for Catalysis" Niu, Z.; Gunatilleke, W. D. C. B.; Sun, Q.; Lan, P. C.; Perman, J.; Ma, J.-G.; Cheng, Y.; Aguila, B.; **Ma, S.*** *Chem*, **2018**, *4*, 2587-2599. (Highlighted in [C&EN; Preview](#) by Prof. Douglas Stephan; Featured on [the 2018 November Issue Cover of Chem](#))
65. "Visualizing Structural Transformation and Guest Binding in a Flexible Metal–Organic Framework under High Pressure and Room Temperature" Yang, H.; Guo, F.; Lama, P.; Gao, W.-Y.; Wu, H.; Barbour, L.; Zhou, W.; Zhang, J.; Aguila, B.; **Ma, S.*** *ACS Central Science*, **2018**, *4*, 1194-1200.
66. "Facile Approach to Graft Ionic Liquid into MOF for Improving the Efficiency of CO₂ Chemical Fixation" Sun, Y.; Huang, H.; Vardhan, H.; Aguila, B.; Zhong, C.; Perman, J. A.*; Al-Enizi, A. M.; Nafady, A.; **Ma, S.*** *ACS Appl. Mater. Interfaces*, **2018**, *10*, 27124–27130.
67. "Creating Solvation Environments in Heterogeneous Catalysts for Efficient Biomass Conversion" Sun, Q.; Wang, S.; Aguila, B.; Meng, X.; **Ma, S.**; Xiao, F.-S. *Nature Commun.* **2018**, *9*, 3236.
68. "Fabrication of Light-Triggered Soft Artificial Muscles via a Mixed Matrix Membrane Strategy" Yu, Q.; Yang, X.; Chen, Y.; Yu, K.; Gao, J.; Liu, Z.; Cheng, P.*; Zhang, Z.*; Aguila, B.; **Ma, S.*** *Angew Chem. Int. Ed.*, **2018**, *57*, 10192-10196. (VIP)
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Application number: 20A051PR_Ma (2020)

2. **Ma, S.;** Yang, H. "ATOMICALLY DISPERSED METAL CATALYSTS AND APPLICATIONS THEREOF" Application number: 20A029PR_Ma (2020)
3. **Ma, S.;** Sun, Q. "Covalent Organic Frameworks and Applications as Photocatalysts" Application number: 19B161PR_Ma (2019)**Ma, S.;** Zhao, Y. "Corrole-Based Frameworks and Methods of Use Thereof" Application number: 19B132PR (2019)
4. **Ma, S.;** Niu, Z. "FRUSTRATED LEWIS PAIR-IMPREGNATED POROUS MATERIALS AND USES THEREOF" Application number: 19A067PR (2019)
5. **Ma, S.;** Sun, Q.; Aguila, B. "Mercury Capture Using Functionalized Porous Organic Polymer with Hierarchical Porosity" Application number: 17B167PRC (2018)
6. **Ma, S.;** Sun, Q.; Aguila, B. "Superhydrophobic Covalent Organic Framework Materials" Application number: 16B177PR2 (2018)
7. **Ma, S.;** Sun, Q.; Aguila, B. "MULTIFUNCTIONAL POROUS MATERIALS FOR WATER PURIFICATION AND REMEDIATION" Application number: 17B109PR (2018)
8. **Ma, S.;** Sun, Q.; Aguila, B. "FUNCTIONALIZED POROUS ORGANIC POLYMERS AS URANIUM NANO-TRAPS FOR EFFICIENT URANIUM EXTRACTION FROM SEAWATER AND RECOVERY FROM NUCLEAR WASTE" Application number: 17B111PR (2018)
9. **Ma, S.;** Xiao, F.-S.; Sun, Q. "Amphiphobic Porous Materials" Application number: 16B177PRWO (2016)
10. **Ma, S.;** Li, B. "Porous Organic Polymers for Binding Heavy Metals", PCT Int. Appl. (2016), WO 2016028434 A1 20160225.
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Invited Seminars and Presentations

1. Pacific Northwest National Laboratory, WA (10/2019)
2. 20th Chinese Zeolite Conference, Hangzhou, China (Keynote, 10/2019)
3. Department of Chemistry & Biochemistry, Miami University, Ohio (Gordon Lecture, 09/2019)
4. The 10th National Conference on Environmental Chemistry, Tianjin, China (Keynote; 08/2019)
5. *Chem & Matter Symposium*, 8th International Conference on Nanoscience and Technology, China (ChinaNANO 2019), Beijing, China (Keynote; 08/2019)
6. International Workshop on Organic Frameworks, Tianjin University, Tian Jin, China (05/2019)
7. Symposium "Carbon Dioxide Conversion & Utilization", 257th ACS National Meeting, Orlando, FL (04/2019)
8. Symposium in honor of Carter Abney, 257th ACS National Meeting, Orlando, FL (04/2019)
9. Department of Chemistry & Biochemistry, Southern Illinois University-Carbondale (03/2019)
10. Advanced Membranes and Porous Materials (AMPM) research center, KAUST, Saudi Arabia (03/2019)
11. King Abdullah Institute for Nanotechnology, King Saud University, Riyadh, Saudi Arabia (03/2019)
12. Symposium on covalent organic frameworks and metal-organic frameworks, 10th Singapore International Chemistry Conference, Singapore (12/2018)
13. 6th International Conference on Metal-Organic Frameworks (MOF 2018), Auckland, New Zealand (12/2018)
14. College of Chemistry and Materials Science, Jinan University, Guangzhou, China (12/2018)
15. College of Chemistry & Chemical Engineering, South China University of Technology, Guangzhou, China (12/2018)
16. College of Chemistry, Sichuan University, Chengdu, China (12/2018)
17. Lehn Institute of Functional Materials, School of Chemistry, Sun Yat-Sen University, Guangzhou, China (12/2018)
18. Department of Chemistry and Biochemistry, North Dakota State University (10/2018)
19. Department of Chemistry and Biochemistry, University of Arkansas (09/2018)
20. Symposium "Meeting the Challenges of Heterogeneous Catalysis Controlled at Atomic Level", 256th ACS National Meeting, Boston, MA (08/2018)
21. Symposium "Covalent Organic Frameworks", State Key Laboratory of Applied Organic Chemistry" Lanzhou University, Lanzhou, China (07/2018)
22. Department of Chemistry, Zhejiang University, Hangzhou, China (07/2018)
23. College of Chemistry, Nankai University, Tianjin, China (07/2018)
24. College of Materials Science and Engineering, Nankai University, Tianjin, China (07/2018)

25. Institute for New Energy Materials & Low Carbon Technologies, Tianjin University of Technology, Tianjin, China (07/2018)
26. Department of Chemistry, Tianjin University, Tianjin, China (07/2018)
27. Center of Nuclear Environmental Chemistry, Soochow University, Suzhou, China (07/2018)
28. College of Chemistry, Chemical Engineering and Materials Science, Soochow University, Suzhou, China (07/2018)
29. College of Materials Science & Engineering, Fuzhou University, Fuzhou, China (07/2018)
30. Fujian Institute of Research on the Structure of Matter Chinese Academy of Sciences, Fuzhou, China (07/2018)
31. 8th North America-Greece-Cyprus Workshop on Paramagnetic Materials, Sparta, Greece (06/2018)
32. Changchun Institute of Applied Chemistry, Chinese Academy Science, Changchun, China (06/2018)
33. College of Chemistry, Northeast Normal University, Changchun, China (06/2018)
34. College of Environmental and Energy Engineering, Beijing University of Technology, Beijing, China (06/2018)
35. School of Materials Science & Engineering, Zhejiang University (05/2018)
36. Division of Chemical Science & Engineering, Argonne National Laboratory (05/2018)
37. Department of Chemistry, Clemson University (05/2018)
38. Physical Chemistry Symposium, Florida ACS Meeting and Exposition (FAME) (05/2018)
39. Symposium "Advanced Materials for Carbon Capture and Other Important Gas Separations" MRS Spring 2018, Phoenix, AZ (04/2018)
40. King Abdullah Institute for Nanotechnology, King Saud University, Riyadh, Saudi Arabia (03/2018)
41. Symposium "Metal-Organic Frameworks: What Are Next?", 255th ACS National Meeting, New Orleans, LA (03/2018)
42. ACS Award in Pure Chemistry: Symposium in honor of Mircea Dinca, 255th ACS National Meeting, New Orleans, LA (03/2018)
43. College of Chemical and Biological Engineering, Zhejiang University, Hangzhou, China (12/2017)
44. School of Chemistry & Chemical Engineering, Shanghai Jiao Tong University, Shanghai, China (12/2017)
45. Department of Chemistry, Tamkang University, Taiwan (12/2017)
46. Department of Chemistry, University of North Texas (10/2017)
47. Texas A&M Energy Institute Research Workshop, Texas A&M University (09/2017) (Keynote)
48. 603th Xiangshan Science Conference on the Uranium Extraction from Seawater, Beijing, China (09/2017)

49. Center of Nuclear Environmental Chemistry, Soochow University, China (09/2017)
50. Symposium "Fundamental Aspects of Metal Organic Framework Catalysis", 254th ACS National Meeting, Washington DC (08/2017)
51. Symposium "Structural & Supramolecular Aspects of Metal Ion Separations", 254th ACS National Meeting, Washington DC (08/2017)
52. College of Chemistry, Tianjin Normal University, Tianjin, China (07/2017)
53. State Key Laboratory of Medicinal Chemical Biology, Nankai University, Tianjin, China (07/2017)
54. State Key Laboratory of Coordination Chemistry, Nanjing University, Nanjing, China (07/2017)
55. College of Chemical Engineering, Nanjing Tech University, Nanjing, China (07/2017)
56. College of Chemistry, Chemical Engineering and Material Science, Soochow University, China (07/2017)
57. School of Materials Science and Engineering, Zhejiang University, Hangzhou, China (07/2017)
58. College of Chemistry, Chongqing Normal University, Chongqing, China (07/2017)
59. State Key Laboratory of Applied Organic Chemistry, Lanzhou University, Lanzhou, China (07/2017)
60. "New Directions in Crystalline Porous Materials: Faraday Discussion", Edinburgh, United Kingdom (06/2017)
61. College of Chemistry, Northeast Normal University, Changchun, China (07/2017)
62. State Key Laboratory of Inorganic Synthesis & Preparative Chemistry, Jilin University, Changchun, China (05/2017)
63. Key laboratory for the Chemistry and Molecular Engineering of Medicinal Resources, Guangxi Normal University, Guilin, China (05/2017)
64. State Key Laboratory of Inorganic Synthesis & Preparative Chemistry, Jilin University-Zhuhai Campus, Zhuhai, China (05/2017)
65. Materials Symposium, Florida ACS Meeting and Exposition (FAME) (05/2017)
66. Symposium "Functional porous materials for Sustainable Energy", 253rd ACS National Meeting, San Francisco (04/2017)
67. "F. Albert Cotton Award in Synthetic Inorganic Chemistry: Symposium in honor of Pingyun Feng", 253rd ACS National Meeting, San Francisco (04/2017)
68. 2017 FLAVS/FSM joint symposium/Renewable Energy, University of Central Florida, Orlando (03/2017)
69. Symposium of Functional Molecular Crystals, 6th Chinese Crystallographic Society National Meeting, Guangzhou, China (12/2016)
70. Lehn Institute of Functional Materials, Sun Yat-Sen University, Guangzhou, China (12/2016)

71. State Key Laboratory of Physical Chemistry of Solid Surfaces, Xiamen University, Xiamen, China (12/2016)
72. Department of Chemistry & Biochemistry, The Florida State University (12/2016)
73. Symposium "Supramolecular Assemblies and Metal-Organic Frameworks", SERMACS 2016 (10/2016)
74. College of Chemistry and Molecular Engineering, Peking University, Beijing, China (08/2016)
75. Technical Institute of Physics and Chemistry, Chinese Academy of Science, Beijing, China (08/2016)
76. Department of Chemistry, Tsinghua University, Beijing, China (08/2016)
77. Department of Chemistry, Fudan University, Shanghai, China (08/2016)
78. School of Chemistry & Chemical Engineering, Shanghai Jiao Tong University, Shanghai, China (08/2016)
79. School of Physical Science and Technology, ShanghaiTech University, Shanghai, China (08/2016)
80. Changchun Institute of Applied Chemistry, Chinese Academy Science, Changchun, China (08/2016)
81. College of Chemistry, Northeast Normal University, Changchun, China (08/2016)
82. International Conference on Seawater Uranium Recovery, University of Maryland, College Park (07/2016)
83. Ninth International Conference on Porphyrins and Phthalocyanines (ICPP-9), Nanjing, China (07/2016).
84. College of Environmental and Energy Engineering, Beijing University of Technology, Beijing, China (07/2016)
85. Technical Institute of Physics and Chemistry, Chinese Academy of Science, Beijing, China (07/2016)
86. School of Chemistry and Materials Science, Nanjing Normal University, Nanjing, China (07/2016)
87. State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan, China (06/2016)
88. School of Chemistry and Molecular Sciences, Wuhan University, Wuhan, China (06/2016)
89. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, China (06/2016)
90. School of Chemical & Materials Engineering, Jiangnan University, Wuxi, China (06/2016)
91. Symposium "Designer Molecule-derived Materials" 99th Canadian Chemistry Conference and Exhibition, Halifax, Canada (06/2016)
92. Department of Chemistry, University of California-Riverside (05/2016)

93. Symposium "Frontiers of Organic Porous Materials: Structures, Properties and Applications" Pacifichem 2015 (12/2015)
94. Symposium "Metal-Organic Frameworks: Synthesis, Properties and Applications" Pacifichem 2015 (12/2015)
95. Symposium "Metal Organic Frameworks for Catalysis Applications" 250th ACS National Meeting (Boston, August, 2015)
96. Department of Chemistry, Ulsan National Institute of Science and Technology, Ulsan, Korea
97. Symposium "Functional Coordination Polymers", IUPAC 2015 (08/2015)
98. Young Chemists Lecture, IUPAC 2015 (08/2015)
99. Telluride Science Research Center (TSRC) workshop on "Metal-organic frameworks: Experiments and Simulations" Telluride, Colorado (06/2015)
100. 6th North America-Greece-Cyprus Workshop on Paramagnetic Materials (NAGC 2015), Athens, Greece (06/2015)
101. School of Chemistry & Chemical Engineering, Shanghai Jiao Tong University, Shanghai, China (06/2015)
102. 1st International Conference on Microstructure and Property of Materials Zhejiang University, China (05/2015)
103. Department of Chemistry, University of Science and Technology of China (USTC), Hefei, China (05/2015)
104. The 2nd SYSU International Symposium on MOF and Related Open Framework Materials, Sun Yat-Sen University, Guangzhou, China (05/2015)
105. Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou, China (05/2015)
106. Fujian Normal University, Fuzhou, China (05/2015)
107. Fuzhou University, Fuzhou, China (05/2015)
108. Department of Chemistry, University of South Dakota (03/2015)
109. Department of Physics, University of South Florida (02/2015)
110. Advanced Membranes and Porous Materials (AMPM) research center, KAUST, Saudi Arabia (12/2015)
111. Department of Chemistry, University of Texas-Austin (11/2014)
112. Department of Chemistry, Texas A&M University (11/2014)
113. Department of Chemistry, University of Texas-San Antonio (11/2014)
114. Department of Chemistry & Biochemistry, Ohio State University (10/2014)
115. Department of Chemistry, West Virginia University (10/2014)
116. Pre-Conference of MOF2014, Osaka, Japan (09/2014)
117. Pre-MOF 14 "Young Investigators" Symposium, Kyoto, Japan (09/2014)
118. Institute for Molecular Science, Okazaki, Japan (09/2014)

119. School of Chemistry and Chemical Engineering, Sun Yat-Sen University, Guangzhou, China (07/2014)
120. International Conference on Coordination Chemistry (ICCC-41) – Singapore (07/2014)
121. Telluride Science Research Center (TSRC) workshop on “Metal-organic frameworks: Experiments and Simulations” Telluride, Colorado (07/2014)
122. College of Chemistry, Nankai University, Tianjin, China (06/2014)
123. College of Chemical and Environmental Engineering, Beijing University of Technology, Beijing, China (06/2014)
124. Department of Chemistry, Zhejiang University, Hangzhou, China (06/2014)
125. College of Chemistry, Bohai University (06/2014)
126. State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, Changchun, China (06/2014)
127. Department of Chemical Engineering, Harbin Institute of Technology, Harbin, China (06/2014)
128. Institute of Chemistry, Academia Sinica, Taipei, Taiwan (06/2014)
129. Department of Chemistry, Chung Yuan Christian University, Chung Li, Taiwan (06/2014)
130. Department of Chemistry, National Chung Hsing University, Taichung, Taiwan (06/2014)
131. Department of Chemical Engineering, National Taiwan University, Taiwan (06/2014)
132. MRS Spring 2014, San Francisco, CA (04/2014)
133. Symposium of Nanotechnology Application in Energy, 246th ACS National Meeting, Indianapolis, IN (09/2013)
134. Division of Chemical Sciences, Oak Ridge National Laboratory (08/2013)
135. MOF Symposium, 245th ACS National Meeting, New Orleans, LA (04/2013)
136. Symposium of Hydrogen Production, Storage, and Utilization, 245th ACS National Meeting, New Orleans, LA (04/2013)
137. Symposium of Metal-Organic Frameworks (MOFs) for Energy and Fuels, 245th ACS National Meeting, New Orleans, LA (04/2013)
138. Department of Chemical & Biochemical Engineering, University of South Florida (10/2012)
139. Department of Chemistry, University of North Florida (09/2012)
140. Gordon Research Conference-Crystal Engineering (June, 2012)
141. 243rd ACS National Meeting, San Diego, CA (03/2012)
142. New Horizons in Molecular Science 2011: Design and Application of Porous Frameworks, University of South Florida (06/2011)
143. State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, Changchun, China (06/2010)

144. Department of Mechanic Engineering, Purdue School of Engineering and Technology, IUPUI (05/13/2010)
145. 2009 APS Users Week Workshop, Argonne National Laboratory, Argonne, IL (05/06/2009)
146. Young Investigator Symposium of DIC, 236th ACS National Meeting, Philadelphia, PA (08/2008)
147. State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, China (06/2008)

Memberships in Professional Organizations

- **2016 - present** Roy Society of Chemistry
- **2015 - present** Society of Porphyrins and Phthalocyanines
- **2014 - present** Materials Research Society
- **2007 - present** Sigma Xi
- **2005 - present** American Chemical Society